

 **FORSAFLEX™**

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2023 Hydraulic  
Hose & Fittings Catalog

**FORSAFLEX™**

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BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# Application Symbols

	<b>Agriculture</b>		<b>Air Conditioning</b>		<b>Chemical</b>
	<b>Cleaning</b>		<b>Compressors</b>		<b>Concrete</b>
	<b>Construction</b>		<b>Energy</b>		<b>Environmental Oils</b>
	<b>Food Industry</b>		<b>Forestry</b>		<b>Hydraulic Jack</b>
	<b>Hydraulic Tools</b>		<b>Industrial</b>		<b>Lifting</b>
	<b>Material Handling</b>		<b>Marine/Off Shore</b>		<b>Mining &amp; Drilling</b>
	<b>Oil-Gas</b>		<b>Trains</b>		<b>Transportation</b>
	<b>Sewer Industry</b>		<b>Utility Equipment</b>		

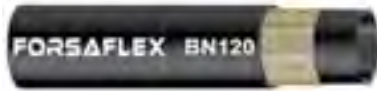
## Symbols/Letters Used in Column Heading

	<b>Hose Inside Diameter (ID)</b>	<b>A</b>	<b>Flange Diameter</b>	<b>K</b>	<b>Drop Length</b>
	<b>Hose Outside Diameter (OD)</b>	<b>C</b>	<b>Flange Thickness</b>	<b>L</b>	<b>Length</b>
	<b>Maximum Working Pressure</b>	<b>E</b>	<b>Standpipe Diameter</b>		<b>Swivel Hex</b>
	<b>Minimum Burst Pressure</b>	<b>F</b>	<b>Thread</b>		<b>Stem Hex</b>
	<b>Minimum Bend Radius</b>	<b>H</b>	<b>Cut-off</b>		

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## BN120

### SAE 100R1AT - EN853 1SN - MSHA



**Tube:** Black; oil resistant synthetic rubber  
**Reinforcement:** One steel wire braid  
**Cover:** ¼" - 1", Smooth black, oil, high abrasion and weather resistant synthetic rubber, MSHA  
 1¼" - 2" Wrapped, black, oil, high abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** ¾" - 1" Reels, 1¼" - 2" Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN120-03	3/8	11.6	0.46	11.6	3,625	25.0	14,500	100.0	3.5	90	0.11	E	--	110 - W
BN120-04	1/4	13.2	0.52	13.2	3,265	22.5	13,060	90.0	4.0	100	0.14	E	--	110 - W
BN120-05	5/8	14.8	0.58	14.8	3,120	21.5	12,480	86.0	4.5	115	0.18	E	--	110 - W
BN120-06	3/8	17.2	0.68	17.2	2,610	18.0	10,440	72.0	5.0	130	0.22	E	N	110 - W
BN120-08	1/2	20.4	0.80	20.4	2,320	16.0	9,280	64.0	7.0	180	0.27	E	N	110 - W
BN120-12	3/4	27.5	1.08	27.5	1,525	10.5	6,100	42.0	9.5	240	0.38	E	N	110 - W
BN120-16	1	35.4	1.39	35.4	1,275	8.7	5,100	34.8	12.0	300	0.60	E	N	110 - W
BN120-20	1 1/4	43.3	1.70	43.3	915	6.2	3,660	24.8	16.5	420	0.80	E	N	110 - W
BN120-24	1 1/2	50.0	1.97	50.0	725	5.0	2,900	20.0	20.0	500	1.08	E	N	110 - W
BN120-32	2	63.0	2.48	63.0	580	4.0	2,320	16.0	25.0	630	1.52	E	N	110 - W

# 1

# Braided Hose

## BN200

### SAE 100R2AT - EN853 2SN - MSHA



**Tube:** Nitrile  
**Reinforcement:** Two braids of high tensile steel wire  
**Cover:** ¼" - 1", Smooth black, oil, high abrasion and weather resistant synthetic rubber, MSHA  
 1¼" - 2" Wrapped, black, oil, high abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** ¼" - 1" Reels, 1¼" - 2" Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN200-04	1/4	15.0	0.59	15.0	5,800	40.0	24,000	165.0	3.9	100	0.24	E	--	210 - W
BN200-06	3/8	19.0	0.74	19.0	5,000	35.0	20,000	140.0	5.0	130	0.34	E	N	210 - W
BN200-08	1/2	22.2	0.88	22.2	4,000	27.5	16,000	111.0	7.1	180	0.43	E	N	210 - W
BN200-10	5/8	25.2	0.99	25.2	3,625	25.0	14,500	100.0	7.9	200	0.49	E	N	210 - W
BN200-12	3/4	29.3	1.15	29.3	3,125	21.5	12,480	86.0	9.5	241	0.61	E	N	210 - W
BN200-16	1	38.1	1.50	38.1	2,400	16.5	9,600	66.2	11.8	300	0.88	E	N	210 - W
BN200-20	1 1/4	48.3	1.90	48.3	1,813	12.5	7,250	50.0	16.5	420	1.37	E	N	210 - W
BN200-24	1 1/2	54.6	2.15	54.6	1,305	9.0	5,220	36.0	19.7	500	1.55	E	N	210 - W
BN200-32	2	66.9	2.63	66.9	1,160	8.0	4,640	32.0	24.8	630	2.12	E	N	210 - W

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# Braided

## BN160

SAE 100R17 - MSHA



**Tube:** Nitrile  
**Reinforcement:** One wire braid  
**Cover:** Smooth, black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft			
BN160-04	1/4	0.48	12.2	3,000	21.0	12,000	84.0	2.0	51	0.12	E	190 - W	
BN160-06	3/8	0.61	15.5	3,000	21.0	12,000	84.0	2.6	65	0.19	E	190 - W	
BN160-08	1/2	0.75	19.1	3,000	21.0	12,000	84.0	3.5	90	0.24	E	110 - W	
BN250-10	5/8	0.94	23.8	3,625	25.0	14,500	100.0	3.9	100	0.37	E	110 - W	
BN250-12	3/4	1.09	27.7	3,000	21.0	12,000	84.0	4.7	120	0.55	E	110 - W	
BN250-16	1	1.42	36.0	3,000	21.0	12,000	84.0	5.9	150	0.77	E	110 - W	

## BN175

SAE 100R17 - MSHA



**Tube:** Nitrile  
**Reinforcement:** 1/4" thru 1/2" One wire braid, 3/4" thru 1" Two wire braids  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft			
BN175-04	1/4	0.48	12.2	3,000	21.0	12,000	84.0	1.5	38	0.12	E	--	190 - W
BN175-06	3/8	0.61	15.5	3,000	21.0	12,000	84.0	2.0	50	0.19	E	--	190 - W
BN175-08	1/2	0.75	19.1	3,000	21.0	12,000	84.0	2.8	71	0.24	E	--	110 - W

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## BN250

### SAE 100R16 - EN857 2SC - MSHA



**Tube:** Nitrile

**Reinforcement:** Two braids of high tensile steel wire

**Cover:** ¼" - 1", Smooth black, oil, high abrasion and weather resistant synthetic rubber, MSHA  
1¼" - 3" Wrapped, black, oil, high abrasion and weather resistant synthetic rubber, MSHA

**Temperature:** -40°C to +100°C (-40°F to +212°F), intermittent use up to 121°C (250°F)

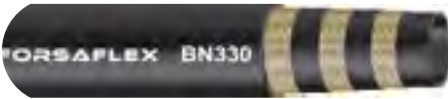
**Packaging:** ¼" - 1" Reels, 1¼" - 3" Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN250-04	¼	0.53	13.4	5,800	40.0	23,220	160.0	2.0	50	0.17	E	--	110 - W	
BN250-06	⅜	0.67	17.0	5,000	35.0	20,000	140.0	2.6	65	0.27	E	N	110 - W	
BN250-08	½	0.80	20.4	4,250	29.5	17,000	118.0	3.5	90	0.34	E	N	110 - W	
BN250-10	⅝	0.93	23.8	3,625	25.0	14,500	100.0	3.9	100	0.37	E	N	110 - W	
BN250-12	¾	1.09	27.7	3,125	21.5	12,500	86.0	4.7	120	0.50	E	N	110 - W	
BN250-16	1	1.40	35.6	3,000	21.0	12,000	84.0	5.9	150	0.77	E	N	110 - W	
BN250-20	1¼	1.70	43.1	1,800	12.5	7,200	50.0	8.3	210	1.60	E	N	110 - W	
BN250-24	1½	1.99	50.6	1,300	9.0	5,200	36.0	16.5	420	2.05	E	N	110 - W	
BN250-32	2	2.49	63.5	1,160	8.0	4,640	32.0	22.8	580	2.67	E	N	110 - W	
BN250-40	2½	3.12	78.0	725	5.0	2,900	20.0	27.6	700	2.43	--	--	110 - W	
BN250-48	3	3.59	90.1	500	3.5	2,000	14.0	34.3	870	3.60	--	--	110 - W	

## BN330

### 3SC - Three Wire Braid



**Tube:** Nitrile

**Reinforcement:** Three braids of high tensile steel wire

**Cover:** Wrapped black, oil, high abrasion and weather resistant synthetic rubber

**Temperature:** -40°C to +100°C (-40°F to +212°F)

**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN330-06	⅜	0.74	18.8	7,250	500	29,000	2,000	110	4.33	0.42	E	N	210 - W	
BN330-08	½	0.88	22.4	6,900	475	27,200	1,900	140	5.51	0.55	E	N	210 - W	
BN330-12	¾	1.17	29.7	5,500	380	22,000	1,520	240	9.45	0.80	E	N	210 - W	
BN330-16	1	1.53	38.8	4,500	315	18,000	1,260	300	11.81	1.31	E	N	210 - W	

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## BN300 Extended Service Exceeds SAE 100R16 - EN857 2SC - MSHA



**Tube:** Nitrile  
**Reinforcement:** Two braids of ultra high tensile steel wire  
**Cover:** ¼" - 1" Smooth black high abrasion, oil and weather resistant synthetic rubber, MSHA  
 1¼" - 2" Wrapped black high abrasion, oil and weather resistant synthetic rubber, MSHA  
**Temperature:** -50°C to +120°C (-58°F to +250°F)  
**Packaging:** ¼" - 1" Reels, 1¼" - 2" Coils

Higher Pressure  
 2x Abrasion Resistance  
 1,000,000 Impulse



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN300-04	¼	13.3	0.52	13.3	6,200	43.0	24,800	172.0	2.0	50	0.19	E	--	110 - W
BN300-06	⅜	17.1	0.67	17.1	5,000	35.0	20,000	140.0	2.8	70	0.28	E	N	110 - W
BN300-08	½	20.4	0.80	20.4	4,500	31.0	18,000	124.0	3.2	80	0.35	E	N	110 - W
BN300-10	⅝	23.5	0.92	23.5	4,000	28.0	16,000	112.0	3.9	100	0.42	E	N	110 - W
BN300-12	¾	27.6	1.08	27.6	3,500	24.0	14,000	96.0	4.7	120	0.51	E	N	110 - W
BN300-16	1	35.8	1.40	35.8	3,000	21.0	12,000	84.0	6.3	160	0.79	E	N	110 - W
BN300-20	1¼	43.1	1.68	43.1	2,320	16.0	9,280	64.0	9.8	250	1.00	E	N	110 - W
BN300-24	1½	50.6	1.97	50.6	2,175	15.0	8,700	60.0	10.2	260	1.43	E	N	110 - W
BN300-32	2	63.5	2.48	63.5	1,450	10.0	5,800	40.0	14.1	360	1.88	E	N	110 - W

## BN350 Extended Service Exceeds SAE 100R16 - EN857 2SC - MSHA



**Tube:** Nitrile  
**Reinforcement:** Two braids of ultra high tensile steel wire  
**Cover:** ¼" - 1" Smooth black high abrasion, oil and weather resistant synthetic rubber, MSHA  
**Temperature:** -50°C to +125°C (-58°F to +257°F)  
**Packaging:** ¼" - 1" Reels

Higher Pressure  
 2x Abrasion Resistance  
 1,000,000 Impulse



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		E	N	
BN350-04	¼	13.4	0.53	13.4	6,500	45.0	26,000	180.0	1.77	45	0.18	E	--	110 - W
BN350-05	⅜	15.0	0.59	15.0	6,000	42.0	24,000	168.0	2.36	60	0.21	E	--	110 - W
BN350-06	½	17.0	0.67	17.0	5,600	39.0	22,000	154.0	2.76	70	0.27	E	N	110 - W
BN350-08	¾	20.7	0.81	20.7	5,000	35.0	20,000	140.0	3.54	90	0.36	E	N	110 - W
BN350-10	1	24.0	0.94	24.0	4,200	29.0	16,800	116.0	5.12	130	0.43	E	N	110 - W
BN350-12	1¼	27.7	1.09	27.7	4,000	27.5	16,000	112.0	6.30	160	0.54	E	N	110 - W
BN350-16	1½	35.6	1.40	35.6	3,000	21.0	12,000	84.0	8.27	210	0.78	E	N	110 - W

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## BN170T

### SAE 100R17 - EN857 1SC



**Tube:** Nitrile

**Reinforcement:** One wire braid of high tensile steel wire.

**Cover:** Smooth black, oil, abrasion and weather resistant synthetic rubber, MSHA approved

**Temperature:** -40°C to +121°C (-40°F to +250°F), intermittent use up to +135°C (+275°F)

**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling	Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm			
BN170T-06	3/8	9.5	0.62	15.7	3,625	25.0	14,500	100.0	2.4	60	0.28	E	190 - W

## BN270T

### SAE 100R16 - EN857 2SC



**Tube:** Nitrile

**Reinforcement:** Two braids of high tensile steel wire

**Cover:** Smooth black, oil, high abrasion and weather resistant synthetic rubber

**Temperature:** -40°C to +121°C (-40°F to +250°F), intermittent use up to +135°C (+275°F)

**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling	Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm			
BN270T-06	3/8	9.5	0.67	17.1	5,000	35.0	20,000	140.0	2.8	70	0.84	E	110 - W
BN270T-08	1/2	12.7	0.81	20.5	4,500	31.0	18,000	124.0	3.2	80	1.04	E	110 - W

# Spiral

## SN300 Extended Service Exceeds SAE 100R12 - EN856 4SP/4SH - MSHA



**Tube:** Nitrile  
**Reinforcement:** High tensile steel four spiral wire  
**Cover:** Wrapped, black, synthetic rubber, high abrasion resistant, meets requirements of MSHA fire resistance standards  
**Temperature:** -54°C to +121°C (-65°F to +250°F)  
**Packaging:** 3/8" - 3/4" reels/coils, 1" - 2" coils

Higher Pressure  
2x Abrasion Resistance  
1,000,000 Impulse



1  
Spiral Hose

Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling			Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	N		V	VS		
SN300-06	3/8	0.80	20.2	6,000	42.0	24,000	168.0	5.12	130	0.46	N	--	--	460 - W	
SN300-08	1/2	0.94	23.8	6,000	42.0	24,000	168.0	5.52	140	0.51	N	--	--	460 - W	
SN300-10	5/8	1.08	27.4	6,000	42.0	24,000	168.0	6.10	155	0.65	N	--	--	460 - W	
SN300-12	3/4	1.20	30.6	5,000	35.0	20,000	140.0	7.77	195	0.75	N	V	--	460 - W	
SN300-16	1	1.49	37.6	5,500	38.5	22,000	154.0	9.84	250	1.14	N	V	--	460 - W	
SN300-20	1 1/4	1.87	44.3	5,000	35.0	20,000	140.0	16.5	420	1.63	N	--	VS	464 - W	
SN300-24	1 1/2	2.12	53.5	4,300	30.0	17,200	120.0	19.7	500	1.97	N	--	VS	464 - W	
SN300-32	2	2.63	67.0	3,600	25.0	14,400	100.0	23.6	600	2.98	N	--	VS	464 - W	

## SZ400



**Exceeds SAE 100R12 - MSHA**  
**Tube:** Nitrile  
**Reinforcement:** Four spirals of high tensile steel  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling			Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	E		N	V		
SZ400-06	3/8	0.78	19.7	6,000	42.0	24,000	168.0	5.12	130	0.46	E	N	--	460 - W	
SZ400-08	1/2	0.88	22.4	5,000	35.0	20,000	140.0	5.52	140	0.52	E	N	--	460 - W	
SZ400-10	5/8	1.04	22.6	5,000	35.0	20,000	140.0	6.10	155	0.68	E	N	--	460 - W	
SZ400-12	3/4	1.15	29.3	5,000	35.0	20,000	140.0	7.68	195	0.75	E	N	V	460 - W	
SZ400-16	1	1.45	36.8	5,000	35.0	20,000	140.0	9.84	250	1.20	E	N	V	460 - W	
SZ400-20	1 1/4	1.77	45.0	5,000	35.0	20,000	140.0	16.54	420	1.71	--	N	VS	464 - W	
SZ400-24	1 1/2	2.06	52.2	4,300	30.0	17,200	120.0	19.69	500	2.01	--	N	VS	464 - W	
SZ400-32	2	2.68	68.1	3,600	25.0	14,400	100.0	23.62	600	3.05	--	N	VS	464 - W	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## SZ500

### SAE 100R13 - EN856 R13



**Tube:** Nitrile  
**Reinforcement:** 6 spirals of high tensile steel  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft		
SZ500-24	1½	2.26	57.6	5,000	35.0	20,000	140.0	19.6	500	3.40	VS	
SZ500-32	2	2.82	71.6	5,000	35.0	20,000	140.0	24.8	630	4.40	VS	
SZ500-48	3	3.83	97.5	3,000	35.0	12,760	85.0	39.4	1,000	3.39	--	

### SZ500-48

- Hydraulic service 3,000 PSI WP - minimum burst pressure is 4 x max working pressure at 23°C (73°F)
- Oil field service 5,000 PSI WP - minimum burst pressure is 2.5 x max working pressure at 23°C (73°F)

## SN600

### SAE 100R15 - ISO3862 R15 - MSHA



**Tube:** Nitrile  
**Reinforcement:** ¾ & 1" 4 spirals, 1¼ thru 2" 6 spirals of high tensile steel wire  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -40°C to +121°C (-40°F to +250°F)  
**Packaging:** Coils

2x Abrasion Resistant  
1,000,000 Impulse



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft			
SN600-12	¾	1.20	30.7	6,000	42.0	24,000	168.0	8.3	210	0.98	V		
SN600-16	1	1.52	38.7	6,000	42.0	24,000	168.0	9.4	240	1.42	V		
SN600-20	1¼	1.97	50.0	6,000	42.0	24,000	168.0	10.4	265	2.62		VS	
SN600-24	1½	2.27	57.6	6,000	42.0	24,000	168.0	12.2	310	3.48		VS	
SN600-32	2	2.95	75.0	6,000	42.0	24,000	168.0	23.2	590	4.63			X

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# SN650 Compact EXCEEDS SAE 100R15 - ISO3862 R15 - MSHA

**EXTENDED SERVICE**



**Tube:** Nitrile  
**Reinforcement:** ¾ & 1" 4 spirals, 1¼ 6 spirals of high tensile steel wire  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -54°C to +121°C (-65°F to +250°F)  
**Packaging:** Coils

2x Abrasion Resistant  
1,000,000 Impulse



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling		
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft				
SN650-12	¾	1.20	30.6	6,000	42.0	24,000	168.0	4.7	120	0.98	V	--	--	
SN650-16	1	1.50	38.1	6,000	42.0	24,000	168.0	5.9	150	1.32	V	--	--	
SN650-20	1¼	1.90	48.2	6,000	42.0	24,000	168.0	8.3	210	2.30	--	VS	--	

# SZ600 SAE 100R15 - ISO3862 R15 - MSHA

**EXTENDED SERVICE**



**Tube:** Nitrile  
**Reinforcement:** ¾ & 1" 4 spirals, 1¼ thru 2" 6 spirals of high tensile steel wire  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -50°C to +125°C (-58°F to +257°F)  
**Packaging:** Coils

2x Abrasion Resistant  
1,000,000 Impulse



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling		
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft				
SZ600-12	¾	1.20	30.6	6,000	42.0	24,000	168.0	8.3	210	0.98	V	--	--	
SZ600-16	1	1.52	38.1	6,000	42.0	24,000	168.0	9.4	240	1.42	V	--	--	
SZ600-20	1¼	1.97	50.2	6,000	42.0	24,000	168.0	10.4	265	2.62	--	VS	--	
SZ600-24	1½	2.25	57.2	6,000	42.0	24,000	168.0	12.2	310	3.48	--	VS	--	
SZ600-32	2	2.81	71.5	6,000	42.0	24,000	168.0	23.2	590	4.63	--	--	X	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## CT30

### SAE 100R12 - EN856 R12 - MSHA



**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** Four spirals of high tensile wire  
**Cover:** Wrapped black, oil, abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm			
CT30-06	3/8	0.80	20	4,000	28.0	16,000	112.0	2.5	64	0.40	N	
CT30-08	1/2	0.94	24	4,000	28.0	16,000	112.0	3.5	89	0.54	N	
CT30-10	5/8	1.08	27	4,000	28.0	16,000	112.0	4.0	102	0.74	N	
CT30-12	3/4	1.21	31	4,000	28.0	16,000	112.0	4.8	121	0.94	N	
CT30-16	1	1.50	38	4,000	28.0	16,000	112.0	6.0	153	1.34	N	
CT30-20	1 1/4	1.85	47	3,000	21.0	12,000	84.0	8.3	210	1.74	N	
CT30-24	1 1/2	2.10	53	2,500	17.5	10,000	70.0	10.0	254	2.01	N	
CT30-32	2	2.63	67	2,500	17.5	10,000	70.0	12.5	318	2.75	N	

\* Hose can also be used with OEM reuseable couplings.

## CT50

### SAE 100R13 - EN856 - MSHA



**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** 3/4 & 1" 4 spirals, 1 1/4 thru 2" 6 spirals of high tensile steel  
**Cover:** Wrapped, black, oil, abrasion and weather resistant synthetic rubber, MSHA  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm			
CT50-12	3/4	1.26	32.0	5,000	34.5	20,000	137.9	4.8	121	1.07	V	
CT50-16	1	1.52	39.0	5,000	34.5	20,000	137.9	6.0	152	1.40	V	
CT50-20	1 1/4	1.96	50.0	5,000	34.5	20,000	137.9	8.3	210	2.48	--	
CT50-24	1 1/2	2.26	57.0	5,000	34.5	20,000	137.9	10.0	254	3.22	--	
CT50-32	2	2.80	71.0	5,000	34.5	20,000	137.9	25.0	650	5.03	--	

\* Hose can also be used with OEM reuseable couplings.

# Spiral

## CT60

### SAE 100R15 - MSHA



**Tube:** Black; oil resistant synthetic rubber  
**Reinforcement:** ¾ & 1" 4 spirals, 1¼ thru 2" 6 spirals of high tensile steel  
**Cover:** Wrapped, black, oil, water, ozone & flame resistant synthetic rubber  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm			
CT60-12	¾	1.20	30.5	6,000	41.4	24,000	165.5	5.2	133	1.09	V	
CT60-16	1	1.54	38.7	6,000	41.4	24,000	165.5	6.5	165	1.46	V	
CT60-20	1¼	1.97	50.0	6,000	41.4	24,000	165.5	8.7	222	2.68	VS	
CT60-24	1½	2.29	58.1	6,000	41.4	24,000	165.5	10.5	267	3.57	VS	
CT60-32	2	2.80	71.1	6,000	41.4	24,000	165.5	26.0	660	5.04	--	

\* Hose can also be used with OEM reuseable couplings.

## Pressure Wash Hose



**Tube:** Black synthetic rubber  
**Reinforcement:** One/Two braids of high tensile steel wire  
**Cover:** Smooth Black, Blue, Gray (Yellow - Oil Resistant) Abrasion resistant synthetic rubber  
**Packaging:** Coils, reels



Part Number	Cover	Max Temp		Steam Service	Hose ID	Hose OD	Max WP	Min BR		Weight	One Piece Coupling
		°F	°C		in	in	psi	in	mm	lbs/ft	
PW4-06	Black	250	121	No	3/8	0.61	4,000	4.0	0.24	E	E
PW4B-04	Blue	250	121	No	1/4	0.48	4,000	3.0	0.19	E	E
PW4B-06	Blue	250	121	No	3/8	0.61	4,000	4.0	0.24	E	E
PW4G-06	Gray	250	121	No	3/8	0.61	4,000	4.0	0.24	E	E
PW4Y-06	Yellow	250	121	No	3/8	0.61	4,000	4.0	0.24	E	E
PW6-06	Black	250	121	No	3/8	0.67	6,000	6.0	0.39	E	E
PW6B-06	Blue	250	121	No	3/8	0.67	6,000	6.0	0.39	E	E
PW6G-06	Gray	250	121	No	3/8	0.67	6,000	6.0	0.39	E	E

## Pressure Wash Assemblies

Part Number	Cover	Max Temp		Steam Service	Hose ID	Length	Max WP	Fitting A	Fitting B
		°F	°C		in	ft	psi		
PW4-06MMS50	Black	250	121	No	3/8	50'	4,000	NPT-Solid	NPT-Swivel
PW4-06MMS75	Black	250	121	No	3/8	75'	4,000	NPT-Solid	NPT-Swivel
PW4-06MMS100	Black	250	121	No	3/8	100'	4,000	NPT-Solid	NPT-Swivel
PW4B-06MMS50	Blue	250	121	No	3/8	50'	4,000	NPT-Solid	NPT-Swivel
PW4B-06MMS75	Blue	250	121	No	3/8	75'	4,000	NPT-Solid	NPT-Swivel
PW4B-06MMS100	Blue	250	121	No	3/8	100'	4,000	NPT-Solid	NPT-Swivel
PW4Y-06MMS50	Yellow	250	121	No	3/8	50'	4,000	NPT-Solid	NPT-Swivel
PW4Y-06MMS75	Yellow	250	121	No	3/8	75'	4,000	NPT-Solid	NPT-Swivel
PW4Y-06MMS100	Yellow	250	121	No	3/8	100'	4,000	NPT-Solid	NPT-Swivel
PW4G-06MMS50	Gray	250	121	No	3/8	50'	4,000	NPT-Solid	NPT-Swivel
PW4G-06MMS75	Gray	250	121	No	3/8	75'	4,000	NPT-Solid	NPT-Swivel
PW4G-06MMS100	Gray	250	121	No	3/8	100'	4,000	NPT-Solid	NPT-Swivel
PW6-06MMS50	Black	250	121	No	3/8	50'	6,000	NPT-Solid	NPT-Swivel
PW6-06MMS75	Black	250	121	No	3/8	75'	6,000	NPT-Solid	NPT-Swivel
PW6-06MMS100	Black	250	121	No	3/8	100'	6,000	NPT-Solid	NPT-Swivel
PW6B-06MMS50	Blue	250	121	No	3/8	50'	6,000	NPT-Solid	NPT-Swivel
PW6B-06MMS75	Blue	250	121	No	3/8	75'	6,000	NPT-Solid	NPT-Swivel
PW6B-06MMS100	Blue	250	121	No	3/8	100'	6,000	NPT-Solid	NPT-Swivel
PW6G-06MMS50	Gray	250	121	No	3/8	50'	6,000	NPT-Solid	NPT-Swivel
PW6G-06MMS75	Gray	250	121	No	3/8	75'	6,000	NPT-Solid	NPT-Swivel
PW6G-06MMS100	Gray	250	121	No	3/8	100'	6,000	NPT-Solid	NPT-Swivel

\* Includes two bend restricters

## Steam Cleaner Hose - 2 Wire



**Tube:** Black synthetic rubber  
**Reinforcement:** Two braids of high tensile steel wire  
**Cover:** Smooth black oil and abrasion resistant synthetic rubber  
**Packaging:** Reels

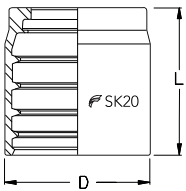
### STEAM SERVICE - UP TO 325°F (163°C)

Part Number	Hose ID		Hose OD		Max WP	Min BR		Weight	Two Piece Ferrule	Two Piece Insert
	in	mm	in	mm	psi	in	mm	lbs/ft		
SK20-06	3/8	14.8	0.58	14.8	350	4.0	101.6	0.28	SK20-06F	SK06
SK20-08	1/2	20.4	0.80	20.4	350	4.5	114.3	0.35	SK20-08F	SK08

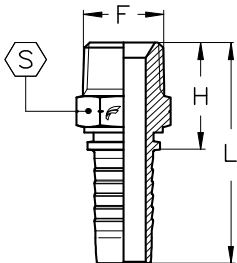
### PRESSURE WASH - UP TO 250°F (121°C)

Part Number	Hose ID		Hose OD		Max WP	Min BR		Weight	Two Piece Ferrule	Two Piece Insert
	in	mm	in	mm	psi	in	mm	lbs/ft		
SK20-06	3/8	14.8	0.58	14.8	6,000	4.0	101.6	0.28	SK20-06F	SK06
SK20-08	1/2	20.4	0.80	20.4	6,000	4.5	114.3	0.35	SK20-08F	SK08

### SK20 No Skive Ferrule



Part Number	Hose ID	D	L
	in	mm	mm
SK20-06F	3/8	25.0	28.0
SK20-08F	1/2	28.0	28.0



### MP NPT Male

Part Number	Hose ID	F	H		L		S	
	in		mm	in	mm	mm	in	
SK06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19	3/4
SK08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22	7/8

**⚠ WARNING!**

•Only rigid male NPT SK series inserts with SK20F ferrules are approved with steam cleaner hose.








## WB Waterblast Hose



**Tube:** Black synthetic rubber  
**Reinforcement:** Four spiral wire  
**Cover:** Smooth black abrasion and weather resistant rubber  
**Packaging:** Coils



Part Number						
	ID	OD		Max WP	Min BR	Weight
	in	in	mm	psi	in	lbs/ft
WBD10-08	1/2	0.97	24.6	10,000	8.0	0.61
WBD10-12	3/4	1.27	32.2	10,000	8.3	0.98
WBD10-16	1	1.53	38.9	10,000	12.6	1.34
WBD15-06	3/8	0.84	21.4	18,000	6.0	0.58
WBD15-08	1/2	1.00	25.4	16,000	8.0	0.76
WBD15-12	3/4	1.26	32.0	14,500	11.0	1.14
WBD20-08	1/2	1.16	29.5	20,000	8.0	0.97

Other lengths and fitting combinations are available.  
 Only available as factory coupled & tested assemblies.



Part Number			Length	Fitting
	ID	Max WP	Length	
	in	psi	feet	
WBD10-08MM25	1/2	10,000	25	Male NPT
WBD10-08MM50	1/2	10,000	50	Male NPT
WBD15-06MM6	3/8	18,000	6	Male NPT
WBD15-06MM10	3/8	18,000	10	Male NPT
WBD15-06MM25	3/8	18,000	25	Male NPT
WBD15-06MM50	3/8	18,000	50	Male NPT
WBD15-06MM100	3/8	18,000	100	Male NPT
WBD15-08MM6	1/2	16,000	6	Male NPT
WBD15-08MM10	1/2	16,000	10	Male NPT
WBD15-08MM25	1/2	16,000	25	Male NPT
WBD15-08MM50	1/2	16,000	50	Male NPT
WBD15-08MM100	1/2	16,000	100	Male NPT
WBD15-12MM25	3/4	14,500	25	Male NPT
WBD15-12MM50	3/4	14,500	50	Male NPT
WBD15-12MM100	3/4	14,500	100	Male NPT
WBD10-16MM25	1	10,000	25	Male NPT
WBD10-16MM50	1	10,000	50	Male NPT
WBD10-16MM100	1	10,000	100	Male NPT
WBD15-08EE50	1/2	16,000	50	F - Metric
WBD20-08EE50	1/2	20,000	50	F - Metric

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## SCH Sewer Cleaning Hose



**Tube:** Yellow olefin

**Reinforcement:** Synthetic fiber

**Cover:** Polyurethane - orange for 2500 psi, blue for 3000 psi, green for 4,000 psi, red for 5,000 psi.

**Temperature:** -40°C to +66°C (-40°F to +150°F)

**Packaging:** Coils

**Application:** Sewer Cleaning hose is constructed from materials selected to provide rugged and reliable service under the most severe and demanding conditions found in high pressure sewer cleaning.

Part Number	Cover	ID		OD		Max WP	Min BP	Min BR	Weight	One Piece Coupling
		in	mm	in	mm	psi	psi	in	lbs/ft	
SCH-2500-16-500	Orange	1	37.0	1.46	37.0	2,500	6,250	6.0	0.40	P
SCH-2500-16-600	Orange	1	37.0	1.46	37.0	2,500	6,250	6.0	0.40	P
SCH-2500-16-800	Orange	1	37.0	1.46	37.0	2,500	6,250	6.0	0.40	P
SCH-3000-16-500	Blue	1	37.0	1.46	37.0	3,000	7,500	8.0	0.41	P
SCH-3000-16-600	Blue	1	37.0	1.46	37.0	3,000	7,500	8.0	0.41	P

Factory Crimped with Male NPT each end - cardboard shipping reels

Part Number	Cover	ID		OD		Max WP	Min BP	Min BR	Weight	One Piece Coupling
		in	mm	in	mm	psi	psi	in	lbs/ft	
SLGR-02	Green	1/8	8.1	0.32	8.1	4,000	10,000	1.3	0.04	P
SLGR-03	Green	3/16	10.4	0.41	10.4	4,000	10,000	1.8	0.05	P
SLGR-04	Green	1/4	12.7	0.50	12.7	4,000	10,000	2.5	0.06	P
SLGR-06	Green	3/8	16.5	0.65	16.5	4,000	10,000	3.0	0.11	P
SLGR-08	Green	1/2	21	0.83	21	4,000	10,000	4.0	0.16	P
SLRD-04	Red	1/4	12.2	0.50	12.2	5,000	12,500	2.5	0.05	P
SLRD-06	Red	3/8	16.5	0.65	16.5	5,000	12,500	3.0	0.13	P

## 720

### SAE 100R7 - 100R18



**Tube:** TPE  
**Reinforcement:** Synthetic Fiber  
**Cover:** Matt black low friction high abrasion and UV resistant polyester, micro-perforated  
**Temperature:** -54°C to +100°C (-65°F to +212°F)  
 Max temperature for water & water based fluids is 70°C (158°F).  
**Packaging:** 300' coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling	Two Piece Coupling	Reuseable
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm				
720-02	1/8	3.18	0.33	8.5	3,000	21.0	12,000	84.0	0.47	12	0.04	T - P	--	7R
720-03	3/16	4.78	0.42	10.7	3,000	21.0	12,000	84.0	0.71	18	0.05	T - P	170 - W	--
720-04	1/4	6.35	0.48	12.2	3,000	21.0	12,000	84.0	0.98	25	0.06	T - P	170 - W	--
720-05	5/16	7.94	0.50	15.0	3,000	21.0	12,000	84.0	1.34	34	0.08	T - P	170 - W	--
720-06	3/8	9.53	0.65	16.6	3,000	21.0	12,000	84.0	1.77	45	0.10	T - P	170 - W	--
720-08	1/2	12.7	0.83	21.1	3,000	21.0	12,000	84.0	2.76	70	0.16	T - P	170 - W	--

## 721

### Low Temp Thermoplastic



**Tube:** Polyester  
**Reinforcement:** Two synthetic fiber braids  
**Cover:** Black marine grade anti-abrasion polyurethane - micro-perforated  
**Temperature:** -54°C to +100°C (-65°F to +212°F)  
 Max temperature for water & water based fluids is 70°C (158°F).  
**Packaging:** 300' coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
721-12	3/4	19.05	1.24	31.4	3,000	21.0	12,000	84.0	5.0	125	0.33	390N

# Thermoplastic

## 711 Non-Conductive SAE 100R7 - ISO 3949 R7

These hoses meet SAE J517 with less than 50 µA leakage under 250000 V/m.



**Tube:** TPE  
**Reinforcement:** Synthetic fiber  
**Cover:** Matt orange low friction high Abrasion and UV resistant polyurethane, non-perforated.  
**Temperature:** -40°C to +100°C (-48°F to +212°F)  
 Max temperature for water & water based fluids is 70°C (158°F).  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		ANSI A92.2 Max WP		SAE 100R7 Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling	Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	psi	MPa	in	mm				
711-04	¼	0.48	12.1	3,250	22.4	3,000	21.0	12,000	84.0	1.0	25	0.06	T - P	170 - W	
711-06	⅜	0.63	16.0	3,000	21.0	2,250	15.5	9,000	62.0	1.8	45	0.10	T - P	170 - W	
711-08	½	0.81	20.6	3,000	21.0	2,250	15.5	9,000	62.0	2.6	65	0.14	T - P	170 - W	

## 711T Non-Conductive SAE 100R7 - ISO 3949 R7

These hoses meet SAE J517 with less than 50 µA leakage under 250000 V/m.



**Tube:** TPE  
**Reinforcement:** Synthetic fiber  
**Cover:** Matt orange low friction high Abrasion and UV resistant polyurethane, non-perforated.  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
 Max temperature for water & water based fluids is 70°C (158°F).  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		ANSI A92.2 Max WP		SAE 100R7 Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling	Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	psi	MPa	in	mm				
711T-04	¼	0.48	12.1	3,250	22.4	3,000	21.0	12,000	84.0	1.0	25	0.06	T - P	170 - W	
711T-06	⅜	0.63	16.0	3,000	21.0	2,250	15.5	9,000	62.0	1.8	45	0.10	T - P	170 - W	
711T-08	½	0.81	20.6	3,000	21.0	2,250	15.5	9,000	62.0	2.6	65	0.14	T - P	170 - W	

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## 22NC Rubber Non Conductive

Meets max leakage of 100 microamps/ft. at 75 KV for 3 minutes.



**Tube:** Polychloroprene  
**Reinforcement:** Two textile braids  
**Cover:** Orange nitrile  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
22NC-04	1/4	6.35	0.56	14.2	2,750	19.0	11,000	76.0	3.5	89	0.11	AF
22NC-06	3/8	9.52	0.75	19.0	2,250	15.5	9,000	62.0	4.0	102	0.19	AF

# 1

# Thermoplastic Hose

## 725

### Thermoplastic Paint Hose - One Wire



**Tube:** Polyamide  
**Reinforcement:** High tensile 1 wire braid  
**Cover:** Blue polyurethane  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
 Max temperature for water & water based fluids is +175°C (158°F)  
**Packaging:** 300' coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Ferrule	Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm			
725-03	3/16	4.75	0.40	10.2	5,700	39.3	20,000	137.9	1.2	30	0.09	T	170 - W
725-04	1/4	6.35	0.48	12.1	5,000	35.0	17,400	120.0	1.6	40	0.11	T	170 - W
725-06	3/8	9.52	0.64	16.2	4,000	28.0	13,000	89.6	2.4	60	0.17	T	170 - W
725-08	1/2	12.7	0.76	19.2	3,000	21.0	11,000	75.8	3.2	80	0.21	T	170 - W
725-12	3/4	19.05	1.00	25.5	2,500	17.5	7,540	52.0	6.0	152	0.28	T	170 - W

# Thermoplastic

## MTKM

### High Pressure Thermoplastic



**Tube:** Polyester  
**Reinforcement:** Synthetic fiber and one steel braid  
**Cover:** Black polyurethane  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	Two Piece Ferrule
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
MTKM57000	3/8	19.0	0.74	19.0	10,150	70.0	40,600	280.0	3.6	91	0.26	BP38MTKM

## BA30

### Breathing Air Hose



**Tube:** FDA/ED Thermoplastic polymer  
**Reinforcement:** Aramid fiber  
**Cover:** Gray abrasion resistant perforated urethane  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels  
**Application:** Air compressor stations and scuba refilling stations.

Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
BA30-04GY	1/4	12.7	0.50	12.7	6,000	42.0	24,000	168.0	2.0	51	0.07	T - P

**Caution:** Not for use as part of SCUBA systems or for use with pure oxygen and hydrogen transfer  
 Other sizes available with MOQ

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## HN Compact 100R4 Suction / Return Hose



### SAE 100R4

**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** Textile braided with helical wire to prevent collapsing  
**Cover:** Black synthetic oil and heat resistant rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** 100' coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	E		N		
HN-12	¾	1.15	29.1	300	2.1	1,200	8.3	1.60	41.0	0.40	E	N	110 - W	
HN-16	1	1.39	35.4	250	1.7	1,000	6.9	1.80	46.0	0.50	E	N	110 - W	
HN-20	1¼	1.65	41.8	200	1.4	800	5.5	2.40	61.0	0.60	E	N	110 - W	
HN-24	1½	1.93	49.1	150	1.0	600	4.1	2.60	66.0	0.75	E	N	110 - W	
HN-32	2	2.43	61.8	150	1.0	450	3.1	6.30	160.0	0.90	E	N	110 - W	
HN-40	2½	2.97	75.5	150	1.0	450	3.1	9.80	249.0	1.20	--	--	H	
HN-48	3	3.47	88.2	150	1.0	450	3.1	11.80	300.0	1.60	--	--	H	
HN-56	3½	4.02	102.1	150	1.0	450	3.1	14.00	356.0	1.90	--	--	H	

## HXP Standard 100R4 Suction / Return Hose



### SAE 100R4

**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** Textile braided with helical wire to prevent collapsing  
**Cover:** Black synthetic oil and heat resistant rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** 100' coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling		Two Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	E		N		
HXP-12	¾	1.16	29.5	300	2.1	1,200	8.3	4.9	125.0	0.41	E	N	210 - W	
HXP-16	1	1.45	36.8	250	1.7	1,000	6.9	5.9	150.0	0.67	E	N	210 - W	
HXP-20	1¼	1.70	43.2	200	1.4	800	5.5	7.8	200.0	0.83	E	N	210 - W	
HXP-24	1½	1.95	49.5	150	1.0	600	4.1	10.0	255.0	1.15	E	N	210 - W	
HXP-32	2	2.46	62.5	100	0.7	400	2.8	11.8	300.0	1.18	E	N	210 - W	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# Miscellaneous

## PL10

### Push Lock 300 PSI



**Tube:** Black nitrile, ARPM Class A (high oil resistance)  
**Reinforcement:** Synthetic Fiber  
**Cover:** MSHA Synthetic rubber, ARPM Class B (medium oil resistance)  
**Temperature:** -40°C to +88°C (-40°F to + 190°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft		
PL10-04BK*	¼	0.54	13.7	300	2.1	1,200	8.4	3.0	64	0.09	PL - AF	
PL10-05BK*	⅝	0.62	15.7	300	2.1	1,200	8.4	3.0	76	0.12	PL - AF	
PL10-06BK*	¾	0.69	17.5	300	2.1	1,200	8.4	3.0	76	0.14	PL - AF	
PL10-08BK*	½	0.81	20.6	300	2.1	1,200	8.4	5.0	127	0.17	PL - AF	
PL10-10BK*	⅝	0.93	23.6	300	2.1	1,200	8.4	6.0	152	0.20	PL - AF	
PL10-12BK*	¾	1.07	27.2	300	2.1	1,200	8.4	7.0	178	0.26	PL - AF	
PL10-16BK*	1	1.34	34.0	300	2.1	1,200	8.4	8.0	203	0.34	PL - AF	

Stock: Black - BK, Blue - BL, Red - RD  
 MOQ/Full Reels: Gray - GY, Green - GN

## FN Hi-Temp

### SAE 100R5 - DOT FMVSS106

SAE J1402 - ⅜", ¼", ⅝", 13/32", ½" & ⅝"



**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** One braid of synthetic yarn and one braid of steel wire  
**Cover:** Blue, impregnated textile braid, oil and mildew resistant  
**Temperature:** -40°C to +149°C (-40°F to +300°F) - petroleum based fluids  
 -40°C to +95°C (-40°F to +203°F) - air, water  
**Packaging:** ⅜" - 1" reels, 1 1/8" and higher in coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	Reusable
	in	in	mm	psi	MPa	psi	MPa	in	mm	lbs/ft			
FN-04	⅜	0.52	13.2	3,000	21.0	12,000	84.0	3.0	76	0.15	F	5R	
FN-05	¼	0.58	14.8	3,000	21.0	12,000	84.0	3.4	86	0.18	F	5R	
FN-06	⅝	0.68	17.1	2,250	15.5	9,000	62.0	4.0	102	0.22	F	5R	
FN-08	13/32	0.77	19.5	2,000	14.0	8,000	56.0	4.5	117	0.30	F	5R	
FN-10	½	0.92	23.4	1,750	12.2	7,000	48.8	5.5	140	0.37	F	5R	
FN-12	⅝	1.08	27.4	1,500	10.5	6,000	42.0	6.5	165	0.45	F	5R	
FN-16	7/8	1.24	31.4	800	5.5	3,200	22.0	7.4	187	0.47	F	5R	
FN-20	1 1/8	1.50	38.1	625	4.3	2,500	17.2	9.0	229	0.58	F	5R	
FN-24	1 3/8	1.75	44.4	500	3.5	2,000	14.0	10.5	267	0.73	F	5R	
FN-32	1 13/16	2.22	56.4	350	2.4	1,400	9.6	13.3	337	0.90	F	5R	

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## AB10

### DOT Air Brake Hose SAE J1402 - DOT FMVSS 106



**Tube:** Black Nitrile  
**Reinforcement:** Synthetic Fiber  
**Cover:** Black, oil, abrasion and weather resistant synthetic rubber  
**Temperature:** -29°C to +88°C (-20°F to +190°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
AB10-06	3/8	19.05	0.75	19.05	225	1.6	900	6.4	2.25	57.15	0.17	D1400
AB10-08	1/2	22.23	0.88	22.23	225	1.6	900	6.4	3.00	76.20	0.20	D1400

1  
Miscellaneous Hose

## ZN Air Conditioning (Standard Barrier) SAE J2064 Type C Class II



**Tube:** Chloroprene  
**Reinforcement:** Two-spiral polyester  
**Barrier:** Nylon  
**Cover:** Black Chlorobutyl  
**Temperature:** -30°C to +125°C (-22°F to +257°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm		
ZN-06	5/16	19.1	0.75	19.1	500	3.4	2,000	13.8	0.6	16	0.20	Z
ZN-08	13/32	23.0	0.91	23.0	500	3.4	2,000	13.8	1.0	25	0.28	Z
ZN-10	1/2	25.4	1.00	25.4	500	3.4	2,000	13.8	1.3	32	0.33	Z
ZN-12	5/8	28.6	1.13	28.6	350	2.4	1,750	12.1	2.0	50	0.38	Z

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## HJ150 Hydraulic Jack IJ100 - MSHA



**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** Two braids of high tensile steel wire  
**Cover:** Smooth, black, oil, abrasion and weather resistant synthetic rubber  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels

Due to high pressure application, we only recommend solid NPT ends (MP).



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm			
HJ150-04	¼	0.53	13.4	10,000	69.0	20,000	138.0	4.0	100	0.23	E	
HJ150-06	¾	0.67	17.1	10,000	69.0	20,000	138.0	5.0	130	0.33	E	

## FS100 Fire Suppression SAE 100R1AT - EN853 1SN - MSHA



**Tube:** Seamless, black, oil and heat resistant synthetic rubber  
**Reinforcement:** One wire braid of high tensile steel wire  
**Cover:** Red, oil abrasion and weather resistant synthetic rubber, MSHA approved  
**Temperature:** -40°C to +100°C (-40°F to +212°F)  
**Packaging:** Reels



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight lbs/ft	One Piece Coupling
	in	in	mm	psi	MPa	psi	MPa	in	mm			
FS100-04	¼	0.50	12.8	3,265	22.5	13,060	99.0	4.0	100	0.14	E	
FS100-08	½	0.78	19.9	2,320	16.0	9,280	64.0	7.0	180	0.27	E	
FS100-12	¾	1.07	27.1	1,525	10.5	6,100	42.0	9.5	240	0.38	E	
FS100-16	1	1.38	35.1	1,275	8.8	5,100	35.2	12.0	300	0.60	E	

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## TBR Stainless Teflon - Smooth Bore SAE 100R14



**Tube:** Smooth bore PTFE (.030 wall)  
**Cover:** One braid of 304 stainless steel wire  
**Temperature:** -60°C to +232°C (-76°F to +450°F) continuous  
**Packaging:** Random coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	Two Piece Ferrule
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm			
TBR-03	3/16	7.6	0.30	7.6	2,750	18.9	11,000	75.9	2.0	50	0.07	T	180-W
TBR-04	1/4	8.8	0.35	8.8	2,610	18.0	10,440	72.0	3.0	75	0.10	T	180-W
TBR-05	5/16	11.0	0.43	11.0	2,540	14.1	10,160	70.1	4.0	100	0.11	T	180-W
TBR-06	3/8	12.1	0.48	12.1	2,390	16.5	9,560	65.9	5.0	125	0.12	T	180-W
TBR-08	1/2	16.2	0.64	16.2	1,740	12.0	6,960	48.0	6.6	165	0.15	T	180-W
TBR-10	5/8	18.8	0.74	18.8	1,270	8.8	5,080	35.0	8.0	200	0.17	T	180-W
TBR-12	3/4	23.1	0.91	23.1	1,010	7.0	4,040	27.9	9.2	230	0.20	T	180-W
TBR-16	1	29.2	1.15	29.2	870	6.0	3,480	24.0	12	300	0.30	T	180-W

Note: TBR-03 thru -08 sizes are rated for full vacuum.

## TBX Stainless Teflon - Smooth/Convuluted



**Tube:** 3/8" - 1" smooth black static conductive PTFE  
 1 1/4" smooth white PTFE (not static conductive)  
**Cover:** One braid of 304 stainless steel wire  
**Temperature:** -60°C to +232°C (-65°F to +450°F) continuous  
**Packaging:** Random coils



Part Number	Hose ID		Hose OD		Max WP		Min BP		Min BR		Weight	One Piece Coupling	Two Piece Coupling
	in	mm	in	mm	psi	MPa	psi	MPa	in	mm			
TBX-06C	3/8	13.5	0.53	13.5	1160	8.0	4,640	32.0	1.0	25	0.10	T	
TBX-08C	1/2	17.5	0.69	17.5	870	6.0	3,480	24.0	1.5	38	0.15	T	
TBX-12C	3/4	24.2	0.95	24.2	870	6.0	3,480	24.0	2.5	63	0.26	T	
TBX-16C	1	31.7	1.25	31.7	725	5.0	2,900	20.0	3.0	75	0.36	T	
TBX-20	1 1/4	39.3	1.54	39.3	653	4.5	2,610	17.9	3.9	100	0.58	--	180 - W

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## Crimp Fitting Nomenclature

### E08-12FJ90L-SS

**Coupling Series**

E = Braided, N = 4 Spiral, V/VS = 6 Spiral  
 W = Braided / Four Spiral, T = Thermoplastic

**Hose ID**

03 | 04 | 05 | 06 | 08 | 10 | 12 | 16 | 20 | 24 | 32

**Thread Size**

02 - 1/8"    12 - 3/4"  
 03 - 3/16"    16 - 1"  
 04 - 1/4"    20 - 1 1/4"  
 06 - 3/8"    24 - 1 1/2"  
 08 - 1/2"    32 - 2"

**Thread Gender**

F = Female  
 M = Male

**Thread Type**

J = JIC  
 A = SAE  
 N = NPT  
 F = ORFS  
 ML = Metric Light  
 MS = Metric Heavy  
 BSPP = BSP Parallel  
 BSPT = BSP Tapered  
 FL = Code 61  
 FLH = Code 62  
 FLC = CAT

**Drop**

S = Short  
 M = Medium  
 L = Long  
 125 = 125 mm

**Material**

SS-316 Stainless

**Shape**

45 = 45 Degree  
 90 = 90 Degree

**Fitting Series    Fitting Type**

AF	One Piece - Industrial Hose
E	One Piece - Braided Hose
F	One Piece - R5 Hose
N	One Piece - Four Spiral Hose
P	One Piece - Thermoplastic Hose
T	One Piece - Teflon / Thermoplastic Hose
V-VS	One Piece - Six Spiral Hose
X	One Piece - R15 Hose
Z	One Piece - Air Conditioning Hose
W	Two Piece - Braided / Four Spiral
1R	Reuseable - 1SN
2R	Reuseable - 2SN
5R	Reuseable - R5
7R	Reuseable - R7
PL	Push Lok
H	Reuseable - Suction Hose

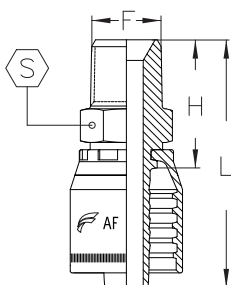
STYLE	SERIES	DESCRIPTION
NPTF	MP	NPT Male
	MPA	NPT Male API
	MPL	NPT Male Long
	MPX	NPT Male Swivel
	MPX90B	NPT Male Swivel - 90° Block Elbow
	FP	NPT Female Rigid
	FPX	NPSM 60° Female Swivel
JIC	MJ	JIC 37° Male
	FJ	JIC 37° Female Swivel
	FJ45	JIC 37° Female Swivel - 45° Elbow
	FJ90B	JIC 37° Female Swivel - 90° Block Elbow
	FJ90S	JIC 37° Female Swivel - 90° Elbow Short Drop
	FJ90M	JIC 37° Female Swivel - 90° Elbow Medium Drop
	FJ90L	JIC 37° Female Swivel - 90° Elbow Long Drop
ORFS	MF	ORFS Male
	MFK	ORFS Male Bulkhead
	FF	ORFS Female Swivel
	FF45	ORFS Female Swivel - 45° Elbow
	FF90S	ORFS Female Swivel - 90° Elbow Short Drop
	FF90L	ORFS Female Swivel - 90° Elbow Long Drop
SAE	MA	SAE 45° Male
	FA	SAE 45° Female Swivel
	FA45	SAE 45° Female Swivel - 45° Elbow
	FA90	SAE 45° Female Swivel - 90° Elbow
	MOB	O-Ring Boss Male
	MOBX	O-Ring Boss Male Swivel
	MOBX90B	O-Ring Boss Male Swivel - 90° Block Elbow
	MIX	SAE Inverted Flare Male Swivel
	MIX45	SAE Inverted Flare Male Swivel - 45° Elbow
	MIX90	SAE Inverted Flare Male Swivel - 90° Elbow
	FIX	SAE Inverted Flare Female Rigid
	MRNS	SAE Flareless Male Assembly
	HM	HoseMender
SP	Imperial Standpipe	
Oil & Gas	FHU1502	Female Hamer Union 1502
	MHU1502	Male Hamer Union 1502
Grease	FG	Female Grease



STYLE	SERIES	DESCRIPTION
JIS	FJIS	JIS Female Swivel (Toyota)
	FJIS90	JIS Female Swivel (Toyota) - 90° Elbow
	FK	Komatsu Female Swivel
	FK45	Komatsu Female Swivel - 45° Elbow
	FK90	Komatsu Female Swivel - 90° Elbow
	FLK	Komatsu Flange
	FLK45	Komatsu Flange - 45° Elbow
	FLK90	Komatsu Flange - 90° Elbow
	MKBC	Kobelco Male
BSP	MBSPT	BSPT Male
	MBSPP	BSPP Male
	FBSPP	BSPP Female Swivel
	FBSPP45	BSPP Female Swivel - 45° Elbow
	FBSPP90	BPSPP Female Swivel - 90° Elbow
	FBSPP90B	BSPP Female Swivel - 90° Block Elbow
	FBSPPFF	BSP Female Swivel Flat Face
	MBSPPFF	BSP Male Flat Face
	BJBSP	BSP Banjo
	BJBSPBT	BSP Banjo Bolt
Metric	SPML	METRIC Standpipe Light
	SPML45	METRIC Standpipe Light - 45° Elbow
	SPML90	METRIC Standpipe Light - 90° Elbow
	BJM	METRIC Banjo
	BJMBT	METRIC Banjo Bolt
	MML	METRIC 24° Male Light - (CEL)
	FML	METRIC 24° Female Light - (DKOL)
	FML45	METRIC 24° Female Light - 45° Elbow (DKOL)
	FML90	METRIC 24° Female Light - 90° Elbow (DKOL)
	MMS	METRIC 24° Male Heavy - (CES)
	FMS	METRIC 24° Female Heavy - (DKOS)
	FMS45	METRIC 24° Female Heavy - 45° Elbow (DKOS)
	FMS90	METRIC 24° Female Heavy - 90° Elbow (DKOS)
	MGAZ	French Metric Male GAZ
	FGAZ	French Metric Female GAZ
CODE 61 Flange	FL	Code 61 Flange
	FL22	Code 61 Flange - 22° Elbow
	FL30	Code 61 Flange - 30° Elbow
	FL45	Code 61 Flange - 45° Elbow
	FL60	Code 61 Flange - 60° Elbow
	FL67	Code 61 Flange - 67° Elbow
	FL90	Code 61 Flange - 90° Elbow
	FL100	Code 61 Flange - 100° Elbow
	FL110	Code 61 Flange - 110° Elbow
	FL135	Code 61 Flange - 135° Elbow
	LET	Code 61 Captive Flange - 5,000 psi
	LET45	Code 61 Captive Flange - 45° Elbow - 5,000 psi
	LET90	Code 61 Captve Flange - 90° Elbow - 5,000 psi

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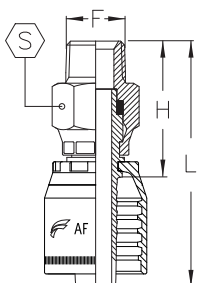
STYLE	SERIES	DESCRIPTION
CODE 62 Flange	FLH	Code 62 Flange
	FLH22	Code 62 Flange - 22° Elbow
	FLH30	Code 62 Flange - 30° Elbow
	FLH45	Code 62 Flange - 45° Elbow
	FLH60	Code 62 Flange - 60° Elbow
	FLH67	Code 62 Flange - 67° Elbow
	FLH90	Code 62 Flange - 90° Elbow
CAT® Flange	FLC	CAT Flange
	FLC22	CAT Flange - 22° Elbow
	FLC30	CAT Flange - 30° Elbow
	FLC45	CAT Flange - 45° Elbow
	FLC60	CAT Flange - 60° Elbow
	FLC67	CAT Flange - 67° Elbow
	FLC90	CAT Flange - 90° Elbow
O&K Flange	FLOKA	O&K Flange
	FLOKA22	O&K Flange- 22° Elbow
	FLOKA45	O&K Flange - 45° Elbow
	FLOKA90	O&K Flange- 90° Elbow
	OKBR	FLOKA Crimp Strain Relief
AIR CONDITIONING	BTF	Bumped Tube O-Ring Female Swivel
	BTF-P	Bumped Tube O-Ring Female Swivel (R134a Service Port)
	BTF45	Bumped Tube O-Ring Female Swivel - 45° Elbow
	BTF45-P	Bumped Tube O-Ring Female Swivel - 45° Elbow (R134a Service Port)
	BTF90	Bumped Tube O-Ring Female Swivel - 90° Elbow
	BTF90-P	Bumped Tube O-Ring Female Swivel - 90° Elbow (R134a Service Port)
	BTM	Bumped Tube O-Ring Male Swivel
	BTM45	Bumped Tube O-Ring Male Swivel - 45° Elbow
	BTM90	Bumped Tube O-Ring Male Swivel - 90° Elbow
	BTM90-P	Bumped Tube O-Ring Male Swivel - 90° Elbow (R134a Service Port)
	IOM	Insert O-Ring Male
	IOM90	Insert O-Ring Male - 90° Elbow
	HM-P	Hose Mender (R134a Service Port)
	BS	Braze Socket
	ACF	Air Conditioning Ferrule
	ACO	Air Conditioning O-Ring
Pressure Wash	MPWK	Pressure Wash Gun End - K
	FPWK	Metric Pressure Wash Swivel - K



## MP NPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-02MP	1/4	1/8 - 27	21.1	0.83	49.1	1.93	12	1/2
AF04-04MP	1/4	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
AF04-06MP	1/4	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
AF04-08MP	1/4	1/2 - 14	34.0	1.34	62.0	2.44	22	7/8
AF06-04MP	3/8	1/4 - 18	27.5	1.08	58.0	2.28	16	5/8
AF06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19	3/4
AF06-08MP	3/8	1/2 - 14	34.0	1.34	64.5	2.54	22	7/8
AF08-04MP	1/2	1/4 - 18	30.5	1.20	63.2	2.49	22	7/8
AF08-06MP	1/2	3/8 - 18	30.6	1.20	63.6	2.50	22	7/8
AF08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22	7/8
AF08-12MP	1/2	3/4 - 14	36.9	1.45	69.9	2.75	27	1 1/16
AF12-08MP	3/4	1/2 - 14	37.5	1.48	78.0	3.07	27	1 1/16
AF12-12MP	3/4	3/4 - 14	37.9	1.49	78.4	3.09	27	1 1/16
AF12-16MP	3/4	1 - 11 1/2	45.5	1.79	86.0	3.38	35	1 7/16
AF16-12MP	1	3/4 - 14	40.4	1.59	91.4	3.60	32	1 1/4
AF16-16MP	1	1 - 11 1/2	47.0	1.85	98.0	3.86	35	1 7/16
AF16-20MP	1	1 1/4 - 11 1/2	51.1	2.01	102.1	4.02	46	1 3/4

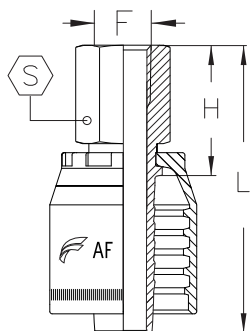
## MPX NPT Male Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-04MPX	1/4	1/4 - 18	41	1.61	69	2.72	17	1 1/16
AF04-06MPX	1/4	3/8 - 18	46	1.81	74	2.91	22	7/8
AF06-04MPX	3/8	1/4 - 18	41	1.61	72	2.83	17	1 1/16
AF06-06MPX	3/8	3/8 - 18	45	1.77	75	2.95	22	7/8
AF06-08MPX	3/8	1/2 - 14	57	2.24	88	3.46	27	1 1/16
AF08-06MPX	1/2	3/8 - 18	46	1.81	79	3.11	22	7/8
AF08-08MPX	1/2	1/2 - 14	56	2.20	89	3.50	27	1 1/16
AF12-12MPX	3/4	3/4 - 14	61	2.40	101	3.98	34	1 3/8
AF16-16MPX	1	1 - 11 1/2	65	2.56	116	4.57	38	1 1/2

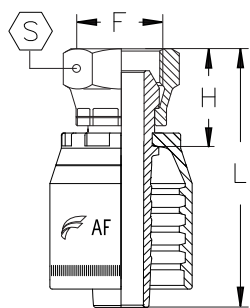


## FP NPT Female Rigid



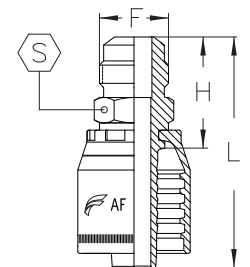
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-02FP	1/4	1/8 - 27	21.5	0.85	49.5	1.95	16	5/8
AF04-04FP	1/4	1/4 - 18	27.1	1.07	55.1	2.17	19	3/4
AF04-06FP	1/4	3/8 - 18	28.4	1.12	56.4	2.22	22	7/8
AF06-04FP	3/8	1/4 - 18	27.1	1.07	57.6	2.27	19	3/4
AF06-06FP	3/8	3/8 - 18	28.4	1.12	58.9	2.32	22	7/8
AF06-08FP	3/8	1/2 - 14	34.5	1.36	65.0	2.56	29	1 3/16
AF08-08FP	1/2	1/2 - 14	35.5	1.40	68.5	2.70	29	1 3/16
AF12-12FP	3/4	3/4 - 14	38.0	1.50	78.5	3.09	32	1 1/4
AF16-16FP	1	1 - 11 1/2	45.8	1.80	96.8	3.81	36	1 1/2

## FPX NPSM Female Swivel (60° Cone Seat)



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-04FPX	1/4	1/4 - 18	19	0.75	47	1.85	17	1 1/16
AF06-06FPX	3/8	3/8 - 18	21	0.83	51	2.00	22	7/8
AF08-08FPX	1/2	1/2 - 14	23	0.90	56	2.20	25	1
AF12-12FPX	3/4	3/4 - 14	27	1.06	67	2.64	32	1 1/4
AF16-16FPX	1	1 - 11 1/2	30	1.18	81	3.19	38	1 1/2

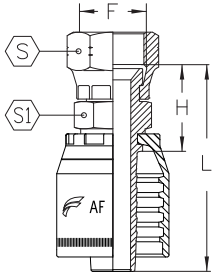
## MJ JIC 37° Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-04MJ	1/4	7/16 - 20	25.5	1.00	53.5	2.11	12	1/2
AF04-05MJ	1/4	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
AF04-06MJ	1/4	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
AF06-06MJ	3/8	9/16 - 18	26.6	1.05	57.1	2.25	15	5/8
AF06-08MJ	3/8	3/4 - 16	29.7	1.17	60.2	2.37	19	3/4
AF08-08MJ	1/2	3/4 - 16	30.7	1.21	63.7	2.51	19	3/4
AF08-10MJ	1/2	7/8 - 14	35.3	1.39	68.3	2.69	24	1
AF12-12MJ	3/4	1 1/16 - 12	39.9	1.57	80.4	3.16	27	1 1/16
AF16-16MJ	1	1 5/16 - 12	43.6	1.72	94.6	3.72	34	1 3/8

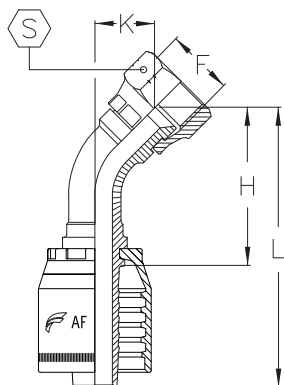
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## FJ JIC 37° Female Swivel



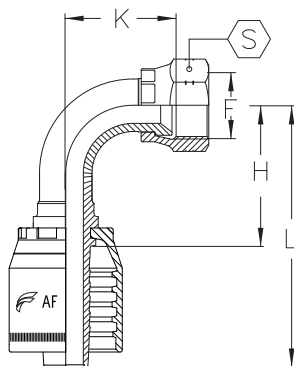
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJ	1/4	7/16 - 20	20.5	0.81	48.5	1.91	14	9/16	14	9/16
AF04-05FJ	1/4	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
AF04-06FJ	1/4	9/16 - 18	22.0	0.87	50.0	1.97	19	3/4	14	9/16
AF06-06FJ	3/8	9/16 - 18	22.5	0.88	53.0	2.09	19	3/4	16	5/8
AF06-08FJ	3/8	3/4 - 16	24.5	0.96	55.0	2.16	22	7/8	19	3/4
AF08-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
AF08-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	11/16	22	7/8
AF08-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
AF12-12FJ	3/4	1 1/16 - 12	31.8	1.25	72.3	2.85	32	1 1/4	27	1 1/16
AF12-16FJ	3/4	1 5/16 - 12	35.5	1.40	76.0	2.99	38	1 1/2	32	1 1/4
AF16-12FJ	1	1 1/16 - 12	34.3	1.35	85.3	3.36	32	1 1/4	32	1 1/4
AF16-16FJ	1	1 5/16 - 12	37.0	1.46	88.0	3.46	38	1 1/2	32	1 1/4



## FJ45 JIC 37° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJ45	1/4	7/16 - 20	31.0	1.22	59.0	2.32	10.0	0.39	14	9/16
AF04-05FJ45	1/4	1/2 - 20	32.0	1.26	60.0	2.36	11.0	0.43	17	11/16
AF04-06FJ45	1/4	9/16 - 18	33.0	1.30	61.0	2.40	12.0	0.47	19	3/4
AF06-06FJ45	3/8	9/16 - 18	35.5	1.40	66.0	2.60	12.0	0.47	19	3/4
AF06-08FJ45	3/8	3/4 - 16	37.5	1.48	68.0	2.68	14.0	0.55	22	7/8
AF08-08FJ45	1/2	3/4 - 16	41.0	1.61	74.0	2.91	14.5	0.57	22	7/8
AF08-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.63	27	1 1/16
AF12-12FJ45	3/4	1 1/16 - 12	57.0	2.24	97.0	3.82	20.0	0.79	32	1 1/4
AF16-16FJ45	1	1 5/16 - 12	72.0	2.83	123.0	4.84	24.0	0.94	38	1 1/2

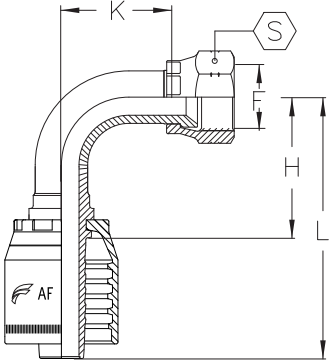
## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJ90S	1/4	7/16 - 20	25.5	1.00	53.5	2.11	20	0.79	14	9/16
AF04-05FJ90S	1/4	1/2 - 20	25.5	1.00	53.5	2.11	21	0.83	17	11/16
AF04-06FJ90S	1/4	9/16 - 18	25.5	1.00	53.5	2.11	23	0.90	19	3/4
AF06-06FJ90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	23	0.90	19	3/4
AF06-08FJ90S	3/8	3/4 - 16	31.0	1.22	61.5	2.42	29	1.14	22	7/8
AF08-08FJ90S	1/2	3/4 - 16	37.0	1.46	70.0	2.75	29	1.14	22	7/8
AF08-10FJ90S	1/2	7/8 - 14	38.0	1.50	71.0	2.79	33	1.30	27	1 1/16
AF12-12FJ90S	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	43	1.69	32	1 1/4
AF16-16FJ90S	1	1 5/16 - 12	71.0	2.79	122.0	4.80	56	2.20	38	1 1/2

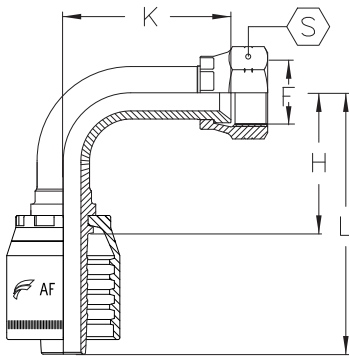
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## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



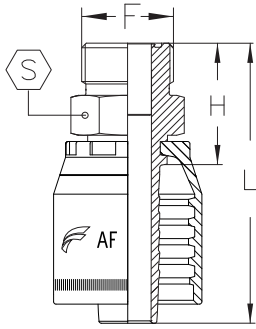
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJ90M	1/4	7/16 - 20	25.5	1.00	53.5	2.11	26.0	1.02	14	9/16
AF04-05FJ90M	1/4	1/2 - 20	25.5	1.00	53.5	2.11	26.0	1.02	17	11/16
AF04-06FJ90M	1/4	9/16 - 18	25.5	1.00	53.5	2.11	27.0	1.06	19	3/4
AF06-06FJ90M	3/8	9/16 - 18	31.0	1.22	61.5	2.42	33.0	1.30	19	3/4
AF06-08FJ90M	3/8	3/4 - 16	31.0	1.22	61.5	2.42	33.0	1.30	22	7/8
AF08-08FJ90M	1/2	3/4 - 16	37.0	1.46	70.0	2.75	39.0	1.53	22	7/8
AF08-10FJ90M	1/2	7/8 - 14	37.0	1.46	70.0	2.75	40.0	1.57	27	1 1/16
AF12-12FJ90M	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	53.0	2.09	32	1 1/4
AF16-16FJ90M	1	1 5/16 - 12	71.0	2.79	122.0	4.80	70.0	2.75	38	1 1/2



## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop



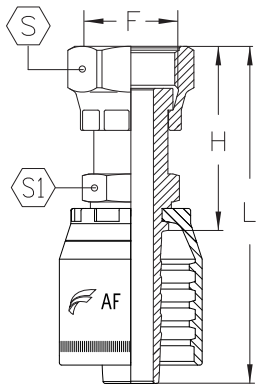
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJ90L	1/4	7/16 - 20	25.5	1.00	53.5	2.11	46.0	1.81	14	9/16
AF04-05FJ90L	1/4	1/2 - 20	25.5	1.00	53.5	2.11	46.0	1.81	17	11/16
AF04-06FJ90L	1/4	9/16 - 18	25.5	1.00	53.5	2.11	54.0	2.12	19	3/4
AF06-06FJ90L	3/8	9/16 - 18	31.0	1.22	61.5	2.42	54.0	2.12	19	3/4
AF06-08FJ90L	3/8	3/4 - 16	31.0	1.22	61.5	2.42	64.0	2.52	22	7/8
AF08-08FJ90L	1/2	3/4 - 16	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
AF12-12FJ90L	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	96.0	3.78	32	1 1/4
AF16-16FJ90L	1	1 5/16 - 12	71.0	2.79	122.0	4.80	114.0	4.49	38	1 1/2



## MF ORFS Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-04MF	1/4	9/16 - 18	23.5	0.92	51.5	2.02	17	11/16
AF04-06MF	1/4	11/16 - 16	25.5	1.00	53.5	2.10	19	3/4
AF06-06MF	3/8	11/16 - 16	25.5	1.00	56.0	2.20	19	3/4
AF06-08MF	3/8	13/16 - 16	28.5	1.12	59.0	2.32	22	7/8
AF08-08MF	1/2	13/16 - 16	29.5	1.16	62.5	2.46	22	7/8
AF08-10MF	1/2	1 - 14	34.0	1.33	67.0	2.63	27	1 1/16
AF12-12MF	3/4	1 7/16 - 12	38.0	1.49	78.5	3.09	32	1 1/4
AF16-16MF	1	1 7/16 - 12	44.0	1.73	95.0	3.74	41	1 5/8

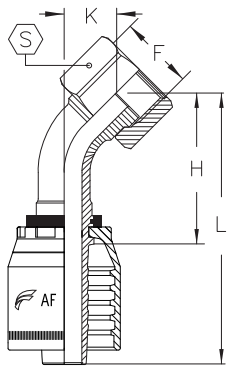
## FF ORFS Female Swivel





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FF	1/4	9/16 - 18	26.5	1.04	54.5	2.14	17	11/16	14	9/16
AF04-06FF	1/4	11/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
AF06-06FF	3/8	11/16 - 16	28.5	1.12	59.0	2.32	22	7/8	16	5/8
AF06-08FF	3/8	13/16 - 16	32.5	1.27	63.0	2.48	24	1	19	3/4
AF08-08FF	1/2	13/16 - 16	33.5	1.31	66.5	2.61	24	1	19	3/4
AF08-10FF	1/2	1 - 14	39.5	1.55	72.5	2.85	30	1 7/16	24	1
AF12-12FF	3/4	1 7/16 - 12	44.5	1.75	85.0	3.34	36	1 7/16	27	1 1/16
AF16-16FF	1	1 7/16 - 12	49.0	1.92	100.0	3.93	41	1 5/8	36	1 1/16

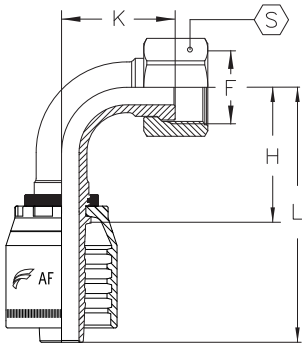
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## FF45 ORFS Female Swivel - 45° Elbow



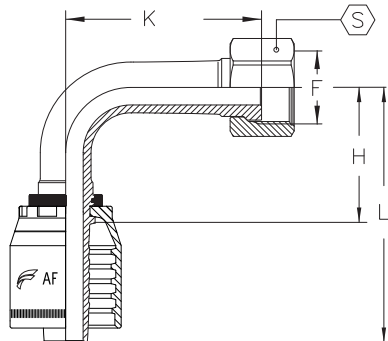
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FF45	1/4	9/16 - 18	32.5	1.27	60.5	2.38	10.5	0.41	17	11/16
AF04-06FF45	1/4	11/16 - 16	34.5	1.35	62.5	2.46	12.5	0.49	22	7/8
AF06-08FF45	3/8	13/16 - 16	38.5	1.51	69.0	2.71	15.0	0.59	24	1
AF08-08FF45	1/2	13/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
AF08-10FF45	1/2	1 - 14	45.0	1.77	78.0	3.07	17.5	0.68	30	17/16
AF12-12FF45	3/4	17/16 - 12	58.0	2.28	99.0	3.89	21.0	0.82	36	17/16
AF16-16FF45	1	17/16 - 12	73.0	2.87	124.0	4.88	24.0	0.94	41	15/8



## FF90S ORFS Female Swivel - 90° Elbow Short Drop



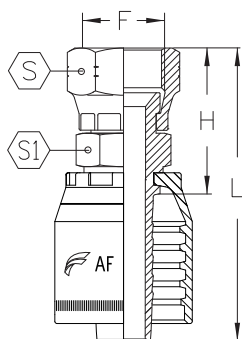
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FF90S	1/4	9/16 - 18	27.0	1.06	55.0	2.17	21.0	0.83	17	11/16
AF04-06FF90S	1/4	11/16 - 16	27.0	1.06	55.0	2.17	24.0	0.94	22	7/8
AF06-06FF90S	3/8	11/16 - 16	31.5	1.24	62.0	2.44	24.5	0.96	22	7/8
AF06-08FF90S	3/8	13/16 - 16	34.0	1.34	61.0	2.40	30.0	1.18	24	1
AF08-08FF90S	1/2	13/16 - 16	39.0	1.54	72.0	2.83	31.0	1.22	24	1
AF08-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	13/16
AF12-12FF90S	3/4	17/16 - 12	55.0	2.17	95.0	3.74	45.0	1.77	36	17/16
AF16-16FF90S	1	17/16 - 12	71.0	2.79	122.0	4.80	55.0	2.17	41	15/8



## FF90L ORFS Female Swivel - 90° Elbow Long Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FF90L	1/4	9/16 - 18	29.0	1.14	57.0	2.24	46.0	1.81	17	11/16
AF04-06FF90L	1/4	11/16 - 16	27.0	1.06	55.0	2.16	54.0	2.12	22	7/8
AF06-06FF90L	3/8	11/16 - 16	34.0	1.33	64.5	2.53	54.0	2.12	22	7/8
AF06-08FF90L	3/8	13/16 - 16	34.0	1.33	64.5	2.53	64.0	2.51	24	1
AF08-08FF90L	1/2	13/16 - 16	39.0	1.53	72.0	2.83	64.0	2.51	24	1
AF08-10FF90L	1/2	1 - 14	39.0	1.53	72.0	2.83	70.0	2.75	30	1 1/16
AF12-12FF90L	3/4	1 7/16 - 12	55.0	2.17	95.0	3.74	96.0	3.77	36	1 7/16
AF16-16FF90L	1	1 7/16 - 12	71.0	2.79	122.0	4.80	114.0	4.48	41	1 5/8

## FJIS JIS Female Swivel (Toyota)



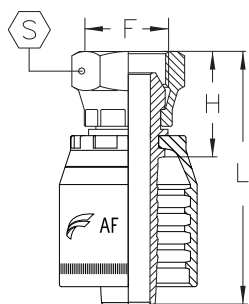
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-04FJIS	1/4	1/4 - 19	24	0.94	52.0	2.05	19.0	3/4	14	9/16
AF06-06FJIS	3/8	3/8 - 19	26	1.02	57.0	2.24	22.0	7/8	17	11/16
AF08-08FJIS	1/2	1/2 - 14	30	1.18	63.0	2.48	27.0	11/16	22	7/8
AF12-12FJIS	3/4	3/4 - 14	36	1.42	76.0	2.99	32.0	1 1/4	27	1 1/16
AF16-16FJIS	1	1 - 11	40	1.57	91.0	3.58	41.0	1 5/8	32	1 1/4



# 2

# AF Series - Industrial Hose

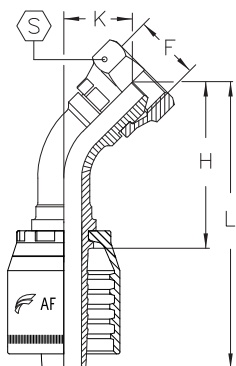
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## FBSPP BSPP Female Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
AF04-02FBSPP	1/4	1/8 - 28	17.0	0.67	45.0	1.77	14	9/16
AF04-04FBSPP	1/4	1/4 - 19	19.0	0.75	47.0	1.85	19	3/4
AF04-06FBSPP	1/4	3/8 - 19	22.0	0.87	50.0	1.97	22	7/8
AF06-06FBSPP	3/8	3/8 - 19	21.0	0.83	51.0	2.01	22	7/8
AF06-08FBSPP	3/8	1/2 - 14	23.0	0.90	54.0	2.12	27	1 1/16
AF08-08FBSPP	1/2	1/2 - 14	23.0	0.90	56.0	2.20	27	1 1/16
AF08-10FBSPP	1/2	5/8 - 14	24.0	0.94	57.0	2.24	30	1 7/16
AF12-12FBSPP	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
AF16-16FBSPP	1	1 - 11	30.0	1.18	81.0	3.19	41	1 5/8

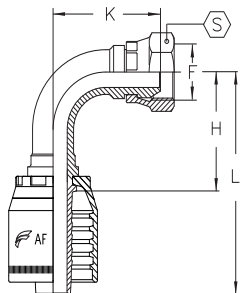
## FBSPP45 BSPP Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-02FBSPP45	1/4	1/8 - 28	36.0	1.42	64.0	2.52	16.0	0.63	14	9/16
AF04-04FBSPP45	1/4	1/4 - 19	37.0	1.46	65.0	2.56	16.0	0.63	19	3/4
AF04-06FBSPP45	1/4	3/8 - 19	40.0	1.57	68.0	2.68	19.0	0.75	22	7/8
AF06-06FBSPP45	3/8	3/8 - 19	42.0	1.65	73.0	2.87	19.0	0.75	22	7/8
AF06-08FBSPP45	3/8	1/2 - 14	44.0	1.73	75.0	2.95	21.0	0.83	27	1 1/16
AF08-08FBSPP45	1/2	1/2 - 14	49.0	1.93	82.0	3.23	22.0	0.87	27	1 1/16
AF08-10FBSPP45	1/2	5/8 - 14	49.0	1.93	82.0	3.23	22.0	0.87	30	1 7/16
AF12-12FBSPP45	3/4	3/4 - 14	66.0	2.60	106.0	4.17	28.0	1.10	32	1 1/4
AF16-16FBSPP45	1	1 - 11	84.0	3.31	135.0	5.31	36.0	1.42	41	1 5/8



## FBSPP90 BSPP Female Swivel - 90° Elbow

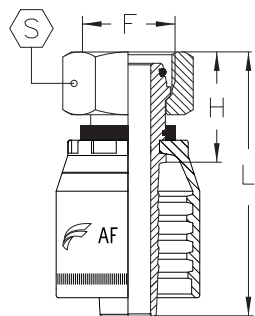


Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
AF04-02FBSPP90	1/4	1/8 - 28	26.0	1.02	54.0	2.12	28.0	1.10	14	9/16
AF04-04FBSPP90	1/4	1/4 - 19	26.0	1.02	54.0	2.12	28.0	1.10	19	3/4
AF04-06FBSPP90	1/4	3/8 - 19	26.0	1.02	54.0	2.12	32.0	1.26	22	7/8
AF06-06FBSPP90	3/8	3/8 - 19	31.0	1.22	61.0	2.40	35.0	1.38	22	7/8
AF06-08FBSPP90	3/8	1/2 - 14	31.0	1.22	61.0	2.40	38.0	1.50	27	1 1/16
AF08-08FBSPP90	1/2	1/2 - 14	37.0	1.46	70.0	2.75	42.0	1.65	27	1 1/16
AF08-10FBSPP90	1/2	5/8 - 14	37.0	1.46	70.0	2.75	43.0	1.69	30	1 7/16
AF12-12FBSPP90	3/4	3/4 - 14	54.0	2.12	95.0	3.74	56.0	2.20	32	1 1/4
AF16-16FBSPP90	1	1 - 11	70.0	2.76	121.0	4.76	72.0	2.83	41	1 5/8

2

AF Series - Industrial Hose

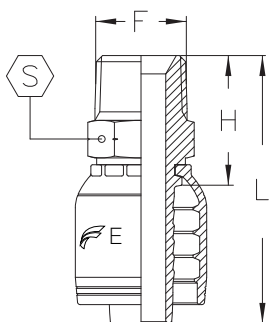
## FML Metric 24° Female Light - (DKOL)





Part Number		F	Tube	H		L		S	
	in			mm	in	mm	in	mm	in
AF04-12FML	1/4	M12 x 1.5	L6	23.0	0.90	51.0	2.01	17	1 1/16
AF04-14FML	1/4	M14 x 1.5	L8	22.0	0.87	50.0	1.97	17	1 1/16
AF04-16FML	1/4	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	3/4
AF04-18FML	1/4	M18 x 1.5	L12	24.0	0.94	52.0	2.05	22	7/8
AF06-16FML	3/8	M16 x 1.5	L10	23.0	0.90	54.0	2.12	19	3/4
AF06-18FML	3/8	M18 x 1.5	L12	24.0	0.94	54.0	2.12	22	7/8
AF06-22FML	3/8	M22 x 1.5	L15	24.0	0.94	54.0	2.12	27	1 1/16
AF08-22FML	1/2	M22 x 1.5	L15	24.0	0.94	57.0	2.24	27	1 1/16
AF08-26FML	1/2	M26 x 1.5	L18	26.0	1.02	59.0	2.32	32	1 1/4
AF12-30FML	3/4	M30 x 2.0	L22	31.0	1.22	71.0	2.79	36	1 7/16
AF16-36FML	1	M36 x 2.0	L28	32.0	1.26	83.0	3.27	41	1 5/8

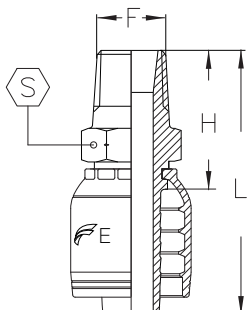
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## MP NPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E03-02MP	3/16	1/8 - 27	20.6	0.81	45.6	1.79	12	1/2
E03-04MP	3/16	1/4 - 18	26.5	1.04	51.5	2.03	14	9/16
E04-02MP	1/4	1/8 - 27	21.1	0.83	49.1	1.93	12	1/2
E04-04MP	1/4	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
E04-06MP	1/4	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
E04-08MP	1/4	1/2 - 14	34.0	1.34	62.0	2.44	22	7/8
E05-04MP	5/16	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
E05-06MP	5/16	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
E06-04MP	3/8	1/4 - 18	27.5	1.08	58.0	2.28	16	5/8
E06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19	3/4
E06-08MP	3/8	1/2 - 14	34.0	1.34	64.5	2.54	22	7/8
E08-04MP	1/2	1/4 - 18	30.5	1.20	63.2	2.49	22	7/8
E08-06MP	1/2	3/8 - 18	30.6	1.20	63.6	2.50	22	7/8
E08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22	7/8
E08-12MP	1/2	3/4 - 14	36.9	1.45	69.9	2.75	27	1 1/16
E10-08MP	5/8	1/2 - 14	36.2	1.42	72.0	2.83	25	1
E10-12MP	5/8	3/4 - 14	37.1	1.46	72.9	2.87	27	1 1/16
E12-08MP	3/4	1/2 - 14	37.5	1.48	78.0	3.07	27	1 1/16
E12-12MP	3/4	3/4 - 14	37.9	1.49	78.4	3.09	27	1 1/16
E12-16MP	3/4	1 - 11 1/2	45.5	1.79	86.0	3.38	35	1 7/16
E16-12MP	1	3/4 - 14	40.4	1.59	91.4	3.60	32	1 1/4
E16-16MP	1	1 - 11 1/2	47.0	1.85	98.0	3.86	35	1 7/16
E16-20MP	1	1 1/4 - 11 1/2	51.1	2.01	102.1	4.02	46	1 13/16
E20-20MP	1 1/4	1 1/4 - 11 1/2	51.9	2.04	109.6	4.31	46	1 13/16
E24-24MP	1 1/2	1 1/2 - 11 1/2	55.0	2.16	119.5	4.70	50	2
E32-32MP	2	2 - 11 1/2	64.0	2.52	134.0	5.27	65	2 5/16

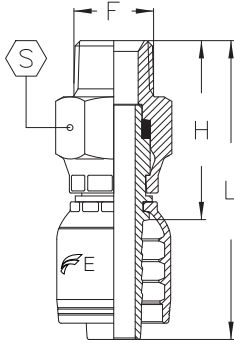
## MPL NPT Male Long





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-04MPL	1/4	1/4 - 18	36.8	1.45	64.8	2.55	14	9/16
E06-06MPL	3/8	3/8 - 18	38.9	1.53	69.4	2.73	19	3/4

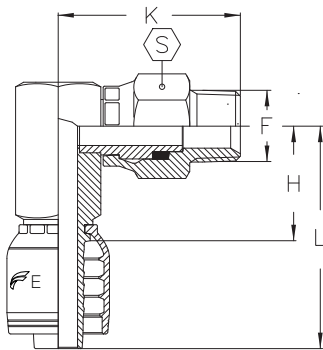
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## MPX NPT Male Swivel



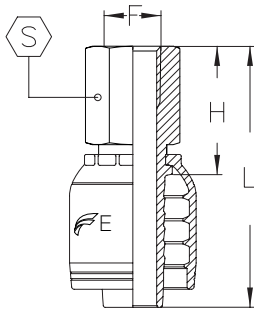
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-02MPX	1/4	1/8 - 18	32.0	1.28	60.0	2.38	13	1/2
E04-04MPX	1/4	1/4 - 18	41.0	1.61	69.0	2.72	17	11/16
E04-06MPX	1/4	3/8 - 18	46.0	1.81	74.0	2.91	22	7/8
E06-04MPX	3/8	1/4 - 18	41.0	1.61	72.0	2.83	17	11/16
E06-06MPX	3/8	3/8 - 18	45.0	1.77	75.0	2.95	22	7/8
E06-08MPX	3/8	1/2 - 14	57.0	2.24	88.0	3.46	27	11/16
E08-06MPX	1/2	3/8 - 18	46.0	1.81	79.0	3.11	22	7/8
E08-08MPX	1/2	1/2 - 14	56.0	2.20	89.0	3.50	27	11/16
E12-12MPX	3/4	3/4 - 14	61.0	2.40	101.0	3.98	34	13/8
E16-16MPX	1	1 - 11 1/2	65.0	2.56	116.0	4.57	38	1 1/2



## MPX90B NPT Male Swivel - 90° Block Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04MPX90B	1/4	1/4 - 18	32.0	1.26	60.0	2.36	39.7	1.56	16	5/8
E06-06MPX90B	3/8	3/8 - 18	32.5	1.28	63.0	2.48	41.0	1.61	19	3/4
E08-08MPX90B	1/2	1/2 - 14	33.0	1.30	66.0	2.60	48.0	1.89	22	7/8
E12-12MPX90B	3/4	3/4 - 14	43.5	1.71	84.0	3.31	64.0	2.52	32	1 1/4

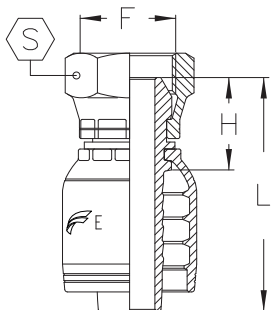
## FP NPT Female Rigid





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-02FP	1/4	1/8 - 27	21.5	0.85	49.5	1.95	16	5/8
E04-04FP	1/4	1/4 - 18	27.1	1.07	55.1	2.17	19	3/4
E04-06FP	1/4	3/8 - 18	28.4	1.12	56.4	2.22	22	7/8
E06-04FP	3/8	1/4 - 18	27.1	1.07	57.6	2.27	19	3/4
E06-06FP	3/8	3/8 - 18	28.4	1.12	58.9	2.32	22	7/8
E06-08FP	3/8	1/2 - 14	34.5	1.36	65.0	2.56	29	1 3/16
E08-08FP	1/2	1/2 - 14	35.5	1.40	68.5	2.70	29	1 3/16
E12-12FP	3/4	3/4 - 14	38.0	1.50	78.5	3.09	32	1 1/4
E16-16FP	1	1 - 11 1/2	45.8	1.80	96.8	3.81	36	1 7/16

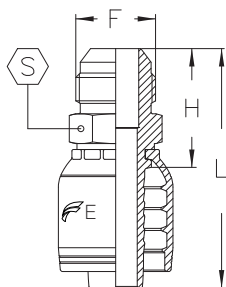
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## FPX NPSM 60° Female Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-04FPX	1/4	1/4 - 18	19.0	0.75	47.0	1.85	17	11/16
E06-06FPX	3/8	3/8 - 18	21.0	0.83	51.0	2.00	22	7/8
E08-08FPX	1/2	1/2 - 14	23.0	0.90	56.0	2.20	25	1
E12-12FPX	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
E16-16FPX	1	1 - 11 1/2	30.0	1.18	81.0	3.19	38	1 1/2

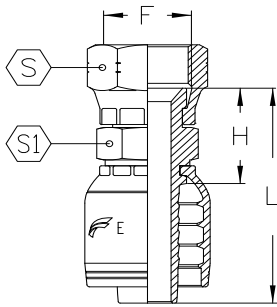
## MJ JIC 37° Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E03-04MJ	3/16	7/16 - 20	25.0	0.98	50.0	1.97	12	1/2
E04-04MJ	1/4	7/16 - 20	25.5	1.00	53.5	2.11	12	1/2
E04-05MJ	1/4	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
E04-06MJ	1/4	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
E05-05MJ	5/16	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
E05-06MJ	5/16	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
E06-06MJ	3/8	9/16 - 18	26.6	1.05	57.1	2.25	15	5/8
E06-08MJ	3/8	3/4 - 16	29.7	1.17	60.2	2.37	19	3/4
E06-10MJ	3/8	7/8 - 14	34.3	1.35	64.8	2.55	24	1
E08-06MJ	1/2	9/16 - 18	29.7	1.17	62.6	2.46	19	3/4
E08-08MJ	1/2	3/4 - 16	30.7	1.21	63.7	2.51	19	3/4
E08-10MJ	1/2	7/8 - 14	35.3	1.39	68.3	2.69	24	1
E08-12MJ	1/2	1 1/16 - 12	38.9	1.53	71.9	2.83	27	1 1/16
E10-08MJ	5/8	3/4 - 16	33.7	1.33	68.4	2.69	24	1
E10-10MJ	5/8	7/8 - 14	35.5	1.40	71.3	2.81	24	1
E10-12MJ	5/8	1 1/16 - 12	39.1	1.54	74.9	2.95	27	1 1/16
E12-10MJ	3/4	7/8 - 14	37.3	1.47	77.8	3.06	27	1 1/16
E12-12MJ	3/4	1 1/16 - 12	39.9	1.57	80.4	3.16	27	1 1/16
E12-14MJ	3/4	1 7/16 - 12	41.6	1.64	82.1	3.23	32	1 1/4
E12-16MJ	3/4	1 5/16 - 12	42.1	1.66	82.6	3.25	34	1 3/8
E16-16MJ	1	1 5/16 - 12	43.6	1.72	94.6	3.72	34	1 3/8
E16-20MJ	1	1 5/8 - 12	46.8	1.84	97.8	3.85	42	1 11/16
E20-20MJ	1 1/4	1 5/8 - 12	47.6	1.87	105.3	4.14	42	1 11/16
E24-24MJ	1 1/2	1 7/8 - 12	53.0	2.09	117.5	4.62	50	2
E32-32MJ	2	2 1/2 - 12	63.4	2.50	133.4	5.25	65	2 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

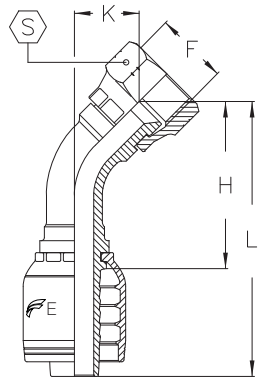
## FJ JIC 37° Female Swivel





Part Number	in	F	H		L		S		S1	
			mm	in	mm	in	mm	in	mm	in
E03-03FJ	3/16	3/8 - 24	19.0	0.75	44.0	1.73	12	1/2	12	1/2
E03-04FJ	3/16	7/16 - 20	19.0	0.75	44.0	1.73	14	9/16	12	1/2
E04-04FJ	1/4	7/16 - 20	20.5	0.81	48.5	1.91	14	9/16	14	9/16
E04-05FJ	1/4	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
E04-06FJ	1/4	9/16 - 18	22.0	0.87	50.0	1.97	19	3/4	14	9/16
E04-08FJ	1/4	3/4 - 16	15.5	0.61	43.0	1.68	22	7/8	19	3/4
E05-04FJ	5/16	7/16 - 20	21.0	0.83	49.0	1.93	14	9/16	14	9/16
E05-05FJ	5/16	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
E05-06FJ	5/16	9/16 - 18	22.5	0.88	50.5	1.99	19	3/4	16	5/8
E05-08FJ	5/16	3/4 - 16	24.5	0.97	52.5	2.05	22	7/8	19	3/4
E06-04FJ	3/8	7/16 - 20	21.0	0.83	51.5	2.03	14	9/16	16	5/8
E06-05FJ	3/8	1/2 - 20	21.5	0.85	52.0	2.05	17	11/16	16	5/8
E06-06FJ	3/8	9/16 - 18	22.5	0.88	53.0	2.09	19	3/4	16	5/8
E06-06FJ-01	3/8	9/16 - 18	22.5	0.88	53.0	2.09	17.5	11/16	16	5/8
E06-08FJ	3/8	3/4 - 16	24.5	0.96	55.0	2.16	22	7/8	19	3/4
E06-10FJ	3/8	7/8 - 14	36.5	1.44	57.0	2.24	27	11/16	22	7/8
E08-06FJ	1/2	9/16 - 18	24.5	0.96	57.5	2.26	19	3/4	19	3/4
E08-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
E08-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	11/16	22	7/8
E08-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
E10-08FJ	5/8	3/4 - 16	26.7	1.05	62.5	2.46	22	7/8	22	7/8
E10-10FJ	5/8	7/8 - 14	27.7	1.09	63.5	2.50	27	1 1/16	22	7/8
E10-12FJ	5/8	1 1/16 - 12	30.5	1.20	66.3	2.61	32	1 1/4	25	1
E12-10FJ	3/4	7/8 - 14	30.0	1.18	70.5	2.77	27	1 1/16	27	1 1/16
E12-12FJ	3/4	1 1/16 - 12	31.8	1.25	72.3	2.85	32	1 1/4	27	1 1/16
E12-14FJ	3/4	1 7/16 - 12	34.5	1.36	75.0	2.95	36	1 7/16	30	1 3/16
E12-16FJ	3/4	1 5/16 - 12	35.5	1.40	76.0	2.99	38	1 1/2	32	1 1/4
E16-12FJ	1	1 1/16 - 12	34.3	1.35	85.3	3.36	32	1 1/4	32	1 1/4
E16-16FJ	1	1 5/16 - 12	37.0	1.46	88.0	3.46	38	1 1/2	32	1 1/4
E16-20FJ	1	1 5/8 - 12	42.0	1.65	93.0	3.66	50	2	41	1 5/8
E20-20FJ	1 1/4	1 5/8 - 12	42.8	1.68	100.5	3.96	50	2	41	1 5/8
E20-24FJ	1 1/4	1 7/8 - 12	50.0	1.97	92.0	3.62	60	2 1/2	--	--
E24-24FJ	1 1/2	1 7/8 - 12	47.0	1.85	111.5	4.39	55	2 3/16	46	1 13/16
E32-32FJ	2	2 1/2 - 12	55.5	2.18	125.5	4.94	70	2 3/4	60	2 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

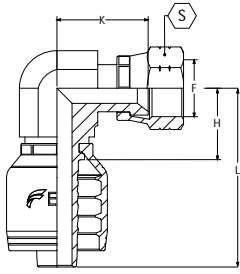
## FJ45 JIC 37° Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E03-04FJ45	3/16	7/16 - 20	29.0	1.14	54.0	2.12	10.0	0.39	14	9/16
E04-04FJ45	1/4	7/16 - 20	31.0	1.22	59.0	2.32	10.0	0.39	14	9/16
E04-05FJ45	1/4	1/2 - 20	32.0	1.26	60.0	2.36	11.0	0.43	17	11/16
E04-06FJ45	1/4	9/16 - 18	33.0	1.30	61.0	2.40	12.0	0.47	19	3/4
E05-05FJ45	5/16	1/2 - 20	33.0	1.30	61.0	2.40	11.0	0.43	17	11/16
E05-06FJ45	5/16	9/16 - 18	34.0	1.34	62.0	2.44	12.0	0.47	19	3/4
E06-06FJ45	3/8	9/16 - 18	35.5	1.40	66.0	2.60	12.0	0.47	19	3/4
E06-08FJ45	3/8	3/4 - 16	37.5	1.48	68.0	2.68	14.0	0.55	22	7/8
E08-08FJ45	1/2	3/4 - 16	41.0	1.61	74.0	2.91	14.0	0.57	22	7/8
E08-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.63	27	1 1/16
E08-12FJ45	1/2	1 1/16 - 12	45.5	1.79	79.0	3.09	19.0	0.75	32	1 1/4
E10-10FJ45	5/8	7/8 - 14	47.0	1.85	83.0	3.27	16.0	0.63	27	1 1/16
E10-12FJ45	5/8	1 1/16 - 12	50.0	1.97	86.0	3.38	19.0	0.75	32	1 1/4
E12-12FJ45	3/4	1 1/16 - 12	57.0	2.24	97.0	3.82	20.0	0.79	32	1 1/4
E12-14FJ45	3/4	1 3/16 - 12	59.0	2.32	100.0	3.94	22.0	0.87	36	1 7/16
E12-16FJ45	3/4	1 5/16 - 12	61.0	2.40	101.0	3.98	24.0	0.94	38	1 1/2
E16-16FJ45	1	1 5/16 - 12	72.0	2.83	123.0	4.84	24.0	0.94	38	1 1/2
E16-20FJ45	1	1 5/8 - 12	76.0	2.99	127.0	5.00	28.0	1.10	50	2
E20-20FJ45	1 1/4	1 5/8 - 12	85.0	3.35	143.0	5.63	38.0	1.10	50	2
E24-24FJ45	1 1/2	1 7/8 - 12	99.0	3.90	164.0	6.46	46.0	1.26	60	2 3/8
E32-32FJ45	2	2 1/2 - 12	132.0	5.20	202.0	7.95	61.0	1.69	70	2 3/4

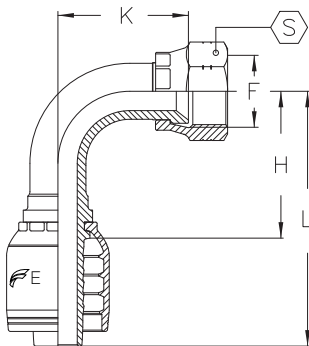
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FJ90B JIC 37° Female Swivel - 90° Block Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FJ90B	1/4	1/4 - 20	17.3	0.68	43.6	1.72	18.8	0.74	14	9/16
E06-06FJ90B	3/8	3/16 - 18	17.8	0.68	52.1	2.05	21.6	0.85	19	3/4
E08-08FJ90B	1/2	3/4 - 16	21.2	0.83	52.0	2.04	26.2	1.03	22	7/8

## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FJ90S	1/4	7/16 - 20	25.5	1.00	53.5	2.11	20.0	0.79	14	9/16
E04-05FJ90S	1/4	1/2 - 20	25.5	1.00	53.5	2.11	21.0	0.83	17	1 1/16
E04-06FJ90S	1/4	9/16 - 18	25.5	1.00	53.5	2.11	23.0	0.90	19	3/4
E06-04FJ90S	3/8	7/16 - 20	25.5	1.00	56.0	2.20	20.0	0.79	14	9/16
E06-06FJ90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	23.0	0.90	19	3/4
E06-08FJ90S	3/8	3/4 - 16	31.0	1.22	61.5	2.42	29.0	1.14	22	7/8
E08-06FJ90S	1/2	9/16 - 18	30.0	1.18	61.5	2.42	23.0	0.90	19	3/4
E08-08FJ90S	1/2	3/4 - 16	37.0	1.46	70.0	2.75	29.0	1.14	22	7/8
E08-10FJ90S	1/2	7/8 - 14	38.0	1.50	71.0	2.79	33.0	1.30	27	1 1/16
E08-12FJ90S	1/2	1 1/16 - 12	40.0	1.57	73.0	2.87	40.0	1.57	32	1 1/4
E10-10FJ90S	5/8	7/8 - 14	43.0	1.69	79.0	3.11	32.0	1.26	27	1 1/16
E10-12FJ90S	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	40.0	1.57	32	1 1/4
E12-10FJ90S	3/4	7/8 - 14	44.0	1.73	84.5	3.33	33.0	1.30	27	1 1/16
E12-12FJ90S	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	43.0	1.69	32	1 1/4
E12-16FJ90S	3/4	1 5/16 - 12	55.0	2.16	95.0	3.74	49.0	1.93	38	1 1/2
E16-16FJ90S	1	1 5/16 - 12	71.0	2.79	122.0	4.80	56.0	2.20	38	1 1/2

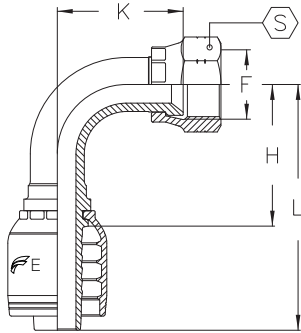
# 2

# E Series - Braided Hose

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

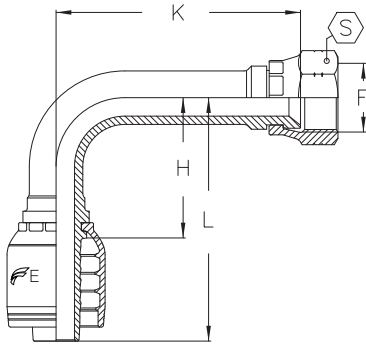
## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E03-04FJ90M	3/16	7/16 - 20	21.0	0.83	46.0	1.81	21.0	0.83	14	9/16
E04-04FJ90M	1/4	7/16 - 20	25.5	1.00	53.5	2.11	26.0	1.02	14	9/16
E04-05FJ90M	1/4	1/2 - 20	25.5	1.00	53.5	2.11	26.0	1.02	17	1 1/16
E04-06FJ90M	1/4	9/16 - 18	25.5	1.00	53.5	2.11	27.0	1.06	19	3/4
E05-05FJ90M	5/16	1/2 - 20	28.0	1.10	56.0	2.20	29.0	1.14	17	1 1/16
E05-06FJ90M	5/16	9/16 - 18	28.0	1.10	56.0	2.20	29.0	1.14	19	3/4
E05-08FJ90M	5/16	3/4 - 16	28.0	1.10	56.0	2.20	27.0	1.06	22	3/4
E06-06FJ90M	3/8	9/16 - 18	31.0	1.22	61.5	2.42	33.0	1.30	19	3/4
E06-08FJ90M	3/8	3/4 - 16	31.0	1.22	61.5	2.42	33.0	1.30	22	7/8
E08-08FJ90M	1/2	3/4 - 16	37.0	1.46	70.0	2.75	39.0	1.53	22	7/8
E08-10FJ90M	1/2	7/8 - 14	37.0	1.46	70.0	2.75	40.0	1.57	27	1 1/16
E08-12FJ90M	1/2	1 1/16 - 12	37.0	1.46	70.0	2.76	45.0	1.77	32	1 1/4
E10-10FJ90M	5/8	7/8 - 14	45.0	1.77	81.0	3.19	45.0	1.77	27	1 1/16
E10-12FJ90M	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	47.0	1.85	32	1 1/4
E12-10FJ90M	3/4	7/8 - 14	55.0	2.16	95.0	3.74	54.0	2.12	27	1 1/16
E12-12FJ90M	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	53.0	2.09	32	1 1/4
E12-14FJ90M	3/4	1 7/16 - 12	55.0	2.16	95.0	3.74	54.0	2.12	36	1 7/16
E12-16FJ90M	3/4	1 5/16 - 12	55.0	2.16	95.0	3.74	56.0	2.20	38	1 1/2
E16-16FJ90M	1	1 5/16 - 12	71.0	2.79	122.0	4.80	70.0	2.75	38	1 1/2
E16-20FJ90M	1	1 5/8 - 12	71.0	2.79	122.0	4.80	70.0	2.75	50	2
E20-20FJ90M	1 1/4	1 5/8 - 12	86.0	3.38	143.0	5.63	82.0	3.23	50	2
E20-24FJ90M	1 1/4	1 7/8 - 12	86.0	3.38	143.0	5.63	82.0	3.23	60	2 3/8
E24-24FJ90M	1 1/2	1 7/8 - 12	102.0	4.01	167.0	6.57	96.0	3.78	60	2 3/8
E32-32FJ90M	2	2 1/2 - 12	137.0	5.39	207.0	8.15	134.0	5.27	70	2 3/4



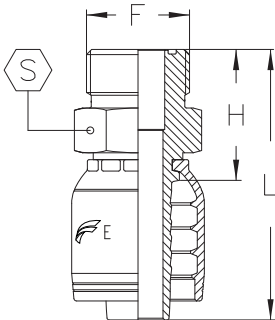




## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop



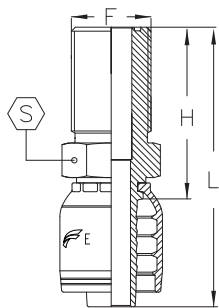
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FJ90L	1/4	7/16 - 20	25.5	1.00	53.5	2.11	46.0	1.81	14	9/16
E04-05FJ90L	1/4	1/2 - 20	25.5	1.00	53.5	2.11	46.0	1.81	17	11/16
E04-06FJ90L	1/4	9/16 - 18	25.5	1.00	53.5	2.11	54.0	2.12	19	3/4
E06-06FJ90L	3/8	9/16 - 18	31.0	1.22	61.5	2.42	54.0	2.12	19	3/4
E06-08FJ90L	3/8	3/4 - 16	31.0	1.22	61.5	2.42	64.0	2.52	22	7/8
E08-08FJ90L	1/2	3/4 - 16	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
E08-10FJ90L	1/2	7/8 - 14	38.0	1.50	71.0	2.79	70.0	2.75	27	1 1/16
E10-10FJ90L	5/8	7/8 - 14	45.0	1.77	81.0	3.19	70.0	2.75	27	1 1/16
E10-12FJ90L	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	96.0	3.78	32	1 1/4
E12-12FJ90L	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	96.0	3.78	32	1 1/4
E16-16FJ90L	1	1 5/16 - 12	71.0	2.79	122.0	4.80	114.0	4.49	38	1 1/2
E20-20FJ90L	1 1/4	1 5/8 - 12	86.0	3.39	143.0	5.63	129.0	5.08	50	2



## MF ORFS Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-04MF	1/4	9/16 - 18	23.5	0.92	51.5	2.02	17	1 1/16
E04-06MF	1/4	1 1/16 - 16	25.5	1.00	53.5	2.10	19	3/4
E06-06MF	3/8	1 1/16 - 16	25.5	1.00	56.0	2.20	19	3/4
E06-08MF	3/8	1 3/16 - 16	28.5	1.12	59.0	2.32	22	7/8
E06-10MF	3/8	1 - 14	33.0	1.29	63.5	2.50	27	1 1/16
E08-08MF	1/2	1 3/16 - 16	29.5	1.16	62.5	2.46	22	7/8
E08-10MF	1/2	1 - 14	34.0	1.33	67.0	2.63	27	1 1/16
E08-12MF	1/2	1 7/16 - 12	37.0	1.45	70.0	2.75	32	1 1/4
E10-10MF	5/8	1 - 14	34.0	1.33	70.0	2.75	27	1 1/16
E10-12MF	5/8	1 7/16 - 12	37.0	1.45	73.0	2.87	32	1 1/4
E12-12MF	3/4	1 7/16 - 12	38.0	1.49	78.5	3.09	32	1 1/4
E12-16MF	3/4	1 7/16 - 12	42.5	1.67	83.0	3.26	41	1 5/8
E16-16MF	1	1 7/16 - 12	44.0	1.73	95.0	3.74	41	1 5/8
E20-20MF	1 1/4	1 11/16 - 12	46.0	1.81	104.0	4.09	46	1 13/16

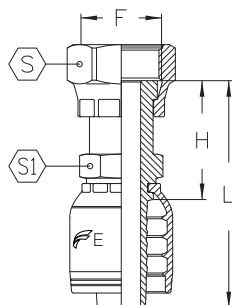
## MFK ORFS Male Bulkhead






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E06-06MFK*	3/8	1 1/16 - 16	47.0	1.85	77.0	3.03	19	3/4
E08-08MFK*	1/2	1 3/16 - 16	50.0	2.00	83.0	3.26	22	7/8

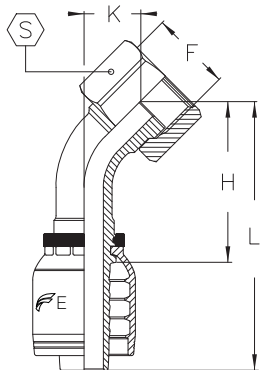
\*Locknut not included.



## FF ORFS Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
E04-04FF	1/4	9/16 - 18	26.5	1.04	54.5	2.14	17	1 1/16	14	9/16
E04-06FF	1/4	1 1/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
E04-08FF	1/4	1 3/16 - 16	32.5	1.28	60.5	2.38	24	1	19	3/4
E05-06FF	5/16	1 1/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
E06-04FF	3/8	9/16 - 18	26.5	1.04	57.0	2.24	17	1 1/16	16	5/8
E06-06FF	3/8	1 1/16 - 16	28.5	1.12	59.0	2.32	22	7/8	16	5/8
E06-08FF	3/8	1 3/16 - 16	32.5	1.27	63.0	2.48	24	1	19	3/4
E08-06FF	1/2	1 1/16 - 16	30.5	1.20	63.5	2.50	22	7/8	19	3/4
E08-08FF	1/2	1 3/16 - 16	33.5	1.31	66.5	2.61	24	1	19	3/4
E08-10FF	1/2	1 - 14	39.5	1.55	72.5	2.85	30	1 1/16	24	1
E08-12FF	1/2	1 1/16 - 12	43.5	1.71	76.5	3.01	36	1 1/16	27	1 1/16
E10-08FF	5/8	1 3/16 - 16	35.7	1.41	71.5	2.81	24	1	24	1
E10-10FF	5/8	1 - 14	39.5	1.55	75.5	2.97	30	1 1/16	24	1
E10-12FF	5/8	1 1/16 - 12	43.5	1.71	79.5	3.12	36	1 1/16	27	1 1/16
E12-10FF	3/4	1 - 14	41.5	1.63	82.0	3.22	30	1 1/16	27	1 1/16
E12-12FF	3/4	1 1/16 - 12	44.5	1.75	85.0	3.34	36	1 1/16	27	1 1/16
E12-16FF	3/4	1 1/16 - 12	47.5	1.87	88.0	3.46	41	1 5/8	36	1 1/16
E16-12FF	1	1 1/16 - 12	47.0	1.85	98.0	3.85	36	1 1/16	32	1 1/4
E16-16FF	1	1 1/16 - 12	49.0	1.92	100.0	3.93	41	1 5/8	36	1 1/16
E16-20FF	1	1 1/16 - 12	50.5	1.98	102.0	4.01	50	2	41	1 5/8
E20-20FF	1 1/4	1 1/16 - 12	51.0	2.00	109.0	4.29	50	2	41	1 5/8
E20-24FF	1 1/4	2 - 12	54.5	2.15	112.0	4.41	60	2 3/8	50	2
E24-24FF	1 1/2	2 - 12	54.5	2.14	119.0	4.68	60	2 3/8	50	2

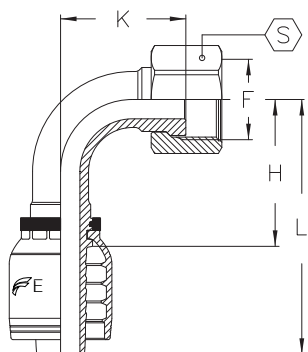
## FF ORFS Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FF45	1/4	9/16 - 18	32.5	1.27	60.5	2.38	10.5	0.41	17	11/16
E04-06FF45	1/4	11/16 - 16	34.5	1.35	62.5	2.46	12.5	0.49	22	7/8
E05-06FF45	5/16	11/16 - 16	35.0	1.37	63.0	2.48	12.5	0.49	22	7/8
E06-04FF45	3/8	9/16 - 18	35.0	1.37	65.5	2.59	11.5	0.45	17	11/16
E06-06FF45	3/8	11/16 - 16	36.0	1.41	66.5	2.61	12.5	0.49	22	7/8
E06-08FF45	3/8	13/16 - 16	38.5	1.51	69.0	2.71	15.0	0.59	24	1
E08-06FF45	1/2	11/16 - 16	46.5	1.83	79.5	3.12	19.5	0.76	22	7/8
E08-08FF45	1/2	13/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
E08-10FF45	1/2	1 - 14	45.0	1.77	78.0	3.07	17.5	0.68	30	1 1/16
E08-12FF45	1/2	1 1/16 - 12	47.0	1.85	80.0	3.14	20.5	0.80	36	1 1/16
E10-10FF45	5/8	1 - 14	49.0	1.92	85.0	3.34	18.0	0.70	30	1 1/16
E10-12FF45	5/8	1 1/16 - 12	51.5	2.02	87.5	3.44	20.5	0.80	36	1 1/16
E12-10FF45	3/4	1 - 14	64.0	2.51	104.0	4.09	25.5	1.00	30	1 1/16
E12-12FF45	3/4	1 1/16 - 12	58.0	2.28	99.0	3.89	21.0	0.82	36	1 1/16
E12-16FF45	3/4	1 1/16 - 12	60.5	2.38	101.0	3.97	23.5	0.92	41	1 5/8
E16-16FF45	1	1 1/16 - 12	73.0	2.87	124.0	4.88	24.0	0.94	41	1 5/8
E16-20FF45	1	1 1/16 - 12	75.0	2.95	126.0	4.96	26.5	1.04	50	2
E20-20FF45	1 1/4	1 1/16 - 12	84.0	3.30	142.0	5.59	27.0	1.06	50	2
E24-24FF45	1 1/2	2 - 12	98.0	3.85	163.0	6.41	30.0	1.18	60	2 3/8

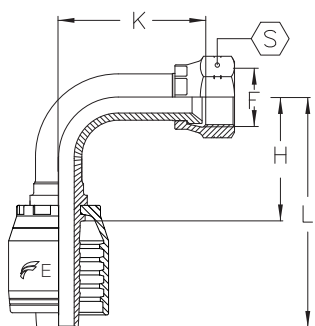
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FF90S ORFS Female Swivel - 90° Elbow Short Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FF90S	1/4	9/16 - 18	27.0	1.06	55.0	2.17	21.0	0.83	17	11/16
E04-06FF90S	1/4	11/16 - 16	27.0	1.06	55.0	2.17	24.0	0.94	22	7/8
E05-06FF90S	5/16	11/16 - 16	29.0	1.14	57.0	2.24	25.0	0.98	22	7/8
E06-04FF90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	22.0	0.87	17	11/16
E06-06FF90S	3/8	11/16 - 16	31.5	1.24	62.0	2.44	24.5	0.96	22	7/8
E06-08FF90S	3/8	13/16 - 16	31.0	1.22	61.0	2.40	30.0	1.18	24	1
E08-06FF90S	1/2	11/16 - 16	37.0	1.46	70.0	2.76	24.5	0.96	22	7/8
E08-08FF90S	1/2	13/16 - 16	39.0	1.54	72.0	2.83	31.0	1.22	24	1
E08-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	1 3/16
E08-12FF90S	1/2	1 1/16 - 12	39.0	1.54	72.0	2.83	42.0	1.65	36	1 1/16
E10-08FF90S	5/8	1 3/16 - 16	41.0	1.61	75.0	2.95	31.0	1.22	24	1
E10-10FF90S	5/8	1 - 14	45.0	1.77	81.0	3.19	35.0	1.38	30	1 3/16
E10-12FF90S	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	42.0	1.65	36	1 1/16
E12-10FF90S	3/4	1 - 14	46.5	1.83	83.5	3.29	35.0	1.38	30	1 3/16
E12-12FF90S	3/4	1 1/16 - 12	55.0	2.17	95.0	3.74	45.0	1.77	36	1 1/16
E12-16FF90S	3/4	1 1/16 - 12	55.0	2.17	95.0	3.74	49.0	1.93	41	1 5/8
E16-16FF90S	1	1 1/16 - 12	71.0	2.79	122.0	4.80	55.0	2.17	41	1 5/8
E16-20FF90S	1	1 1/16 - 12	71.0	2.79	122.0	4.80	58.0	2.28	50	2
E20-20FF90S	1 1/4	1 1/16 - 12	86.0	3.39	143.0	5.63	63.0	2.48	50	2
E24-24FF90S	1 1/2	2 - 12	102.0	4.02	167.0	6.57	73.0	2.87	60	2 3/8

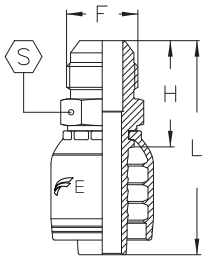
## FF90L ORFS Female Swivel - 90° Elbow Long Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FF90L	1/4	9/16 - 18	29.0	1.14	57.0	2.24	46	1.81	17	11/16
E04-06FF90L	1/4	11/16 - 16	27.0	1.06	55.0	2.16	54	2.12	22	7/8
E06-06FF90L	3/8	11/16 - 16	34.0	1.33	64.5	2.53	54	2.12	22	7/8
E06-08FF90L	3/8	13/16 - 16	34.0	1.33	64.5	2.53	64	2.51	24	1
E08-08FF90L	1/2	13/16 - 16	39.0	1.53	72.0	2.83	64	2.51	24	1
E08-10FF90L	1/2	1 - 14	39.0	1.53	72.0	2.83	70	2.75	30	1 1/16
E10-10FF90L	5/8	1 - 14	45.0	1.77	81.0	3.18	70	2.75	30	1 1/16
E12-12FF90L	3/4	1 1/16 - 12	54.0	2.12	95.0	3.74	96	3.77	36	1 1/16
E16-16FF90L	1	1 1/16 - 12	71.0	2.79	122.0	4.80	114	4.48	41	1 5/8
E20-20FF90L	1 1/4	1 1/16 - 12	83.3	3.28	141.0	5.55	130	5.12	50	2

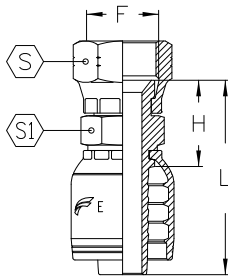
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## MA SAE 45° Male



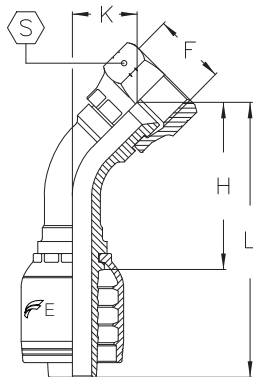
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E05-06MA	5/16	5/8 - 18	28.2	1.11	56.2	2.21	16	5/8
E06-06MA	3/8	5/8 - 18	28.2	1.11	58.7	2.21	16	5/8
E12-12MA	3/4	1 1/16 - 14	43.4	1.71	83.9	3.30	27	1 1/16

## FA SAE 45° Female Swivel



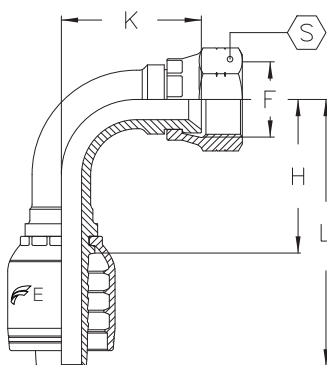
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
E04-06FA	1/4	5/8 - 18	23.0	0.90	51.0	2.02	22	7/8	17	1 1/16
E05-06FA	5/16	5/8 - 18	23.5	0.92	51.5	2.02	22	7/8	16	5/8
E06-06FA	3/8	5/8 - 18	23.5	0.92	54.0	2.12	22	7/8	16	5/8
E10-12FA	5/8	1 1/16 - 14	31.8	1.25	78.0	3.07	32	1 1/4	25	1
E12-12FA	3/4	1 1/16 - 14	31.8	1.25	72.3	3.27	32	1 1/4	27	1

## FA45 SAE 45° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E05-06FA45	5/16	5/8 - 18	38.0	1.50	66.0	2.60	16.0	0.63	22	7/8
E06-06FA45	3/8	5/8 - 18	39.0	1.53	69.5	2.74	16.0	0.63	22	7/8
E12-12FA45	3/4	1 1/16 - 14	62.0	2.44	103	4.05	25.0	0.98	32	1 1/4

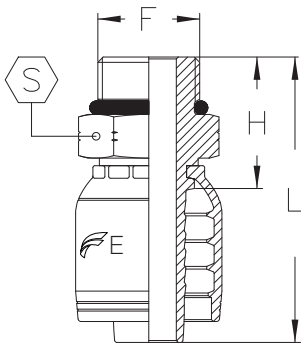
## FA90 SAE 45° Female Swivel - 90° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E05-06FA90	5/16	5/8 - 18	28.0	1.10	56.0	2.20	29.0	1.14	22	7/8
E06-06FA90	3/8	5/8 - 18	31.0	1.22	61.0	2.40	31.0	1.22	22	7/8
E12-12FA90	3/4	1 1/16 - 14	55.0	2.16	95.0	3.74	51.0	2.01	32	1 1/4

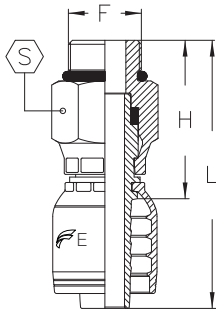
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## MOB O-Ring Boss Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-04MOB	1/4	7/16 - 20	21.7	0.85	49.7	1.96	14	9/16
E04-05MOB	1/4	1/2 - 20	22.2	0.87	50.2	1.98	16	5/8
E04-06MOB	1/4	9/16 - 18	23.5	0.92	51.5	2.03	17	11/16
E04-08MOB	1/4	3/4 - 16	26.0	1.02	54.0	2.12	22	7/8
E06-06MOB	3/8	9/16 - 18	23.5	0.92	54.0	2.12	17	11/16
E06-08MOB	3/8	3/4 - 16	26.2	1.03	56.7	2.23	22	7/8
E06-10MOB	3/8	7/8 - 14	28.0	1.10	58.5	2.30	25	1
E08-08MOB	1/2	3/4 - 16	27.2	1.07	60.2	2.37	22	7/8
E08-10MOB	1/2	7/8 - 14	29.7	1.17	62.7	2.47	25	1
E08-12MOB	1/2	1 1/16 - 12	33.6	1.32	66.6	2.62	32	1 1/4
E10-10MOB	5/8	7/8 - 14	29.9	1.18	65.7	2.59	25	1
E10-12MOB	5/8	1 1/16 - 12	33.8	1.33	69.6	2.74	32	1 1/4
E12-12MOB	3/4	1 1/16 - 12	34.6	1.36	75.1	2.96	32	1 1/4
E12-16MOB	3/4	1 5/16 - 12	36.1	1.42	76.6	3.01	38	1 1/2
E16-16MOB	1	1 5/16 - 12	37.6	1.48	88.6	3.49	38	1 1/2

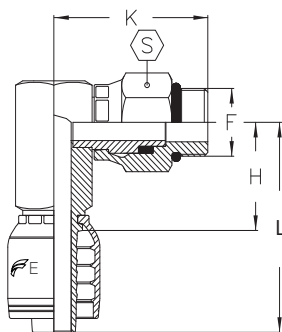
## MOBX O-Ring Boss Male Swivel





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-04MOBX	1/4	7/16 - 20	37.0	1.46	65.0	2.56	17	11/16
E04-06MOBX	1/4	9/16 - 18	42.0	1.65	70.2	2.76	19	3/4
E06-06MOBX	3/8	9/16 - 18	42.0	1.65	73.0	2.87	19	3/4
E06-08MOBX	3/8	3/4 - 16	47.0	1.85	80.0	3.15	22	7/8
E08-08MOBX	1/2	3/4 - 16	49.0	1.93	82.0	3.23	22	7/8
E08-10MOBX	1/2	7/8 - 14	50.0	1.97	83.0	3.27	26	1 1/16
E10-10MOBX	5/8	7/8 - 14	50.2	1.97	86.0	3.36	26	1 1/16
E12-12MOBX	3/4	1 1/16 - 12	59.0	2.32	99.0	3.90	32	1 1/4

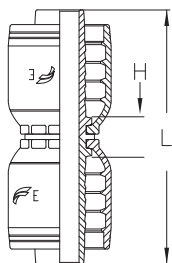
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## MOBX90B O-Ring Boss Male Swivel - 90° Block Elbow



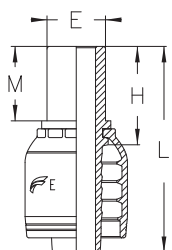
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-06MOBX90B	1/4	9/16 - 18	32.0	1.26	60.0	2.36	47.4	1.87	19	3/4
E06-06MOBX90B	3/8	9/16 - 18	32.0	1.26	63.0	2.36	48.0	1.88	19	3/4
E06-08MOBX90B	3/8	3/4 - 16	33.0	1.36	63.0	2.48	50.0	1.97	22	7/8
E08-08MOBX90B	1/2	3/4 - 16	33.0	1.30	66.0	2.60	51.0	2.00	22	7/8
E08-10MOBX90B	1/2	7/8 - 14	33.0	1.30	66.0	2.60	55.0	2.16	26	1 1/16
E12-12MOBX90B	3/4	1 1/16 - 12	43.0	1.69	84.0	3.31	65.0	2.56	32	1 1/4


## HM Hose Mender



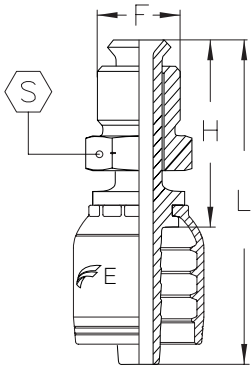
Part Number		H		L	
	in	mm	in	mm	in
E04-04HM	1/4	13.0	0.51	70.0	2.75
E06-06HM	3/8	13.0	0.51	74.0	2.91
E08-08HM	1/2	15.0	0.59	81.0	3.18
E12-12HM	3/4	18.0	0.71	99.0	3.89
E16-16HM	1	21.0	0.83	123.0	4.84

## SP Imperial Standpipe



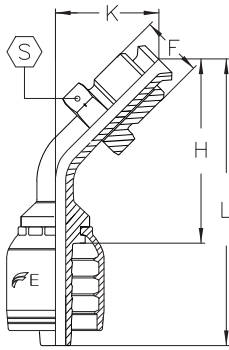
Part Number		E		H		M		L	
	in	mm	in	mm	in	mm	in	mm	in
E04-04SP	1/4	6.3	1/4	30.5	1.20	24.0	0.94	58.5	2.30
E06-06SP	3/8	9.5	3/8	32.0	1.26	26.0	1.02	62.5	2.46
E08-08SP	1/2	12.7	1/2	32.5	1.28	26.0	1.02	65.5	2.58
E12-12SP	3/4	19.0	3/4	44.5	1.75	36.0	1.42	85.0	3.35
E16-16SP	1	25.4	1	49.5	1.95	40.0	1.57	100.0	3.94

## MIX SAE Inverted Flare Male Swivel



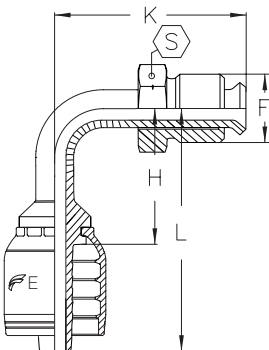
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-03MIX	1/4	3/8 - 24	38.3	1.51	66.8	2.63	9.5	3/8
E04-04MIX	1/4	7/16 - 24	39.1	1.54	67.8	2.67	11.1	7/16
E04-05MIX	1/4	1/2 - 20	42.2	1.66	70.6	2.78	12.0	1/2
E06-04MIX	3/8	7/16 - 24	39.9	1.57	70.6	2.78	11.1	7/16
E06-05MIX	3/8	1/2 - 20	42.4	1.67	73.1	2.88	12.0	1/2
E06-06MIX	3/8	5/8 - 18	43.7	1.72	74.4	2.93	16.0	5/8
E06-08MIX	3/8	3/4 - 18	48.5	1.91	79.2	3.12	19.0	3/4
E08-08MIX	1/2	3/4 - 18	49.0	1.93	82.3	3.24	19.0	3/4

## MIX45 SAE Inverted Flare Male Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-03MIX45	1/4	3/8 - 24	41.6	1.64	70.1	2.76	13.5	0.53	9.5	3/8
E04-04MIX45	1/4	7/16 - 24	51.8	2.04	80.3	3.16	14.5	0.57	11.1	7/16
E04-05MIX45	1/4	1/2 - 20	52.1	2.05	81.5	3.21	16.5	0.65	12.0	1/2
E06-05MIX45	3/8	1/2 - 20	50.0	1.97	80.5	3.17	16.5	0.65	12.0	1/2
E06-06MIX45	3/8	5/8 - 18	52.6	2.07	83.0	3.27	18.0	0.71	16.0	5/8
E08-08MIX45	1/2	3/4 - 18	64.8	2.55	97.8	3.85	21.6	0.85	19.0	3/4

## MIX90 SAE Inverted Flare Male Swivel - 90° Elbow

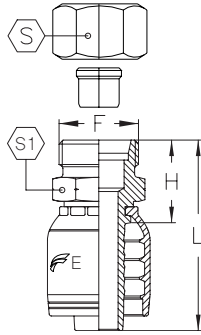


Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-03MIX90	1/4	3/8 - 24	32.5	1.28	61.0	2.40	24.6	0.97	9.5	3/8
E04-04MIX90	1/4	7/16 - 24	40.4	1.59	68.8	2.71	27.9	1.10	11.1	7/16
E04-05MIX90	1/4	1/4 - 20	42.7	1.68	71.1	2.80	32.5	1.28	12.0	1/2
E06-05MIX90	3/8	1/2 - 20	43.4	1.71	73.9	2.91	32.5	1.28	12.0	1/2
E06-06MIX90	3/8	5/8 - 18	48.3	1.90	78.7	3.10	36.8	1.45	16.0	5/8
E06-08MIX90	3/8	3/4 - 18	55.6	2.19	86.1	3.39	45.2	1.78	19.0	3/4
E08-08MIX90	1/2	3/4 - 18	56.1	2.21	89.1	3.51	45.2	1.78	19.0	3/4

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

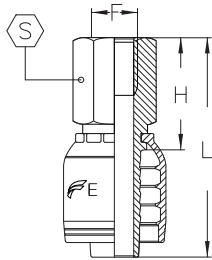


## MRNS SAE Flareless Compression



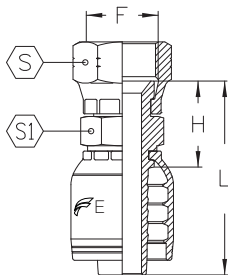
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
E04-04MRNS	1/4	7/16 - 20	24.0	0.94	51.0	2.01	14	9/16	14	9/16
E04-05MRNS	1/4	1/2 - 20	25.3	1.00	53.0	2.09	16	5/8	17	11/16
E06-05MRNS	3/8	1/2 - 20	26.0	1.02	55.6	2.19	16	5/8	17	11/16
E06-06MRNS	3/8	9/16 - 18	26.8	1.05	55.6	2.19	17	11/16	17	11/16
E06-08MRNS	3/8	3/4 - 16	30.0	1.18	58.5	2.30	22	7/8	19	3/4
E08-08MRNS	1/2	3/4 - 16	30.4	1.20	61.3	2.41	22	7/8	19	3/4
E08-10MRNS	1/2	7/8 - 14	32.3	1.27	63.4	2.50	25	1	24	1
E12-12MRNS	3/4	1 1/16 - 12	35.7	1.40	74.7	2.94	32	1 1/4	27	1 1/16
E16-16MRNS	1	1 5/16 - 12	36.7	1.44	87.7	3.45	38	1 1/2	36	1 7/16

## FG Female Grease



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
E04-08FG	1/4	1/2 - 27	23.5	0.92	44.0	1.73	19	3/4
E06-08FG	3/8	1/2 - 27	23.5	0.92	48.0	1.89	19	3/4

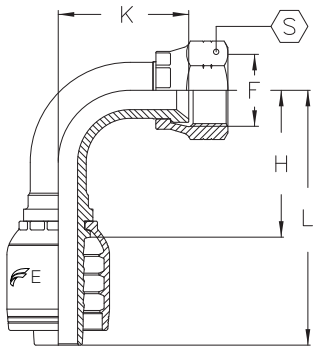
## FJIS JIS Female Swivel (Toyota)





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	
E04-04FJIS	1/4	1/4 - 19	24.0	0.94	52.0	2.05	19	3/4	14	9/16
E06-06FJIS	3/8	3/8 - 19	26.0	1.02	57.0	2.24	22	7/8	17	11/16
E08-08FJIS	1/2	1/2 - 14	30.0	1.18	63.0	2.48	27	1 1/16	22	7/8
E10-10FJIS	5/8	5/8 - 14	35.0	1.38	71.0	2.80	30	1 7/16	30	1 7/16
E12-12FJIS	3/4	3/4 - 14	36.0	1.42	76.0	2.99	32	1 1/4	27	1 1/16
E16-16FJIS	1	1 - 11	40.0	1.57	91.0	3.58	41	1 5/8	32	1 1/4
E20-20FJIS	1 1/4	1 1/4 - 11	46.0	1.81	104.0	4.69	50	2	46	1 13/16
E24-24FJIS	1 1/2	1 1/2 - 11	47.0	1.85	123.0	4.84	70	2 3/4	50	2

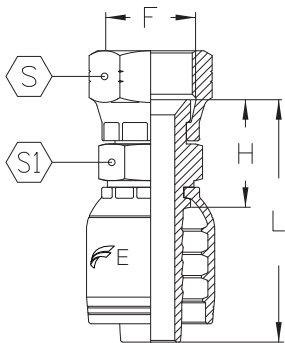
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.




## FJIS90 JIS Female Swivel (Toyota) - 90° Elbow



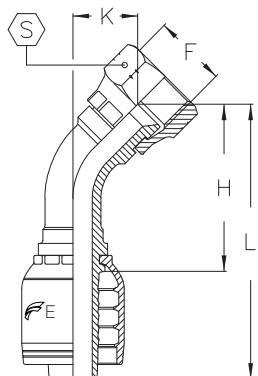
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FJIS90	1/4	1/4 - 19	27.0	1.06	53.0	2.08	27	1.06	19	3/4
E06-06FJIS90	3/8	3/8 - 19	30.0	1.18	63.0	2.48	29	1.14	22	7/8
E08-08FJIS90	1/2	1/2 - 14	41.0	1.61	70.0	2.75	38	1.49	27	1 1/16
E12-12FJIS90	3/4	3/4 - 14	65.0	2.56	109.0	4.29	57	2.24	32	1 1/4
E16-16FJIS90	1	1 - 11	71.0	2.80	118	4.65	66	2.60	41	1 5/8



## FK Komatsu Female Swivel



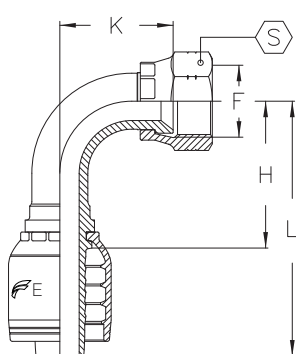
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
E04-14FK	1/4	M14 x 1.5	24.0	0.94	52.5	2.06	19	3/4	19	3/4
E04-18FK	1/4	M18 x 1.5	24.0	0.94	52.5	2.06	24	1	19	3/4
E06-14FK	3/8	M14 x 1.5	24.0	0.94	54.5	2.14	19	3/4	19	3/4
E06-16FK	3/8	M16 x 1.5	22.2	0.87	52.7	2.07	22	7/8	19	3/4
E06-18FK	3/8	M18 x 1.5	24.3	0.95	54.8	2.15	24	1	19	3/4
E06-20FK	3/8	M20 x 1.5	29.0	1.14	59.0	2.32	25.4	1	22	7/8
E06-22FK	3/8	M22 x 1.5	29.0	1.14	59.0	2.32	27	1 1/16	22	7/8
E08-18FK	1/2	M18 x 1.5	26.0	1.02	59.0	2.32	24	1	22	7/8
E08-22FK	1/2	M22 x 1.5	26.5	1.04	59.5	2.34	27	1 1/16	27	1 1/16
E08-24FK	1/2	M24 x 1.5	29.9	1.17	62.9	2.47	32	1 1/4	32	1 1/4
E10-24FK	5/8	M24 x 1.5	29.9	1.17	65.9	2.59	32	1 1/4	32	1 1/4
E12-24FK	3/4	M24 x 1.5	31.0	1.22	71.5	2.81	32	1 1/4	32	1 1/4
E12-30FK	3/4	M30 x 1.5	33.0	1.29	74.0	2.91	36	1 7/16	36	1 7/16
E12-33FK	3/4	M33 x 1.5	34.5	1.35	76.5	3.01	41	1 5/8	36	1 7/16
E16-33FK	1	M33 x 1.5	34.5	1.35	89.5	3.52	41	1 5/8	36	1 7/16
E16-36FK	1	M36 x 1.5	39.0	1.53	90.5	3.56	46	1 13/16	41	1 5/8
E20-36FK	1 1/4	M36 x 1.5	40.0	1.57	97.5	3.84	46	1 13/16	41	1 5/8
E24-42FK	1 1/2	M42 x 1.5	42.5	1.67	107.0	4.21	50	2	46	1 7/16



## FK45 Komatsu Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-14FK45	1/4	M14 x 1.5	34.0	1.33	62.0	2.44	16.0	0.62	19	3/4
E04-18FK45	1/4	M18 x 1.5	33.0	1.29	61.0	2.40	16.0	0.62	24	1
E06-18FK45	3/8	M18 x 1.5	41.0	1.61	71.5	2.81	19.0	0.74	24	1
E08-22FK45	1/2	M22 x 1.5	53.5	2.10	86.5	3.40	25.0	0.98	27	1 1/16
E10-24FK45	5/8	M24 x 1.5	54.0	2.12	89.8	3.53	26.0	1.02	32	1 1/4
E12-30FK45	3/4	M30 x 1.5	59.5	2.34	100.0	3.93	28.0	1.10	36	1 7/16

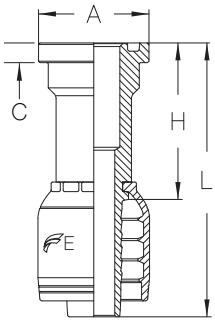
## FK90 Komatsu Female Swivel - 90° Elbow




Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-14FK90	1/4	M14 x 1.5	25.0	0.98	53.0	2.08	28.0	1.10	19	3/4
E04-16FK90	1/4	M16 x 1.5	29.0	1.14	54.0	2.12	29.0	1.14	19	3/4
E04-18FK90	1/4	M18 x 1.5	24.0	0.94	52.0	2.04	30.0	1.18	24	1
E06-18FK90	3/8	M18 x 1.5	31.0	1.22	61.5	2.42	37.0	1.45	24	1
E08-22FK90	1/2	M22 x 1.5	41.0	1.61	74.0	2.91	48.0	1.88	27	1 1/16
E10-24FK90	5/8	M24 x 1.5	42.0	1.65	77.8	3.06	50.0	1.96	32	1 1/4
E12-30FK90	3/4	M30 x 1.5	48.5	1.90	89.0	3.50	57.0	2.24	36	1 7/16

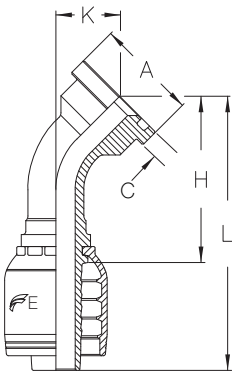
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## FLK Komatsu Flange



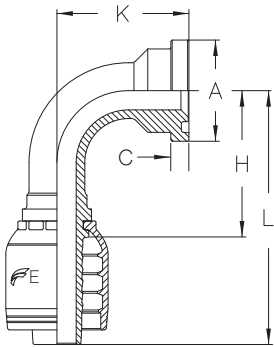
Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
E10-10FLK	5/8	6.0	34.2	1.34	49.3	1.94	85.3	3.36	


## FLK45 Komatsu Flange - 45° Elbow



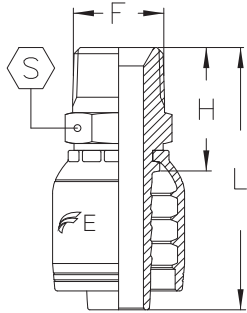
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
E10-10FLK45	5/8	6.0	34.2	1.34	70.0	2.75	110	4.33	30.0	1.18	



## FLK90 Komatsu Flange - 90° Elbow



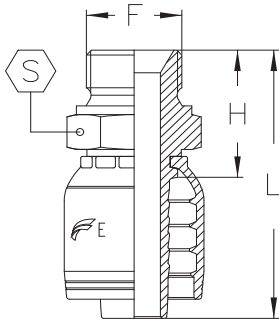
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
E10-10FLK90-044	5/8	6.0	34.2	1.34	49.0	1.93	85.0	3.35	44.0	1.93	



## MBSPT BSPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E04-02MBSPT	1/4	1/8 - 28	21.0	0.83	49.0	1.93	12	1/2
E04-04MBSPT	1/4	1/4 - 19	25.0	0.98	53.0	2.09	15	5/8
E04-06MBSPT	1/4	3/8 - 19	26.0	1.02	54.0	2.12	19	3/4
E06-06MBSPT	3/8	3/8 - 19	27.0	1.06	57.0	2.24	19	3/4
E08-08MBSPT	1/2	1/2 - 14	33.0	1.30	66.0	2.60	22	7/8
E12-12MBSPT	3/4	3/4 - 14	36.0	1.41	77.0	3.03	27	1 1/16
E16-16MBSPT	1	1 - 11	43.0	1.69	94.0	3.70	36	1 7/16

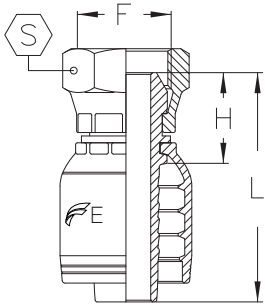
## MBSPP MSBPP Male





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E03-02MBSPP	3/16	1/8 - 28	20.0	0.79	45.0	1.77	14	9/16
E04-02MBSPP	1/4	1/8 - 28	20.0	0.79	48.0	1.89	14	9/16
E04-04MBSPP	1/4	1/4 - 19	25.0	0.98	53.0	2.09	19	3/4
E04-06MBSPP	1/4	3/8 - 19	27.0	1.06	55.0	2.16	22	7/8
E04-08MBSPP	1/4	1/4 - 19	32.0	1.26	60.0	2.36	27	1 1/16
E06-04MBSPP	3/8	1/4 - 19	25.0	0.98	55.0	2.16	19	3/4
E06-06MBSPP	3/8	3/8 - 19	27.0	1.06	58.0	2.28	22	7/8
E06-08MBSPP	3/8	1/2 - 14	32.0	1.26	62.0	2.44	27	1 1/16
E08-06MBSPP	1/2	3/8 - 19	28.0	1.10	61.0	2.40	22	7/8
E08-08MBSPP	1/2	1/2 - 14	33.0	1.30	66.0	2.60	27	1 1/16
E08-10MBSPP	1/2	5/8 - 14	35.0	1.38	68.0	2.68	30	1 7/16
E08-12MBSPP	1/2	3/4 - 14	36.0	1.42	69.0	2.72	32	1 1/4
E10-10MBSPP	5/8	5/8 - 14	35.0	1.38	71.0	2.79	30	1 7/16
E10-12MBSPP	5/8	3/4 - 14	36.0	1.42	72.0	2.83	32	1 1/4
E12-12MBSPP	3/4	3/4 - 14	37.0	1.46	77.0	3.03	32	1 1/4
E12-16MBSPP	3/4	1 - 11	42.0	1.65	82.0	3.23	41	1 5/8
E16-16MBSPP	1	1 - 11	43.0	1.69	94.0	3.70	41	1 5/8
E20-20MBSPP	1 1/4	1 1/4 - 11	47.0	1.85	105.0	4.13	50	2
E24-24MBSPP	1 1/2	1 1/2 - 11	50.0	1.97	115.0	4.52	55	2 3/16
E32-32MBSPP	2	2 - 11	56.0	2.20	126.0	4.96	70	2 3/4

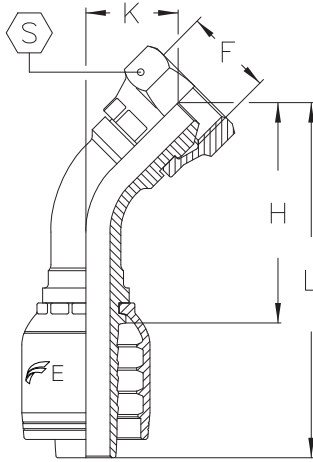
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## FBSPP BSPP Female Swivel



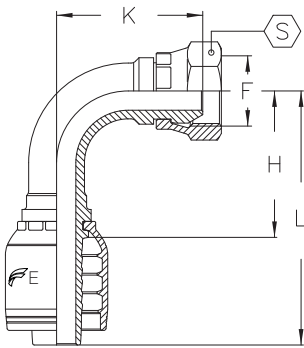
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
E03-02FBSPP	3/16	1/8 - 28	16.0	0.63	41.0	1.61	14	9/16
E03-04FBSPP	3/16	1/4 - 19	19.0	0.75	44.0	1.73	19	3/4
E04-02FBSPP	1/4	1/8 - 28	17.0	0.67	45.0	1.77	14	9/16
E04-04FBSPP	1/4	1/4 - 19	19.0	0.75	47.0	1.85	19	3/4
E04-06FBSPP	1/4	3/8 - 19	22.0	0.87	50.0	1.97	22	7/8
E06-04FBSPP	3/8	1/4 - 19	19.0	0.75	49.0	1.93	19	3/4
E06-06FBSPP	3/8	3/8 - 19	21.0	0.83	51.0	2.01	22	7/8
E06-08FBSPP	3/8	1/2 - 14	23.0	0.90	54.0	2.12	27	1 1/16
E08-06FBSPP	1/2	3/8 - 19	22.0	0.87	56.0	2.20	22	7/8
E08-08FBSPP	1/2	1/2 - 14	23.0	0.90	56.0	2.20	27	1 1/16
E08-10FBSPP	1/2	5/8 - 14	24.0	0.94	57.0	2.24	30	1 7/16
E08-12FBSPP	1/2	3/4 - 14	27.0	1.06	60.0	2.36	32	1 1/4
E10-10FBSPP	5/8	5/8 - 14	23.0	0.90	59.0	2.32	30	1 7/16
E10-12FBSPP	5/8	3/4 - 14	27.0	1.06	63.0	2.48	32	1 1/4
E12-12FBSPP	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
E12-16FBSPP	3/4	1 - 11	30.0	1.18	70.0	2.75	41	1 5/8
E16-12FBSPP	1	3/4 - 14	28.0	1.10	79.0	3.11	32	1 1/4
E16-16FBSPP	1	1 - 11	30.0	1.18	81.0	3.19	41	1 5/8
E20-20FBSPP	1 1/4	1 1/4 - 11	34.0	1.34	92.0	3.62	50	2
E24-24FBSPP	1 1/2	1 1/2 - 11	34.0	1.34	99.0	3.90	55	2 3/16
E32-32FBSPP	2	2 - 11	37.0	1.46	107.0	4.21	70	2 3/4



## FBSPP45 BSPP Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-02FBSPP45	1/4	1/8 - 28	36.0	1.42	64.0	2.52	16.0	0.63	14	9/16
E04-04FBSPP45	1/4	1/4 - 19	37.0	1.46	65.0	2.56	16.0	0.63	19	3/4
E04-06FBSPP45	1/4	3/8 - 19	40.0	1.57	68.0	2.68	19.0	0.75	22	7/8
E06-06FBSPP45	3/8	3/8 - 19	42.0	1.65	73.0	2.87	19.0	0.75	22	7/8
E06-08FBSPP45	3/8	1/2 - 14	44.0	1.73	75.0	2.95	21.0	0.83	27	1 1/16
E08-08FBSPP45	1/2	1/2 - 14	49.0	1.93	82.0	3.23	22.0	0.87	27	1 1/16
E08-10FBSPP45	1/2	5/8 - 14	49.0	1.93	82.0	3.23	22.0	0.87	30	1 7/16
E10-10FBSPP45	5/8	5/8 - 14	54.0	2.12	90.0	3.54	24.0	0.94	30	1 7/16
E10-12FBSPP45	5/8	3/4 - 14	57.0	2.24	93.0	3.66	26.0	1.02	32	1 1/4
E12-12FBSPP45	3/4	3/4 - 14	66.0	2.60	106.0	4.17	28.0	1.10	32	1 1/4
E16-16FBSPP45	1	1 - 11	84.0	3.31	135.0	5.31	36.0	1.42	41	1 5/8
E20-20FBSPP45	1 1/4	1 1/4 - 11	100.0	3.94	157.0	6.18	43.0	1.69	50	2
E24-24FBSPP45	1 1/2	1 1/2 - 11	116.0	4.57	180.0	7.09	49.0	1.93	55	2 3/16
E32-32FBSPP45	2	2 - 11	157.0	6.18	227.0	8.94	69.0	2.72	70	2 3/4

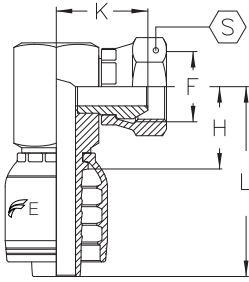
## FBSPP90 BSPP Female Swivel - 90° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-02FBSPP90	1/4	1/8 - 28	26.0	1.02	54	2.12	28.0	1.10	14	9/16
E04-04FBSPP90	1/4	1/4 - 19	26.0	1.02	54	2.12	28.0	1.10	19	3/4
E04-06FBSPP90	1/4	3/8 - 19	26.0	1.02	54	2.12	32.0	1.26	22	7/8
E06-06FBSPP90	3/8	3/8 - 19	31.0	1.22	61	2.40	35.0	1.38	22	7/8
E06-08FBSPP90	3/8	1/2 - 14	31.0	1.22	61	2.40	38.0	1.50	27	1 1/16
E08-08FBSPP90	1/2	1/2 - 14	37.0	1.46	70	2.75	42.0	1.65	27	1 1/16
E08-10FBSPP90	1/2	5/8 - 14	37.0	1.46	70	2.75	43.0	1.69	30	1 7/16
E10-10FBSPP90	5/8	5/8 - 14	45.0	1.77	80	3.15	46.0	1.81	30	1 7/16
E10-12FBSPP90	5/8	3/4 - 14	45.0	1.77	80	3.15	50.0	1.97	32	1 1/4
E12-12FBSPP90	3/4	3/4 - 14	54.0	2.12	95	3.74	56.0	2.20	32	1 1/4
E12-16FBSPP90	3/4	1 - 11	54.0	2.12	95	3.74	59.0	2.32	41	1 5/8
E16-12FBSPP90	1	3/4 - 14	70.0	2.76	121	4.76	75.0	2.95	32	1 1/4
E16-16FBSPP90	1	1 - 11	70.0	2.76	121	4.76	72.0	2.83	41	1 5/8
E20-20FBSPP90	1 1/4	1 1/4 - 11	84.0	3.31	142	5.59	87.0	3.43	50	2
E24-24FBSPP90	1 1/2	1 1/2 - 11	100.0	3.94	165	6.50	100.0	3.94	55	2 3/16
E32-32FBSPP90	2	2 - 11	134.0	5.28	204	8.03	141.0	5.55	70	2 3/4

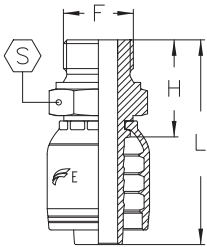
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FBSPP90B BSPP Female Swivel - 90° Block Elbow



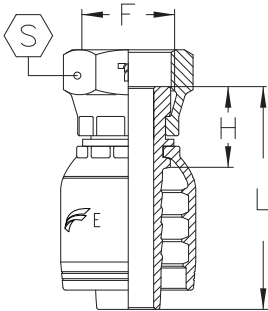
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
E04-04FBSPP90B	¼	¼ - 19	18.0	0.71	46.0	1.81	23.0	0.90	19	¾
E06-06FBSPP90B	⅜	⅜ - 19	21.0	0.83	52.0	2.05	26.0	1.02	22	⅞
E08-08FBSPP90B	½	½ - 14	24.0	0.94	57.0	2.24	28.0	1.10	27	1 ⅛
E12-12FBSPP90B	¾	¾ - 14	31.0	1.22	72.0	2.83	35.0	1.38	32	1 ¼
E16-16FBSPP90B	1	1 - 11	38.0	1.50	89.0	3.50	41.0	1.61	41	1 ⅝



## MBSPFF BSP Male Flat Face



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
E04-04MBSPFF	¼	¼ - 19	27.0	1.06	55.0	2.16	22	⅞
E06-06MBSPFF	⅜	⅜ - 19	27.0	1.06	58.0	2.28	22	⅞
E06-08MBSPFF	⅜	½ - 14	32.0	1.26	62.0	2.44	27	1 ⅛
E08-08MBSPFF	½	½ - 14	33.0	1.30	66.0	2.60	27	1 ⅛
E12-12MBSPFF	¾	¾ - 14	37.0	1.46	77.0	3.03	32	1 ¼
E12-16MBSPFF	¾	1 - 11	42.0	1.65	84.0	3.23	41	1 ⅝
E16-16MBSPFF	1	1 - 11	43.0	1.69	94.0	3.70	41	1 ⅝

## FBSPPF BSP Female Flat Face Swivel

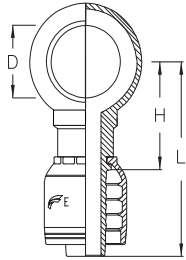



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
E04-04FBSPPF	¼	¼ - 19	15	0.59	43	1.69	19	¾
E04-06FBSPPF	¼	⅜ - 19	18	0.71	46	1.81	22	⅞
E06-06FBSPPF	⅜	⅜ - 19	17	0.67	47	1.85	22	⅞
E06-08FBSPPF	⅜	½ - 14	19	0.75	49	1.93	27	1 ⅛
E08-08FBSPPF	½	½ - 14	19	0.75	52	2.05	27	1 ⅛
E08-12FBSPPF	½	¾ - 14	23	0.90	56	2.20	32	1 ¼
E10-10FBSPPF	⅝	⅝ - 14	20	0.79	56	2.20	30	1 ⅛
E12-12FBSPPF	¾	¾ - 14	22	0.87	63	2.48	32	1 ¼

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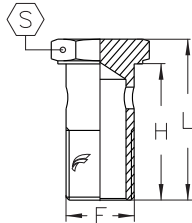



## BJBSP BSP Banjo



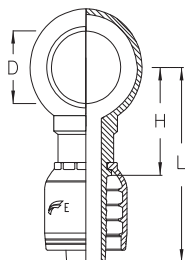
Part Number		Bolt Size	D		H		L		T	
	in		mm	in	mm	in	mm	in	mm	in
E03-02BJBSP	3/16	1/8	10.2	0.40	20.0	0.79	45.0	1.72	10.0	0.39
E04-02BJBSP	1/4	1/8	10.2	0.40	23.0	0.90	51.0	2.01	10.0	0.39
E04-04BJBSP	1/4	1/4	13.3	0.52	23.0	0.90	51.0	2.01	14.0	0.55
E04-06BJBSP	1/4	3/8	16.8	0.66	26.5	1.04	54.5	2.14	17.5	0.69
E06-04BJBSP	3/8	1/4	13.3	0.52	24.0	0.94	54.5	2.14	14.0	0.55
E06-06BJBSP	3/8	3/8	16.8	0.66	24.0	0.94	54.5	2.14	17.5	0.69
E06-08BJBSP	3/8	1/2	21.0	0.83	32.0	1.26	62.5	2.46	23.0	0.90
E08-06BJBSP	1/2	3/8	16.8	0.66	26.5	1.04	59.5	2.34	17.5	0.69
E08-08BJBSP	1/2	1/2	21.0	0.83	28.5	1.12	61.5	2.42	23.0	0.90
E12-12BJBSP	3/4	3/4	26.5	1.04	37.5	1.48	78.0	3.07	29.5	1.16
E16-16BJBSP	1	1	33.5	1.32	49.0	1.93	100.0	3.94	37.5	1.48


## BJBSPBT BSP Banjo Bolt



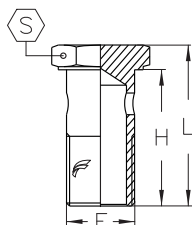
Part Number	F	H		L			
		mm	in	mm	in	mm	in
02BJBSPBT	1/8 - 28	26.0	1.02	21.5	0.85	14	9/16
04BJBSPBT	1/4 - 19	34.3	1.35	29.5	1.16	19	3/4
06BJBSPBT	3/8 - 19	40.5	1.59	34.0	1.34	22	7/8
08BJBSPBT	1/2 - 14	46.0	1.81	36.0	1.42	27	1 1/16
10BJBSPBT	5/8 - 14	55.0	2.16	45.5	1.79	30	1 7/16
12BJBSPBT	3/4 - 14	56.0	2.20	48.0	1.89	32	1 1/4
16BJBSPBT	1 - 11	69.0	2.72	59.0	2.32	41	1 5/8

## BJM Metric Banjo



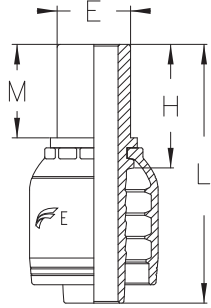
Part Number		Bolt Size	D		H		L		T	
	in		mm	in	mm	in	mm	in	mm	in
E03-10BJM	3/16	M10	10.2	0.40	20.0	0.79	45.0	1.77	10.0	7/16
E04-10BJM	1/4	M10	10.2	0.40	23.0	0.91	51.0	2.01	10.0	7/16
E04-12BJM	1/4	M12	12.1	0.48	23.0	0.90	51.0	2.01	12.0	1/2
E04-14BJM	1/4	M14	14.2	0.56	23.0	0.90	51.0	2.01	14.0	9/16
E06-12BJM	3/8	M12	12.1	0.48	20.2	0.79	49.8	1.96	12.0	1/2
E06-14BJM	3/8	M14	14.2	0.56	24.0	0.94	54.5	2.14	14.0	9/16
E06-16BJM	3/8	M16	16.2	0.64	24.0	0.94	54.5	2.14	17.5	1 1/16
E06-18BJM	3/8	M18	18.2	0.72	27.0	1.06	57.5	2.26	20.5	1 3/16
E08-18BJM	1/2	M18	18.2	0.72	28.1	1.11	61.1	2.40	20.5	1 3/16
E08-20BJM	1/2	M20	20.2	0.80	28.5	1.12	61.5	2.42	23.0	7/8
E08-22BJM	1/2	M22	22.2	0.87	28.5	1.12	61.5	2.42	22.5	57/64
E10-22BJM	5/8	M22	22.2	0.87	27.2	1.07	63.0	2.48	22.5	57/64
E12-26BJM	3/4	M26	26.5	1.04	41.5	1.63	78.0	3.07	29.5	1 5/32


## BJMBT Metric Banjo Bolt



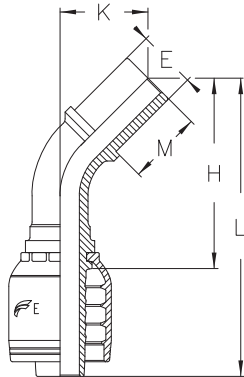
Part Number	F	H		L		S	
		mm	in	mm	in	mm	in
10BJMBT	M10 x 1.0	21.5	0.85	26.0	1.02	14	9/16
12BJMBT	M12 x 1.5	25.5	1.00	31.0	1.22	17	1 1/16
14BJMBT	M14 x 1.5	30.5	1.20	37.5	1.48	19	3/4
16BJMBT	M16 x 1.5	32.5	1.28	40.0	1.57	22	7/8
18BJMBT	M18 x 1.5	36.5	1.44	44.0	1.73	24	1
20BJMBT	M20 x 1.5	39.5	1.55	48.0	1.89	27	1 1/16
22BJMBT	M22 x 1.5	41.5	1.63	50.0	1.97	28	1 1/8
26BJMBT	M26 x 1.5	48.5	1.91	58.0	2.28	32	1 1/4


## SPML Metric Standpipe Light



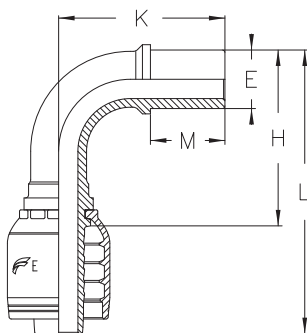
Part Number		E		H		M		L	
	in	mm	in	mm	in	mm	in	mm	in
E04-06SPML	1/4	6	0.24	27.5	1.08	21	0.83	55.0	2.16
E04-08SPML	1/4	8	0.31	29.5	1.16	23	0.90	58.0	2.28
E04-10SPML	1/4	10	0.39	31.5	1.24	25	0.98	60.0	2.36
E06-10SPML	3/8	10	0.39	28.5	1.12	22	0.87	59.0	2.32
E06-12SPML	3/8	12	0.48	31.5	1.24	25	0.98	62.0	2.44
E08-12SPML	1/2	12	0.48	32.5	1.28	25	0.98	65.5	2.58
E08-15SPML	1/2	15	0.59	31.5	1.24	24	0.94	64.5	2.54
E08-16SPML	1/2	16	0.63	36.5	1.44	29	1.14	69.5	2.74


## SPML45 Metric Standpipe Light - 45° Elbow



Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
E04-06SPML45	1/4	6	0.24	48.0	1.89	21	0.83	77.0	3.03	24.0	0.94
E04-08SPML45	1/4	8	0.31	48.0	1.89	23	0.90	76.5	3.01	24.0	0.94
E04-10SPML45	1/4	10	0.39	49.5	1.95	25	0.98	78.0	3.07	25.5	1.00
E06-10SPML45	3/8	10	0.39	62.0	2.44	22	0.87	92.5	3.64	27.5	1.08
E06-12SPML45	3/8	12	0.48	62.5	2.46	25	0.98	93.0	3.66	28.5	1.12
E08-15SPML45	1/2	15	0.59	70.5	2.77	24	0.94	103.5	4.07	31.0	1.22
E08-16SPML45	1/2	16	0.63	74.0	2.91	29	1.14	107.0	4.21	34.5	1.36

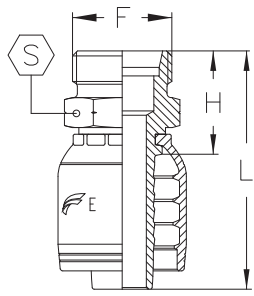
## SPML90 Metric Standpipe Light - 90° Elbow





Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
E04-06SPML90	1/4	6	0.24	24	0.94	21	0.83	52	2.05	39.0	1.53
E04-08SPML90	1/4	8	0.31	24	0.94	23	0.90	52	2.05	39.0	1.53
E04-10SPML90	1/4	10	0.39	24	0.94	25	0.98	52	2.05	41.0	1.61
E06-10SPML90	3/8	10	0.39	34	1.34	22	0.87	64	2.52	48.0	1.89
E06-12SPML90	3/8	12	0.48	34	1.34	25	0.98	64	2.52	49.0	1.93
E08-15SPML90	1/2	15	0.59	41	1.61	24	0.94	74	2.91	53.5	2.11
E08-16SPML90	1/2	16	0.63	41	1.61	29	1.14	74	2.91	58.5	2.30

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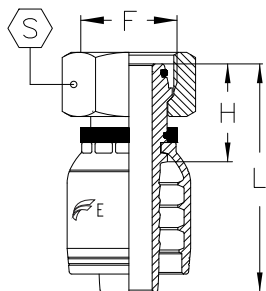
## MML Metric 24° Male Light - (CEL)





Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
E04-12MML	1/4	M12 x 1.5	L6	21.0	0.83	49.0	1.93	12	1/2
E04-14MML	1/4	M14 x 1.5	L8	21.0	0.83	49.0	1.93	14	9/16
E04-16MML	1/4	M16 x 1.5	L10	23.0	0.90	51.0	2.01	17	11/16
E04-18MML	1/4	M18 x 1.5	L12	23.0	0.90	51.0	2.01	19	3/4
E05-16MML	5/16	M16 x 1.5	L10	23.0	0.90	51.0	2.01	17	11/16
E05-18MML	5/16	M18 x 1.5	L12	23.0	0.90	51.0	2.01	19	3/4
E06-16MML	3/8	M16 x 1.5	L10	23.0	0.90	53.0	2.09	17	11/16
E06-18MML	3/8	M18 x 1.5	L12	23.0	0.90	53.0	2.09	19	3/4
E06-22MML	3/8	M22 x 1.5	L15	25.0	0.98	56.0	2.20	22	7/8
E08-18MML	1/2	M18 x 1.5	L12	25.0	0.98	58.0	2.28	19	3/4
E08-22MML	1/2	M22 x 1.5	L15	26.0	1.02	59.0	2.32	22	7/8
E08-26MML	1/2	M26 x 1.5	L18	28.0	1.10	61.0	2.40	27	1 1/16
E10-26MML	5/8	M26 x 1.5	L18	28.0	1.10	64.0	2.52	27	1 1/16
E10-30MML	5/8	M30 x 2.0	L22	30.0	1.18	66.0	2.60	30	1 7/16
E12-26MML	3/4	M26 x 1.5	L18	29.0	1.14	70.0	2.75	27	1 1/16
E12-30MML	3/4	M30 x 2.0	L22	31.0	1.22	72.0	2.83	30	1 7/16
E16-36MML	1	M36 x 2.0	L28	35.0	1.38	86.0	3.38	36	1 7/16
E20-45MML	1 1/4	M45 x 2.0	L35	40.0	1.57	97.0	3.82	46	1 3/16
E24-52MML	1 1/2	M54 x 2.0	L42	42.0	1.65	106.0	4.17	55	2 3/16

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

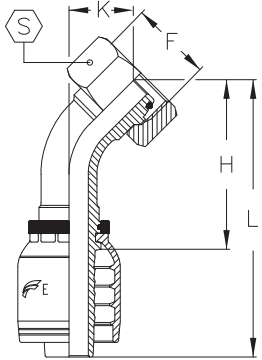
## FML Metric 24° Female Light - (DKOL)





Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
E03-12FML	3/16	M12 x 1.5	L6	21.0	0.83	46.0	1.81	14	9/16
E04-12FML	1/4	M12 x 1.5	L6	23.0	0.90	51.0	2.01	17	11/16
E04-14FML	1/4	M14 x 1.5	L8	22.0	0.87	50.0	1.97	17	11/16
E04-16FML	1/4	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	3/4
E04-18FML	1/4	M18 x 1.5	L12	24.0	0.94	52.0	2.05	22	7/8
E05-16FML	5/16	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	3/4
E05-18FML	5/16	M18 x 1.5	L12	24.0	0.94	52.0	2.05	22	7/8
E06-16FML	3/8	M16 x 1.5	L10	23.0	0.90	54.0	2.12	19	3/4
E06-18FML	3/8	M18 x 1.5	L12	24.0	0.94	54.0	2.12	22	7/8
E06-22FML	3/8	M22 x 1.5	L15	24.0	0.94	54.0	2.12	27	1 1/16
E08-22FML	1/2	M22 x 1.5	L15	24.0	0.94	57.0	2.24	27	1 1/16
E08-26FML	1/2	M26 x 1.5	L18	26.0	1.02	59.0	2.32	32	1 1/4
E10-26FML	5/8	M26 x 1.5	L18	27.0	1.06	62.0	2.44	32	1 1/4
E10-30FML	5/8	M30 x 2.0	L22	28.0	1.10	64.0	2.52	36	1 7/16
E12-26FML	3/4	M26 x 1.5	L18	34.0	1.34	75.0	2.95	32	1 1/4
E12-30FML	3/4	M30 x 2.0	L22	31.0	1.22	71.0	2.79	36	1 7/16
E16-36FML	1	M36 x 2.0	L28	32.0	1.26	83.0	3.27	41	1 5/8
E20-45FML	1 1/4	M45 x 2.0	L35	36.0	1.42	102.0	3.70	50	2
E24-52FML	1 1/2	M52 x 2.0	L42	37.0	1.46	183.0	4.02	60	2 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

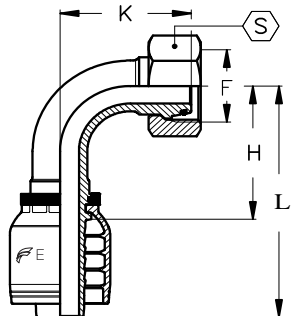
## FML45 Metric 24° Female Light - 45° Elbow (DKOL)





Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
E04-12FML45	1/4	M12 x 1.5	L6	35.0	1.38	63.0	2.48	14.0	0.55	17	11/16
E04-14FML45	1/4	M14 x 1.5	L8	36.0	1.42	64.0	2.52	14.0	0.55	17	11/16
E04-16FML45	1/4	M16 x 1.5	L10	38.0	1.50	66.0	2.60	16.0	0.63	19	3/4
E04-18FML45	1/4	M18 x 1.5	L12	39.0	1.53	67.0	2.64	17.0	0.67	22	7/8
E05-16FML45	5/16	M16 x 1.5	L10	39.0	1.53	67.0	2.64	17.0	0.67	19	3/4
E05-18FML45	5/16	M18 x 1.5	L12	39.0	1.53	67.0	2.64	18.0	0.71	22	7/8
E06-16FML45	3/8	M16 x 1.5	L10	39.0	1.53	69.0	2.72	16.0	0.63	19	3/4
E06-18FML45	3/8	M18 x 1.5	L12	40.0	1.57	71.0	2.79	18.0	0.71	22	7/8
E06-22FML45	3/8	M22 x 1.5	L15	42.0	1.65	72.0	2.83	19.0	0.75	27	1 1/16
E08-22FML45	1/2	M22 x 1.5	L15	46.0	1.81	79.0	3.11	19.0	0.75	27	1 1/16
E08-26FML45	1/2	M26 x 1.5	L18	47.0	1.85	80.0	3.15	21.0	0.83	32	1 1/4
E10-26FML45	5/8	M26 x 1.5	L18	53.0	2.09	89.0	3.50	22.0	0.87	32	1 1/4
E10-30FML45	5/8	M30 x 2.0	L22	54.0	2.12	90.0	3.54	23.0	0.90	36	1 7/16
E12-26FML45	3/4	M26 x 1.5	L18	66.0	2.60	107.0	4.21	29.0	1.14	32	1 1/4
E12-30FML45	3/4	M30 x 2.0	L22	62.0	2.44	103.0	4.05	25.0	0.98	36	1 7/16
E16-36FML45	1	M36 x 2.0	L28	80.0	3.15	131.0	5.16	31.0	1.22	41	1 5/8
E20-45FML45	1 1/4	M45 x 2.0	L35	96.0	3.78	154.0	6.06	40.0	1.57	50	2
E24-52FML45	1 1/2	M52 x 2.0	L42	115.4	4.53	179.0	7.05	48.0	1.89	60	2 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FML90 Metric 24° Female Light - 90° Elbow (DKOL)

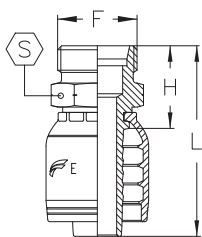


Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
E04-12FML90	1/4	M12 x 1.5	L6	26.0	1.02	53.0	2.09	26.0	1.02	17	11/16
E04-14FML90	1/4	M14 x 1.5	L8	29.0	1.14	57.0	2.24	29.0	1.14	17	11/16
E04-16FML90	1/4	M16 x 1.5	L10	29.0	1.14	57.0	2.24	30.0	1.18	19	3/4
E04-18FML90	1/4	M18 x 1.5	L12	29.0	1.14	57.0	2.24	32.0	1.26	22	7/8
E05-16FML90	5/16	M16 x 1.5	L10	31.0	1.22	59.0	2.32	33.0	1.30	19	3/4
E05-18FML90	5/16	M18 x 1.5	L12	28.0	1.10	56.0	2.20	32.0	1.26	22	7/8
E06-16FML90	3/8	M16 x 1.5	L10	31.0	1.22	61.0	2.40	31.0	1.22	19	3/4
E06-18FML90	3/8	M18 x 1.5	L12	31.0	1.22	61.0	2.40	33.0	1.30	22	7/8
E06-22FML90	3/8	M22 x 1.5	L15	31.0	1.22	61.0	2.40	35.0	1.38	27	1 1/16
E08-22FML90	1/2	M22 x 1.5	L15	37.0	1.46	70.0	2.75	38.0	1.50	27	1 1/16
E08-26FML90	1/2	M26 x 1.5	L18	37.0	1.46	70.0	2.75	40.0	1.57	32	1 1/4
E10-26FML90	5/8	M26 x 1.5	L18	44.0	1.73	80.0	3.15	45.0	1.77	32	1 1/4
E10-30FML90	5/8	M30 x 2.0	L22	44.0	1.73	80.0	3.15	47.0	1.85	36	1 7/16
E12-30FML90	3/4	M30 x 2.0	L22	54.0	2.12	94.0	3.70	52.0	2.05	36	1 7/16
E16-36FML90	1	M36 x 2.0	L28	70.0	2.75	121.0	4.76	66.0	2.60	41	1 5/8
E20-45FML90	1 1/4	M45 x 2.0	L35	84.0	3.31	141.0	5.55	83.0	3.27	50	2
E24-52FML90	1 1/2	M52 x 2.0	L42	100.0	3.94	164.0	6.46	100.0	3.94	60	2 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## MMS Metric 24° Male Heavy - (CES)

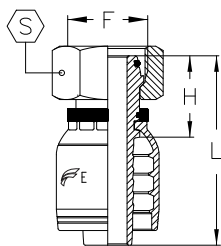
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
E04-14MMS	1/4	M14 x 1.5	S6	23.0	0.90	51.0	2.01	14	9/16
E04-16MMS	1/4	M16 x 1.5	S8	23.0	0.90	51.0	2.01	17	1 1/16
E04-18MMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	3/4
E04-20MMS	1/4	M20 x 1.5	S12	25.0	0.98	53.0	2.09	22	7/8
E05-18MMS	5/16	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	3/4
E05-20MMS	5/16	M20 x 1.5	S12	25.0	0.98	53.0	2.09	22	7/8
E06-18MMS	3/8	M18 x 1.5	S10	24.0	0.94	55.0	2.16	19	3/4
E06-20MMS	3/8	M20 x 1.5	S12	25.0	0.98	56.0	2.20	22	7/8
E06-22MMS	3/8	M22 x 1.5	S14	27.0	1.06	58.0	2.28	22	7/8
E06-24MMS	3/8	M24 x 1.5	S16	31.0	1.22	58.0	2.28	24	1
E08-22MMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	22	7/8
E08-24MMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	24	1
E10-30MMS	5/8	M30 x 2.0	S20	32.0	1.26	68.0	2.68	30	1 7/16
E12-30MMS	3/4	M30 x 2.0	S20	33.0	1.30	74.0	2.91	30	1 7/16
E12-36MMS	3/4	M36 x 2.0	S25	37.0	1.46	78.0	3.07	36	1 7/16
E16-36MMS	1	M36 x 2.0	S25	39.0	1.53	90.0	3.54	36	1 7/16
E16-42MMS	1	M42 x 2.0	S30	43.0	1.72	94.0	3.70	46	1 13/16
E20-42MMS	1 1/4	M42 x 2.0	S30	44.0	1.73	101.0	3.98	46	1 13/16
E20-52MMS	1 1/4	M52 x 2.0	S38	48.0	1.89	105.0	4.13	55	2 3/16
E24-52MMS	1 1/2	M52 x 2.0	S38	48.0	1.89	112.0	4.41	55	2 3/16



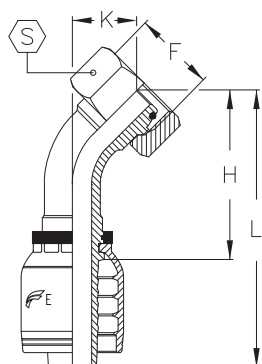




## FMS Metric 24° Female Heavy - (DKOS)

Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
E04-14FMS	1/4	M14 x 1.5	S6	23.0	0.90	51.0	2.01	17	11/16
E04-16FMS	1/4	M16 x 1.5	S8	22.0	0.87	50.0	1.97	19	3/4
E04-18FMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	22	7/8
E04-20FMS	1/4	M20 x 1.5	S12	24.0	0.94	52.0	2.05	24	1
E05-18FMS	5/16	M18 x 1.5	S10	24.0	0.94	52.0	2.05	22	7/8
E05-20FMS	5/16	M20 x 1.5	S12	24.0	0.94	52.0	2.05	24	1
E06-18FMS	3/8	M18 x 1.5	S10	25.0	0.98	55.0	2.16	22	7/8
E06-20FMS	3/8	M20 x 1.5	S12	24.0	0.94	54.0	2.12	24	1
E06-22FMS	3/8	M22 x 1.5	S14	28.0	1.10	58.0	2.28	27	1 1/16
E06-24FMS	3/8	M24 x 1.5	S16	28.0	1.10	58.0	2.28	30	1 7/16
E08-22FMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	27	1 1/16
E08-24FMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	30	1 7/16
E10-30FMS	5/8	M30 x 2.0	S20	33.0	1.30	69.0	2.72	36	1 7/16
E12-30FMS	3/4	M30 x 2.0	S20	36.0	1.42	76.0	2.99	36	1 7/16
E12-36FMS	3/4	M36 x 2.0	S25	38.0	1.50	78.0	3.07	46	1 13/16
E16-36FMS	1	M36 x 2.0	S25	40.0	1.57	91.0	3.58	46	1 13/16
E16-42FMS	1	M42 x 2.0	S30	40.0	1.57	91.0	3.58	50	2
E20-42FMS	1 1/4	M42 x 2.0	S30	41.0	1.61	99.0	3.90	50	2
E20-52FMS	1 1/4	M52 x 2.0	S38	45.0	1.77	103.0	4.06	60	2 3/8
E24-52FMS	1 1/2	M52 x 2.0	S38	46.0	1.81	110.0	4.33	60	2 3/8

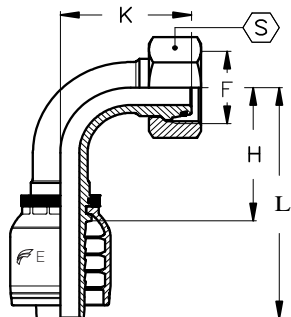




## FMS45 Metric 24° Female Heavy - 45° Elbow (DKOS)



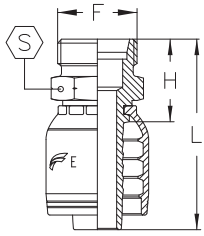
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
E04-14FMS45	1/4	M14 x 1.5	S6	35.0	1.38	63.0	2.48	14.0	0.55	17	11/16
E04-16FMS45	1/4	M16 x 1.5	S8	36.0	1.42	64.0	2.52	14.0	0.55	19	3/4
E04-18FMS45	1/4	M18 x 1.5	S10	38.0	1.50	66.0	2.60	16.0	0.63	22	7/8
E04-20FMS45	1/4	M20 x 1.5	S12	39.0	1.53	67.0	2.64	17.0	0.67	24	1
E05-18FMS45	5/16	M18 x 1.5	S10	39.0	1.53	67.0	2.64	17.0	0.67	22	7/8
E05-20FMS45	5/16	M20 x 1.5	S12	39.0	1.53	67.0	2.64	18.0	0.71	24	1
E06-18FMS45	3/8	M18 x 1.5	S10	40.0	1.57	70.0	2.75	17.0	0.67	22	7/8
E06-20FMS45	3/8	M20 x 1.5	S12	40.0	1.57	71.0	2.79	18.0	0.71	24	1
E06-22FMS45	3/8	M22 x 1.5	S14	42.0	1.65	72.0	2.83	19.0	0.75	27	1 1/16
E08-22FMS45	1/2	M22 x 1.5	S14	46.0	1.81	79.0	3.11	20.0	0.79	27	1 1/16
E08-24FMS45	1/2	M24 x 1.5	S16	47.0	1.85	80.0	3.15	21.0	0.83	30	1 7/16
E10-30FMS45	5/8	M30 x 2.0	S20	56.0	2.20	92.0	3.62	25.0	0.98	36	1 7/16
E12-30FMS45	3/4	M30 x 2.0	S20	64.0	2.52	105.0	4.13	27.0	1.06	36	1 7/16
E12-36FMS45	3/4	M36 x 2.0	S25	64.0	2.52	105.0	4.13	28.0	1.10	46	1 13/16
E16-36FMS45	1	M36 x 2.0	S25	82.0	3.23	133.0	5.24	34.0	1.34	41	1 13/16
E16-42FMS45	1	M42 x 2.0	S30	80.0	3.15	131.0	5.16	31.0	1.22	50	2
E20-42FMS45	1 1/4	M42 x 2.0	S30	96.0	3.78	154.0	6.06	41.0	1.61	50	2
E20-52FMS45	1 1/4	M52 x 2.0	S38	94.0	3.70	152.0	5.98	38.0	1.50	60	2 3/8
E24-52FMS45	1 1/2	M52 x 2.0	S38	115.0	4.53	180.0	7.09	49.0	1.93	60	2 3/8



## FMS90 Metric 24° Female Heavy - 90° Elbow (DKOS)



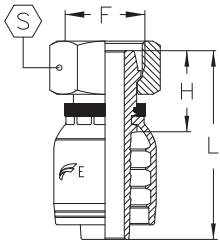
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
E04-14FMS90	1/4	M14 x 1.5	S6	25.0	0.98	53.0	2.09	26.0	1.02	17	11/16
E04-16FMS90	1/4	M16 x 1.5	S8	29.0	1.41	57.0	2.24	29.0	1.14	19	3/4
E04-18FMS90	1/4	M18 x 1.5	S10	29.0	1.41	57.0	2.24	30.0	1.18	22	7/8
E04-20FMS90	1/4	M20 x 1.5	S12	29.0	1.41	57.0	2.24	32.0	1.26	24	1
E05-18FMS90	5/16	M18 x 1.5	S10	31.0	1.22	59.0	2.32	33.0	1.30	22	7/8
E05-20FMS90	5/16	M20 x 1.5	S12	28.0	1.10	56.0	2.20	32.0	1.26	24	1
E06-18FMS90	3/8	M18 x 1.5	S10	30.0	1.18	61.0	2.40	33.0	1.30	22	7/8
E06-20FMS90	3/8	M20 x 1.5	S12	31.0	1.22	61.0	2.40	33.0	1.30	24	1
E06-22FMS90	3/8	M22 x 1.5	S14	34.0	1.34	64.0	2.52	37.0	1.46	27	1 1/16
E08-22FMS90	1/2	M22 x 1.5	S14	39.0	1.53	71.0	2.79	41.0	1.61	27	1 1/16
E08-24FMS90	1/2	M24 x 1.5	S16	39.0	1.53	71.0	2.79	42.0	1.65	30	1 7/16
E10-30FMS90	5/8	M30 x 2.0	S20	44.0	1.73	80.0	3.15	49.0	1.93	36	1 7/16
E12-30FMS90	3/4	M30 x 2.0	S20	54.0	2.12	94.0	3.70	55.0	2.16	36	1 7/16
E12-36FMS90	3/4	M36 x 2.0	S25	54.0	2.12	94.0	3.70	57.0	2.24	46	1 13/16
E16-36FMS90	1	M36 x 2.0	S25	70.0	2.75	121.0	4.76	70.0	2.75	46	1 13/16
E16-42FMS90	1	M42 x 2.0	S30	70.0	2.75	121.0	4.76	66.0	2.60	50	2
E20-42FMS90	1 1/4	M42 x 2.0	S30	84.0	3.31	141.0	5.55	84.0	3.31	50	2
E20-52FMS90	1 1/4	M52 x 2.0	S38	84.0	3.31	141.0	5.55	80.0	3.15	60	2 3/8
E24-52FMS90	1 1/2	M52 x 2.0	S38	100.0	3.94	164.0	5.55	101.0	3.98	60	2 3/8



## MGAZ French Metric Male GAZ



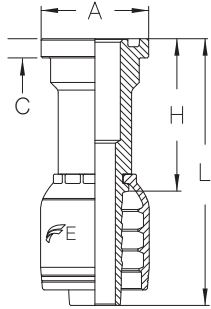
Part Number		T	Tube	H		L			
	in			mm	in	mm	in	mm	in
E06-20MGAZ	3/8	M20 x 1.5	13.25	26.7	1.05	57.2	2.25	22	7/8
E08-24MGAZ	1/2	M24 x 1.5	16.75	30.7	1.20	63.7	2.50	27	1 1/16
E10-30MGAZ	5/8	M30 x 1.5	21.25	31.2	1.22	67.2	2.64	32	1 1/4
E12-30MGAZ	3/4	M30 x 1.5	21.25	31.7	1.24	73.2	2.88	32	1 1/4
E12-36MGAZ	3/4	M36 x 1.5	26.75	31.7	1.24	73.2	2.88	36	1 3/16
E16-45MGAZ	1	M45 x 1.5	33.50	37.2	1.46	92.2	3.62	46	1 3/16


## FGAZ French Metric Female GAZ



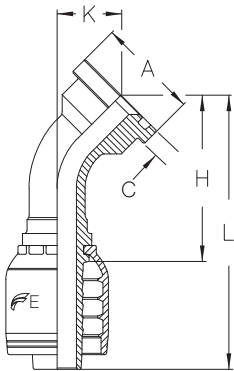
Part Number		T	Tube	H		L			
	in			mm	in	mm	in	mm	in
E06-20FGAZ	3/8	M20 x 1.5	13.25	23.8	0.93	54.3	2.13	24	1
E06-24FGAZ	3/8	M24 x 1.5	16.75	25.0	0.98	58.0	2.28	30	1 1/16
E08-24FGAZ	1/2	M24 x 1.5	16.75	27.3	1.07	60.3	2.37	30	1 1/16
E10-30FGAZ	5/8	M30 x 1.5	21.25	30	1.18	66	2.59	36	1 1/16
E12-30FGAZ	3/4	M30 x 1.5	21.25	30.6	1.20	71.6	2.81	36	1 1/16
E12-36FGAZ	3/4	M36 x 1.5	26.75	33.6	1.32	74.5	2.93	41	1 5/8
E16-45FGAZ	1	M45 x 1.5	33.50	33.9	1.33	88.9	3.50	50	2


## FL Code 61 Flange



Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
E08-08FL	1/2	6.7	30.2	1.19	47.0	1.85	80.0	3.15	
E08-12FL	1/2	6.7	38.1	1.50	47.0	1.85	80.0	3.15	
E10-12FL	5/8	6.7	38.1	1.50	48.0	1.89	84.0	3.30	
E12-08FL	3/4	6.7	30.2	1.18	49.5	1.95	90.0	3.54	
E12-12FL	3/4	6.7	38.1	1.50	54.0	2.13	94.5	3.72	
E12-16FL	3/4	8.0	44.5	1.75	54.0	2.13	94.5	3.72	
E16-16FL	1	8.0	44.5	1.75	55.0	2.17	106.0	4.17	
E16-20FL	1	8.0	50.8	2.00	55.0	2.17	106.0	4.17	
E20-16FL	1 1/4	8.0	44.5	1.75	62.0	2.44	120.0	4.72	
E20-20FL	1 1/4	8.0	50.8	2.00	62.0	2.44	120.0	4.72	
E20-24FL	1 1/4	8.0	60.3	2.37	62.0	2.44	120.0	4.72	
E24-24FL	1 1/2	8.0	60.4	2.38	67.5	2.66	132.0	5.20	
E24-32FL	1 1/2	9.5	71.4	2.81	67.5	2.66	132.0	5.20	
E32-32FL	2	9.5	71.4	2.81	70.0	2.76	140.0	5.50	

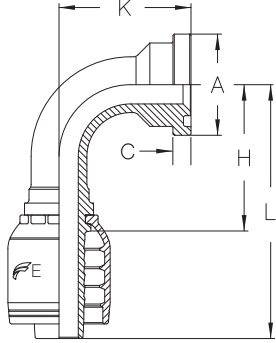
## FL45 Code 61 Flange - 45° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
E08-08FL45	1/2	6.7	30.2	1.19	47.0	1.85	80.0	3.15	20.0	0.79	
E08-12FL45	1/2	6.7	38.1	1.50	51.0	2.00	84.0	3.31	24.0	0.94	
E10-12FL45	5/8	6.7	38.1	1.50	55.0	2.17	91.0	3.58	24.0	0.94	
E12-08FL45	3/4	6.7	30.2	1.19	64.0	2.52	104.0	4.09	26.0	1.02	
E12-12FL45	3/4	6.7	38.1	1.50	62.0	2.44	102.0	4.02	25.0	0.98	
E12-16FL45	3/4	6.7	44.5	1.75	64.0	2.52	104.0	4.09	27.0	1.06	
E16-16FL45	1	8.0	44.5	1.75	77.0	3.03	128.0	5.04	28.0	1.10	
E16-20FL45	1	8.0	50.8	2.00	77.0	3.03	128.0	5.04	28.0	1.10	
E20-20FL45	1 1/4	8.0	50.8	2.00	88.0	3.46	146.0	5.75	32.0	1.26	
E20-24FL45	1 1/4	8.0	60.3	2.37	88.0	3.46	146.0	5.75	32.0	1.26	
E24-24FL45	1 1/2	8.0	60.3	2.37	105.0	4.13	169.0	6.65	37.0	1.46	
E24-32FL45	1 1/2	9.5	71.4	2.81	105.0	4.13	169.0	6.65	37.0	1.46	
E32-32FL45	2	9.5	71.4	2.81	212.0	8.35	142.0	5.59	53.0	2.09	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

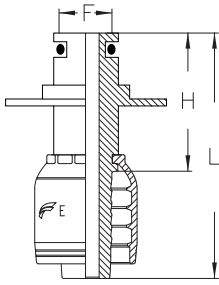
## FL90 Code 61 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
E08-08FL90-040	1/2	6.7	30.2	1.19	38.0	1.47	71.0	2.80	40.0	1.57	
E08-12FL90-045	1/2	6.7	38.1	1.50	38.0	1.47	71.0	2.80	45.0	1.77	
E10-08FL90-042	5/8	6.7	30.2	1.19	45.0	1.77	81.0	3.19	42.0	1.65	
E10-12FL90-047	5/8	6.7	38.1	1.50	45.0	1.77	81.0	3.19	47.0	1.85	
E12-08FL90-054	3/4	6.7	30.2	1.19	55.0	2.17	95.0	3.74	54.0	2.13	
E12-12FL90-051	3/4	6.7	38.1	1.50	55.0	2.17	95.0	3.74	51.0	2.00	
E12-16FL90-054	3/4	8.0	44.5	1.75	55.0	2.17	95.0	3.74	54.0	2.13	
E16-16FL90-061	1	8.0	44.5	1.75	70.0	2.76	121.0	4.76	61.0	2.40	
E16-20FL90-061	1	8.0	50.8	2.00	70.0	2.76	121.0	4.76	61.0	2.40	
E20-16FL90-078	1 1/4	8.0	44.5	1.75	85.0	3.35	142.0	5.59	78.0	3.07	
E20-20FL90-070	1 1/4	8.0	50.8	2.00	85.0	3.35	142.0	5.59	70.0	2.76	
E20-24FL90-070	1 1/4	8.0	60.3	2.37	85.0	3.35	142.0	5.59	70.0	2.76	
E24-24FL90-083	1 1/2	8.0	60.4	2.38	105.0	4.13	170.0	6.69	83.0	3.27	
E24-32FL90-083	1 1/2	9.5	71.4	2.81	105.0	4.13	170.0	6.69	83.0	3.27	
E32-32FL90-122	2	9.5	71.4	2.81	140.0	5.51	210.0	8.27	122.0	4.72	

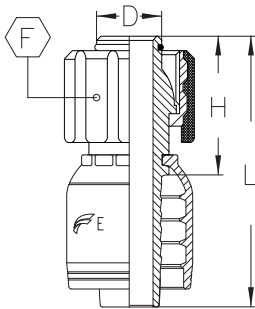
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## MPWK Pressure Wash Gun End - K



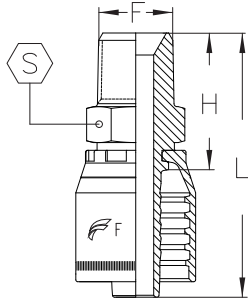
Part Number		F		H		L	
	in	mm	in	mm	in	mm	in
E04-22MPWK	1/4	9.3	0.37	36.0	1.42	64.0	2.52
E05-22MPWK	5/16	9.3	0.37	36.0	1.42	64.0	2.52



## FPWK Metric Pressure Wash Swivel - K



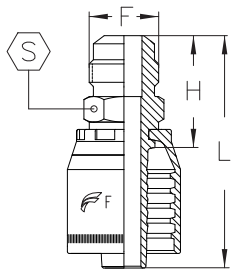
Part Number		F	H		L		D	
	in		mm	in	mm	in	mm	in
E04-22FPWK	1/4	M22 x 1.5	35.0	1.38	63.0	2.48	14	0.55
E05-22FPWK	5/16	M22 x 1.5	38.0	1.50	66.0	2.60	14	0.55
E06-22FPWK	3/8	M22 x 1.5	38.0	1.50	68.0	2.68	14	0.55



## MP NPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
F04-02MP	3/16	1/8 - 27	20.6	0.81	45.6	1.79	12	1/2
F04-04MP	3/16	1/4 - 18	26.5	1.04	51.5	2.02	14	9/16
F05-04MP	1/4	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
F05-06MP	1/4	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
F06-04MP	5/16	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
F06-06MP	5/16	3/8 - 18	28.6	1.12	56.6	2.22	19	3/4
F08-06MP	13/32	3/8 - 18	33.1	1.30	57.5	2.26	19	3/4
F08-08MP	13/32	1/2 - 14	39.1	1.53	63.5	2.50	22	7/8
F10-08MP	1/2	1/2 - 14	35.0	1.37	68.0	2.67	22	7/8
F10-12MP	1/2	3/4 - 12	36.9	1.45	69.9	2.75	27	1 1/16
F12-12MP	5/8	3/4 - 12	37.1	1.46	72.9	2.87	27	1 1/16
F16-16MP	7/8	3/4 - 12	49.0	1.92	82.9	3.26	36	1 7/16
F20-20MP	1 1/8	1 1/4 - 11 1/2	50.3	1.98	103.6	4.08	43	1 3/4
F24-24MP	1 3/16	3/4 - 12	58.0	2.28	110.0	4.33	50	2
F32-32MP	1 13/16	2 - 11 1/2	63.0	2.50	123.0	4.84	65	2 9/16

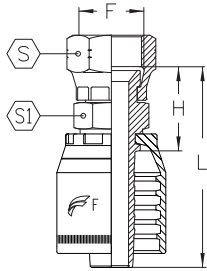
## MJ JIC 37° Male






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
F04-04MJ	3/16	7/16 - 20	25.0	0.98	50.0	1.96	12	1/2
F05-05MJ	1/4	1/2 - 20	25.5	1.00	53.5	2.10	14	9/16
F05-06MJ	1/4	9/16 - 18	26.6	1.04	54.6	2.14	15	5/8
F06-06MJ	5/16	9/16 - 18	26.6	1.04	54.6	2.14	15	5/8
F06-08MJ	5/16	3/4 - 16	29.7	1.17	57.7	2.24	19	3/4
F08-08MJ	13/32	3/4 - 16	36.6	1.44	61.0	2.40	22	7/8
F10-08MJ	1/2	3/4 - 16	30.7	1.20	63.7	2.50	19	3/4
F10-10MJ	1/2	7/8 - 14	35.3	1.38	68.3	2.68	24	1
F12-12MJ	5/8	1 1/16 - 12	39.1	1.53	74.9	2.94	27	1 1/16



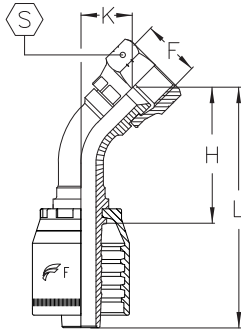
## FJ JIC 37° Female Swivel





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
F04-04FJ	3/16	7/16 - 20	19.0	0.74	44.0	1.73	14	9/16	12	1/2
F05-04FJ	1/4	7/16 - 20	20.5	0.80	48.5	1.90	14	9/16	14	9/16
F05-05FJ	1/4	1/2 - 20	21.0	0.82	49.0	1.92	17	11/16	14	9/16
F05-06FJ	1/4	9/16 - 18	22.0	0.86	50.0	1.96	19	3/4	14	9/16
F06-06FJ	5/16	9/16 - 18	22.5	0.88	50.5	1.98	19	3/4	16	5/8
F06-08FJ*	5/16	3/4 - 16	17.5	0.68	45.5	1.79	22	7/8	-	-
F08-08FJ	13/32	3/4 - 16	31.1	1.22	64.6	2.54	24	15/16	19	3/4
F08-10FJ	13/32	7/8 - 14	27.5	1.07	54.5	2.12	27	11/16	22	7/8
F10-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
F10-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	11/16	22	7/8
F10-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
F12-12FJ	5/8	1 1/16 - 12	30.5	1.20	66.3	2.61	32	1 1/4	25	1
F16-16FJ	7/8	1 5/16 - 12	35.5	1.39	76.0	2.99	38	1 1/2	32	1 1/4
F20-20FJ	1 1/8	1 5/8 - 12	53.4	2.10	105.0	4.13	50	2	41	1 5/8
F24-24FJ	1 3/8	1 7/8 - 12	60.0	2.36	120.0	4.72	57	2 1/4	50	2
F32-32FJ	1 11/16	2 1/2 - 12	51.5	2.03	111.5	4.39	70	2 3/4	60	2 3/8

\* Single hexagon coupling.

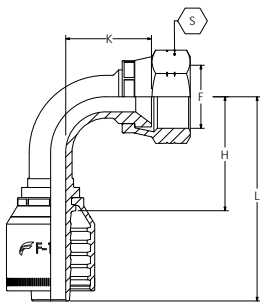
## FJ45 JIC 37° Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F04-04FJ45	3/16	7/16 - 20	29.0	1.14	54.0	2.12	10.0	0.39	14	9/16
F05-05FJ45	1/4	1/2 - 20	32.0	1.25	60.0	2.36	11.0	0.43	17	11/16
F06-06FJ45	5/16	9/16 - 18	34.0	1.33	62.0	2.44	12.0	0.47	19	3/4
F08-08FJ45	13/32	3/4 - 16	45.0	1.77	78.0	3.07	20.0	0.78	24	1 5/16
F10-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.62	27	1 1/16
F12-12FJ45	5/8	1 1/16 - 12	50.0	1.96	86.0	3.38	19.0	0.74	32	1 1/4
F16-16FJ45	7/8	1 5/16 - 12	71.0	2.80	110.0	4.43	24.0	0.94	38	1 1/2
F20-20FJ45	1 1/8	1 5/8 - 12	90.0	3.54	143.0	5.63	36.0	1.43	50	2

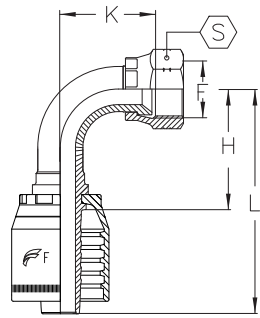
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
## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop



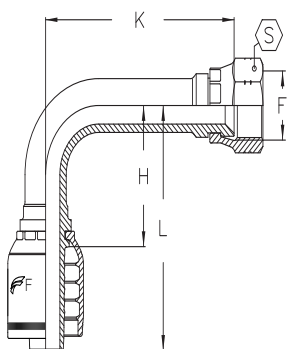
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F10-10FJ90S	1/2	7/8 - 14	38.0	1.50	71.0	2.79	33.0	1.30	27	1 1/16
F12-12FJ90S	5/8	1 3/16 - 12	45.0	1.77	81.0	3.19	40.0	1.57	32	1 1/4



## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F04-04FJ90M	3/16	7/16 - 20	21.0	0.82	46	1.81	21.0	0.82	14	9/16
F05-05FJ90M	1/4	7/16 - 20	25.5	1.00	53.5	2.10	26.0	1.02	14	9/16
F05-06FJ90M	1/4	9/16 - 18	25.5	1.00	53.5	2.10	27.0	1.06	19	3/4
F06-06FJ90M	5/16	9/16 - 18	28.0	1.10	56	2.20	29.0	1.14	19	3/4
F08-08FJ90M	13/32	3/4 - 16	31.6	1.24	69.5	2.73	39.0	1.53	24	1 5/16
F10-10FJ90M	1/2	7/8 - 14	37.0	1.45	70	2.75	40.0	1.57	27	1 1/16
F10-12FJ90M	1/2	1 1/16 - 12	40.0	1.57	73	2.87	40.0	1.57	32	1 1/4
F12-12FJ90M	5/8	1 1/16 - 12	45.0	1.77	81	3.18	47.0	1.85	32	1 1/4
F16-16FJ90M	7/8	1 5/16 - 12	74.0	2.91	129	5.07	72.0	2.83	38	1 1/2
F20-20FJ90M	1 1/16	1 5/8 - 12	89.1	3.50	147	5.78	88.4	3.48	50	2

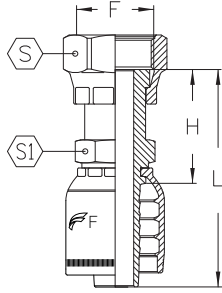
## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop






Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F10-10FJ90L	1/2	7/8 - 14	45.0	1.79	81	3.19	70.0	2.75	27	1 1/16
F16-16FJ90L	7/8	1 5/16 - 12	74.0	2.91	115	4.52	116.0	4.56	38	1 1/2
F20-20FJ90L	1 1/16	1 5/8 - 12	89.1	3.50	147	5.78	145.0	5.70	50	2

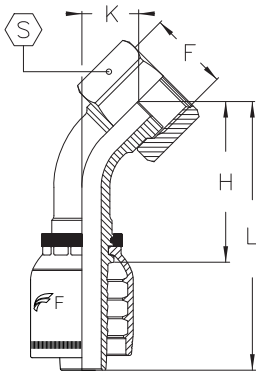
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## FF Female Swivel



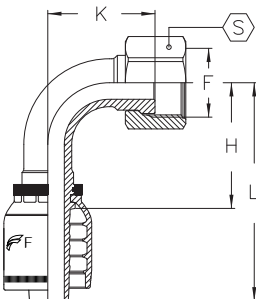
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
F06-06FF	5/16	1 1/16 - 16	28.5	1.22	1.12	56.5	22	7/8	16	5/8
F10-08FF	1/2	1 3/16 - 16	33.5	1.32	1.32	66.5	24	1	19	3/4
F10-10FF	1/2	1 3/16 - 16	39.5	1.56	1.56	72.5	30	1 3/16	24	1
F12-12FF	5/8	1 - 14	45.7	1.80	1.72	79.5	36	1 7/16	27	1 1/16



## FF45 Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F06-06FF45	5/16	1 1/16 - 16	32.5	1.28	63.0	2.48	12.5	0.49	22	7/8
F10-08FF45	1/2	1 3/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
F10-10FF45	1/2	1 3/16 - 16	38.0	1.50	78.0	3.08	17.5	0.69	30	1 3/16
F12-12FF45	5/8	1 - 14	41.0	1.61	87.5	3.44	20.5	0.80	36	1 7/16

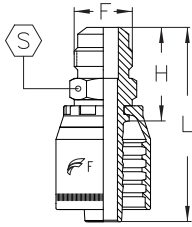
## FF90S Female Swivel - 90° Elbow Short Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F06-06FF90S	5/16	1 1/16 - 16	29.0	1.14	57.0	2.24	25.0	0.98	22	7/8
F10-08FF90S	1/2	1 3/16 - 16	39.0	1.54	72.0	2.83	31.0	1.20	24	1
F10-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	1 3/16
F12-12FF90S	5/8	1 - 14	45.0	1.77	81.0	3.19	42.0	1.65	36	1 7/16

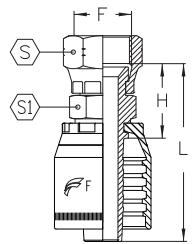
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## MA SAE 45° Male



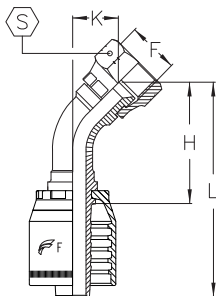
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
F06-06MA	5/16	5/8 - 18	28.2	1.11	56.2	2.21	16	5/8

## FA SAE 45° Female



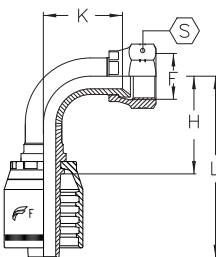
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
F06-06FA	5/16	5/8 - 18	23.5	0.92	51.5	2.02	22	7/8	16	5/8
F12-12FA	5/8	1 1/16 - 14	31.8	1.25	72.3	2.84	32	1 1/4	27	1 1/16

## FA45 SAE 45° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F06-06FA45	5/16	5/8 - 18	38.0	1.49	66.0	2.59	16.0	0.62	22	7/8

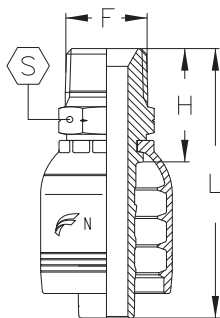
## FA90 SAE 45° Female Swivel - 90° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
F06-06FA90	5/16	5/8 - 18	28.0	1.10	56.0	2.20	29.0	1.14	22	7/8

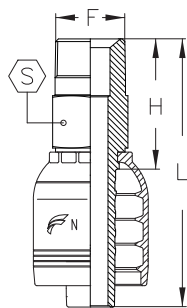
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## MP NPT Male



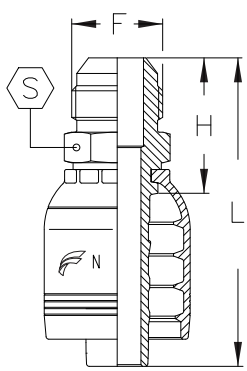
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19.0	3/4
N06-08MP	3/8	1/2 - 14	34.0	1.34	64.5	2.54	22.0	7/8
N08-06MP	1/2	3/8 - 18	30.6	1.20	63.6	2.50	22.0	7/8
N08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22.0	7/8
N08-12MP	1/2	3/4 - 14	36.9	1.45	69.9	2.75	27.0	1 1/16
N10-08MP	5/8	1/2 - 14	36.2	1.42	72.0	2.83	25.0	1
N10-12MP	5/8	3/4 - 14	37.1	1.46	72.9	2.87	27.0	1 1/16
N12-08MP	3/4	3/4 - 14	32.5	1.48	78.0	3.07	27.0	1 1/16
N12-12MP	3/4	3/4 - 14	39.0	1.53	90.0	3.54	27.0	1 1/16
N12-16MP	3/4	1 - 11 1/2	47.0	1.85	98.0	3.86	36.0	1 7/16
N16-12MP	1	3/4 - 14	41.5	1.63	98.0	3.86	32.0	1 1/4
N16-16MP	1	1 - 11 1/2	48.5	1.91	105.0	4.13	36.0	1 7/16
N16-20MP	1	1 1/4 - 11 1/2	53.0	2.09	109.5	4.31	46.0	1 13/16
N20-20MP	1 1/4	1 1/4 - 11 1/2	55.0	2.16	121.5	4.78	46.0	1 13/16
N24-24MP	1 1/2	1 1/2 - 11 1/2	61.0	2.40	143.5	5.65	50.0	2
N32-32MP	2	2 - 11 1/2	70.5	2.77	167.0	6.57	65.0	2 9/16



## MPA API Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N32-32MPA	2	2 - 11 1/2	112.3	4.42	208.8	8.22	65.0	2 9/16

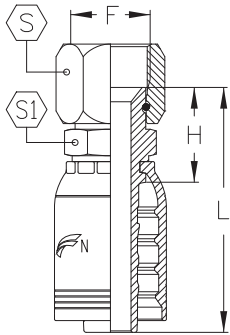
## MJ JIC 37° Male






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06MJ	3/8	9/16 - 18	26.6	1.04	57.1	2.24	15	5/8
N06-08MJ	3/8	3/4 - 16	29.7	1.16	60.2	2.37	19	3/4
N08-08MJ	1/2	3/4 - 16	30.7	1.20	63.7	2.50	19	3/4
N08-10MJ	1/2	7/8 - 14	35.3	1.38	68.3	2.68	24	1
N08-12MJ	1/2	1 1/16 - 12	38.9	1.53	71.9	2.83	27	1 1/16
N10-10MJ	5/8	7/8 - 14	35.5	1.39	71.3	2.80	24	1
N10-12MJ	5/8	1 1/16 - 12	39.1	1.53	74.9	2.94	27	1 1/16
N12-12MJ	3/4	1 1/16 - 12	40.0	1.57	91.0	3.58	27	1 1/16
N12-14MJ	3/4	1 7/16 - 12	41.5	1.63	92.5	3.64	32	1 1/4
N12-16MJ	3/4	1 5/16 - 12	43.0	1.69	94.0	3.70	36	1 7/16
N16-16MJ	1	1 5/16 - 12	45.0	1.77	101.5	3.99	36	1 7/16
N16-20MJ	1	1 5/8 - 12	48.0	1.88	104.5	4.11	46	1 13/16
N20-20MJ	1 1/4	1 5/8 - 12	50.5	1.98	117.0	4.60	46	1 13/16
N24-24MJ	1 1/2	1 7/8 - 12	57.0	2.24	139.5	5.49	50	2
N32-32MJ	2	2 1/2 - 12	68.5	2.69	165.0	6.49	65	2 9/16

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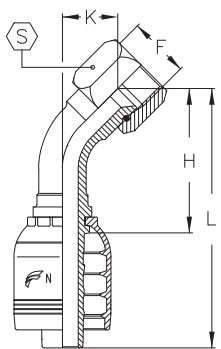
## FJ JIC 37° Female Swivel





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
N06-06FJ	3/8	9/16 - 18	22.5	0.88	53.0	2.09	19	3/4	16	5/8
N06-06FJ-01	3/8	9/16 - 18	22.5	0.88	53.0	2.09	17.5	1 1/16	16	5/8
N06-08FJ	3/8	3/4 - 16	24.5	0.96	55.0	2.16	22	7/8	19	3/4
N08-06FJ	1/2	9/16 - 18	24.5	0.96	57.5	2.26	19	3/4	19	3/4
N08-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
N08-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	1 1/16	22	7/8
N08-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
N10-08FJ	5/8	3/4 - 16	26.7	1.05	62.5	2.46	22	7/8	22	7/8
N10-10FJ	5/8	7/8 - 14	27.7	1.09	63.5	2.50	27	1 1/16	22	7/8
N10-12FJ	5/8	1 1/16 - 12	30.5	1.20	66.3	2.61	32	1 1/4	25	1
N12-10FJ	3/4	7/8 - 14	33.0	1.30	84.0	3.31	27	1 1/16	27	1 1/16
N12-12FJ	3/4	1 1/16 - 12	34.0	1.34	85.0	3.35	32	1 1/4	27	1 1/16
N12-14FJ	3/4	1 7/16 - 12	35.5	1.40	86.5	3.40	36	1 7/16	30	1 7/16
N12-16FJ	3/4	1 5/16 - 12	38.0	1.50	89.0	3.50	41	1 5/8	32	1 1/4
N16-12FJ	1	1 1/16 - 12	36.5	1.44	93.0	3.66	32	1 1/4	32	1 1/4
N16-16FJ	1	1 5/16 - 12	39.5	1.55	96.0	3.78	41	1 5/8	32	1 1/4
N16-16FJ-01	1	1 5/16 - 12	39.5	1.55	96.0	3.78	38	1 1/2	32	1 1/4
N16-20FJ	1	1 5/8 - 12	46.0	1.81	102.5	4.03	50	2	41	1 5/8
N20-16FJ	1 1/4	1 5/16 - 12	45.5	1.79	112.0	4.41	41	1 5/8	41	1 5/8
N20-20FJ	1 1/4	1 5/8 - 12	48.0	1.89	114.5	4.51	50	2	41	1 5/8
N20-24FJ	1 1/4	1 7/8 - 12	51.0	2.01	117.5	4.62	60	2 3/8	46	1 13/16
N24-24FJ	1 1/2	1 7/8 - 12	53.0	2.09	135.5	5.33	60	2 3/8	46	1 13/16
N32-32FJ	2	2 1/2 - 12	69.0	2.72	165.5	6.51	75	3	60	2 3/8

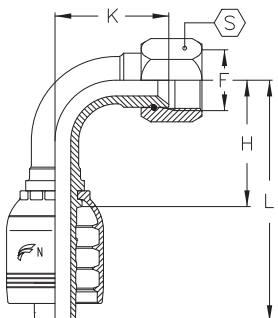
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## FJ45 JIC 37° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FJ45	3/8	9/16 - 18	35.5	1.40	66.0	2.60	12.0	0.47	19	3/4
N06-08FJ45	3/8	3/4 - 16	37.5	1.48	68.0	2.68	14.0	0.55	22	7/8
N08-08FJ45	1/2	3/4 - 16	41.0	1.61	74.0	2.91	14.5	0.57	22	7/8
N08-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.63	27	1 1/16
N08-12FJ45	1/2	1 1/16 - 12	45.5	1.79	78.5	3.09	19.0	0.75	32	1 1/4
N10-10FJ45	5/8	7/8 - 14	47.0	1.85	83.0	3.27	16.0	0.63	27	1 1/16
N10-12FJ45	5/8	1 1/16 - 12	50.0	1.97	86.0	3.38	19.0	0.75	32	1 1/4
N12-12FJ45	3/4	1 1/16 - 12	63.0	2.48	114.0	4.49	25.0	0.98	32	1 1/4
N12-16FJ45	3/4	1 5/16 - 12	63.0	2.48	114.0	4.49	25.0	0.98	41	1 5/8
N16-16FJ45	1	1 5/16 - 12	82.0	3.23	138.0	5.43	32.0	1.26	41	1 5/8
N16-20FJ45	1	1 5/8 - 12	82.0	3.23	138.0	5.43	32.0	1.26	50	2
N20-20FJ45	1 1/4	1 5/8 - 12	98.0	3.86	164.0	6.46	38.0	1.50	50	2
N20-24FJ45	1 1/4	1 7/8 - 12	98.0	3.86	164.0	6.46	38.0	1.50	60	2 3/8
N24-24FJ45	1 1/2	1 7/8 - 12	118.0	4.64	201.0	7.91	46.0	1.81	60	2 3/8
N32-32FJ45	2	2 1/2 - 12	157.0	6.18	253.0	9.96	62.0	2.44	75	3

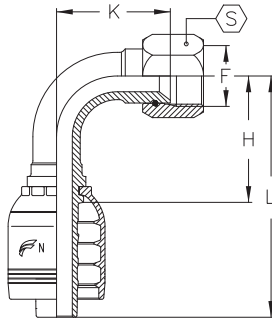
## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FJ90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	23.0	0.91	19	3/4
N06-08FJ90S	3/8	3/4 - 16	31.0	1.22	61.5	2.42	29.0	1.14	22	7/8
N08-08FJ90S	1/2	3/4 - 16	37.0	1.46	70.0	2.75	29.0	1.14	22	7/8
N08-10FJ90S	1/2	7/8 - 14	38.0	1.50	70.0	2.75	33.0	1.30	27	1 1/16
N08-12FJ90S	1/2	1 1/16 - 12	40.0	1.57	73.0	2.87	40.0	1.57	32	1 1/4

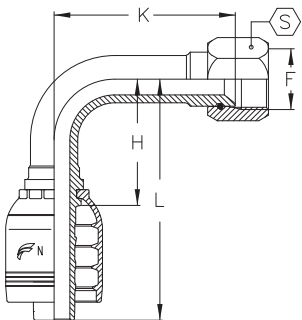




## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FJ90M	3/8	9/16 - 18	31.0	1.22	61.5	2.42	33.0	1.30	19	3/4
N06-08FJ90M	3/8	3/4 - 16	31.0	1.22	61.5	2.42	33.0	1.30	22	7/8
N08-08FJ90M	1/2	3/4 - 16	37.0	1.46	70.0	2.75	39.0	1.54	22	7/8
N08-10FJ90M	1/2	7/8 - 14	37.0	1.46	70.0	2.75	40.0	1.57	27	1 1/16
N08-12FJ90M	1/2	1 1/16 - 12	37.0	1.46	70.0	2.75	45.0	1.77	32	1 1/4
N10-10FJ90M	5/8	7/8 - 14	45.0	1.77	81.0	3.19	45.0	1.77	27	1 1/16
N10-12FJ90M	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	47.0	1.85	32	1 1/4
N12-12FJ90M	3/4	1 1/16 - 12	55.0	2.16	106.0	4.17	52.0	2.05	32	1 1/4
N12-16FJ90M	3/4	1 5/16 - 12	55.0	2.16	106.0	4.17	56.0	2.20	36	1 7/16
N16-16FJ90M	1	1 5/16 - 12	71.0	2.79	128.0	5.04	67.0	2.64	41	1 5/8
N16-20FJ90M	1	1 5/8 - 12	71.0	2.79	128.0	5.04	69.0	2.72	50	2
N20-20FJ90M	1 1/4	1 5/8 - 12	87.0	3.42	154.0	6.06	81.0	3.19	50	2
N20-24FJ90M	1 1/4	1 7/8 - 12	87.0	3.42	154.0	6.06	82.0	3.23	60	2 3/8
N24-24FJ90M	1 1/2	1 7/8 - 12	105.0	4.13	188.0	7.40	97.0	3.82	60	2 3/8
N32-32FJ90M	2	2 1/2 - 12	140.0	5.51	237.0	9.33	132.0	5.20	75	3

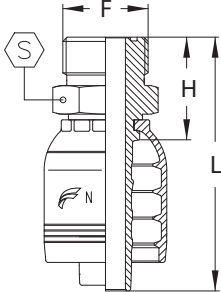
## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FJ90L	3/8	9/16 - 18	31.0	1.22	61.5	2.42	54.0	2.12	19	3/4
N06-08FJ90L	3/8	3/4 - 16	31.0	1.22	61.5	2.42	64.0	2.52	22	7/8
N08-08FJ90L	3/8	1 1/16 - 12	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
N08-08FJ90L	3/8	1 1/16 - 12	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
N08-10FJ90L	1/2	7/8 - 14	38.0	1.50	71.0	2.79	70.0	2.75	27	1 1/16
N10-10FJ90L	5/8	7/8 - 14	45.0	1.77	81.0	3.19	70.0	2.75	27	1 1/16
N12-12FJ90L	3/4	1 1/16 - 12	55.0	2.16	106.0	4.17	96.0	3.78	32	1 1/4
N16-16FJ90L	1	1 5/16 - 12	71.0	2.79	128.0	5.04	116.0	4.57	41	1 5/8
N20-20FJ90L	1 1/4	1 5/8 - 12	87.0	3.42	154.0	6.06	136.0	5.35	50	2

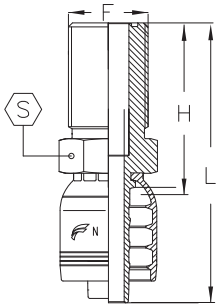
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## MF ORFS Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06MF	3/8	1 1/16 - 16	25.5	1.00	56.0	2.20	19	3/4
N06-08MF	3/8	1 3/16 - 16	28.5	1.12	59.0	2.32	22	7/8
N08-08MF	1/2	1 3/16 - 16	29.5	1.16	62.5	2.46	22	7/8
N08-10MF	1/2	1 - 14	34.0	1.33	67.0	2.63	27	1 1/16
N08-12MF	1/2	1 7/16 - 12	37.0	1.45	70.0	2.75	32	1 1/4
N10-10MF	5/8	1 - 14	34.0	1.33	70.0	2.75	27	1 1/16
N10-12MF	5/8	1 7/16 - 12	37.0	1.45	73.0	2.87	32	1 1/4
N12-12MF	3/4	1 7/16 - 12	36.0	1.42	87.0	3.42	32	1 1/4
N16-16MF	1	1 7/16 - 12	41.0	1.61	97.0	3.82	41	1 5/8
N20-20MF	1 1/4	1 11/16 - 12	44.0	1.73	111.0	4.37	46	1 13/16
N24-24MF	1 1/2	1 7/8 - 12	48.0	1.89	131.0	5.16	55	2 1/4

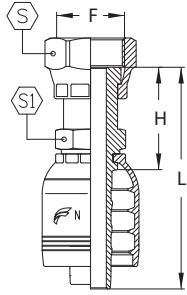
## MFK ORFS Male Bulkhead






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06MFK*	3/8	1 1/16 - 16	47.0	1.85	77.0	3.03	19	3/4
N08-08MFK*	1/2	1 3/16 - 16	50.0	2.00	83.0	3.26	22	7/8

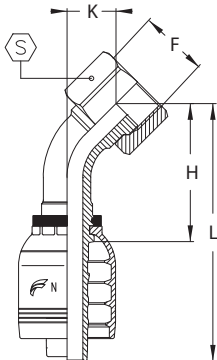
\*Locknut not included.



## FF ORFS Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
N06-06FF	3/8	1 1/16 - 16	28.5	1.12	59.0	2.32	22	7/8	16	5/8
N06-08FF	3/8	1 3/16 - 16	32.5	1.27	63.0	2.48	24	1	19	3/4
N08-06FF	1/2	1 1/16 - 16	30.5	1.20	63.5	2.50	22	7/8	19	3/4
N08-08FF	1/2	1 3/16 - 16	33.5	1.31	66.5	2.61	24	1	19	3/4
N08-10FF	1/2	1 - 14	39.5	1.55	72.5	2.85	30	1 1/16	24	1
N08-12FF	1/2	1 7/16 - 12	43.5	1.71	76.5	3.01	36	1 7/16	27	1 1/16
N10-08FF	5/8	1 3/16 - 16	35.7	1.41	71.5	2.81	24	1	24	1
N10-10FF	5/8	1 - 14	39.5	1.55	75.5	2.97	30	1 7/16	24	1
N10-12FF	5/8	1 7/16 - 12	43.5	1.71	79.5	3.12	36	1 7/16	27	1 1/16
N12-10FF	3/4	1 - 14	43.0	1.69	94.0	3.70	30	1 7/16	27	1/16
N12-12FF	3/4	1 7/16 - 12	46.0	1.81	97.0	3.82	36	1 7/16	30	1 7/16
N12-16FF	3/4	1 7/16 - 12	49.0	1.93	100.0	3.94	41	1 5/8	36	1 7/16
N16-12FF	1	1 7/16 - 12	48.0	1.92	104.0	4.16	36	1 7/16	36	1 7/16
N16-16FF	1	1 7/16 - 12	51.0	2.01	107.0	4.21	41	1 5/8	36	1 7/16
N16-20FF	1	1 11/16 - 12	52.0	2.05	109.0	4.29	50	2	41	1 5/8
N20-16FF	1 1/4	1 7/16 - 12	53.0	2.09	119.5	4.70	41	1 5/8	41	1 5/8
N20-20FF	1 1/4	1 11/16 - 12	55.0	2.16	121.0	4.76	50	2	41	1 5/8
N24-24FF	1 1/2	2 - 12	60.0	2.36	142.0	5.59	60	2 3/8	50	2

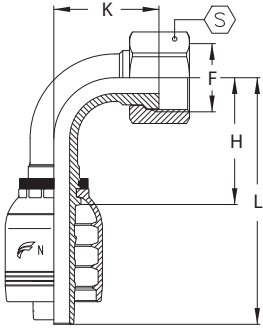
## FF45 ORFS Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FF45	3/8	1 1/16 - 16	36.0	1.41	66.5	2.61	12.5	0.49	22	7/8
N06-08FF45	3/8	1 3/16 - 16	38.5	1.51	69.0	2.71	15.0	0.59	24	1
N08-06FF45	1/2	1 1/16 - 16	46.5	1.83	79.5	3.12	19.5	0.76	22	7/8
N08-08FF45	1/2	1 3/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
N08-10FF45	1/2	1 - 14	45.0	1.77	78.0	3.07	17.5	0.68	30	1 7/16
N08-12FF45	1/2	1 7/16 - 12	47.0	1.85	80.0	3.14	20.5	0.80	36	1 7/16
N10-10FF45	5/8	1 - 14	49.0	1.92	85.0	3.34	18.0	0.70	30	1 7/16
N10-12FF45	5/8	1 7/16 - 12	51.5	2.02	87.5	3.44	20.5	0.80	36	1 7/16
N12-12FF45	3/4	1 7/16 - 12	60.0	2.36	111.0	4.37	22.0	0.87	36	1 7/16
N12-16FF45	1	1 7/16 - 12	61.0	2.40	112.0	4.40	23.0	0.91	41	1 5/8
N16-12FF45	1	1 7/16 - 12	63.0	2.48	120.0	4.72	22.0	0.87	36	1 7/16
N16-16FF45	1	1 7/16 - 12	78.0	3.07	134.0	5.27	29.0	1.14	41	1 5/8
N16-20FF45	1	1 11/16 - 12	78.0	3.07	134.0	5.27	29.0	1.14	50	2
N20-20FF45	1 1/4	1 11/16 - 12	93.0	3.66	159.0	6.26	34.0	1.34	50	2
N24-24FF45	1 1/2	2 - 12	113.0	4.45	195.0	7.68	41.0	1.61	60	2 1/2

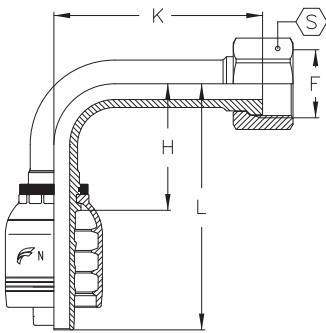
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## FF90S ORFS Female Swivel - 90° Elbow Short Drop



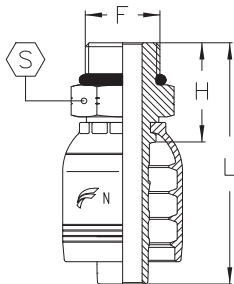
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FF90S	3/8	1 1/16 - 16	31.5	1.24	62.0	2.44	24.5	0.96	22	7/8
N06-08FF90S	3/8	1 3/16 - 16	31.0	1.22	61.0	2.40	30.0	1.18	24	1
N08-06FF90S	1/2	1 1/16 - 16	37.0	1.46	70.0	2.46	24.5	0.96	32	7/8
N08-08FF90S	1/2	1 3/16 - 16	39.0	1.54	72.0	2.83	31.0	1.22	24	1
N08-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	1 1/16
N08-12FF90S	1/2	1 7/16 - 12	39.0	1.54	72.0	2.83	42.0	1.65	36	1 7/16
N10-10FF90S	5/8	1 - 14	45.0	1.77	81.0	3.19	35.0	1.38	30	1 7/16
N10-12FF90S	5/8	1 7/16 - 12	45.0	1.77	81.0	3.19	42.0	1.65	36	1 7/16
N12-12FF90S	3/4	1 7/16 - 12	54.0	2.13	105.0	4.13	48.0	1.89	36	1 7/16
N12-16FF90S	3/4	1 7/16 - 12	54.0	2.13	105.0	4.13	49.0	1.93	41	1 5/8
N16-12FF90S	1	1 7/16 - 12	71.0	2.80	127.0	5.00	48.0	1.93	36	1 7/16
N16-16FF90S	1	1 7/16 - 12	71.0	2.79	127.0	5.00	62.0	2.44	41	1 5/8
N16-20FF90S	1	1 11/16 - 12	71.0	2.79	127.0	5.00	62.0	2.44	50	2
N20-20FF90S	1 1/4	1 11/16 - 12	87.0	3.42	153.0	6.02	75.0	2.95	50	2
N24-24FF90S	1 1/2	2 - 12	105.0	4.13	187.0	7.36	90.0	3.54	60	2 3/8



## FF90L ORFS Female Swivel - 90° Elbow Long Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FF90L	3/8	1 1/16 - 16	34.0	1.33	64.5	2.53	54.0	2.12	22	7/8
N08-08FF90L	1/2	1 7/16 - 16	39.0	1.53	72.0	2.83	64.0	2.51	24	1
N08-10FF90L	1/2	1 - 14	39.0	1.53	72.0	2.83	64.0	2.51	30	1 7/16
N10-10FF90L	5/8	1 - 14	45.0	1.77	81.0	3.18	70.0	2.75	30	1 7/16
N12-12FF90L	3/4	1 7/16 - 12	54.0	2.13	105.0	4.13	96.0	3.78	36	1 7/16
N16-16FF90L	1	1 7/16 - 12	71.0	2.79	127.0	5.00	114.0	4.49	41	1 5/8
N20-20FF90L	1 1/4	1 11/16 - 12	87.0	3.42	153.0	6.02	130.0	5.12	50	2

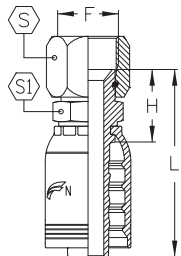
## MOB O-Ring Boss Male






Part Number		F	H		L			
	in		mm	in	mm	in	mm	
N06-06MOB	3/8	9/16 - 18	23.5	0.92	54.0	2.12	17	1 1/16
N06-08MOB	3/8	3/4 - 16	26.2	1.03	56.7	2.23	22	7/8
N08-08MOB	1/2	3/4 - 16	27.2	1.07	60.2	2.37	22	7/8
N08-10MOB	1/2	7/8 - 16	29.7	1.17	62.7	2.47	25	1
N08-12MOB	1/2	1 1/16 - 16	33.8	1.33	69.6	2.74	32	1 1/4
N12-12MOB	3/4	1 1/16 - 16	36.0	1.42	87.0	3.43	32	1 1/4
N16-16MOB	1	1 5/16 - 12	39.0	1.54	96.0	3.78	38	1 1/2

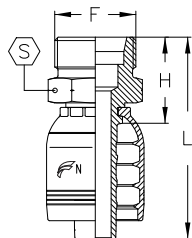
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## FK Komatsu Female Swivel



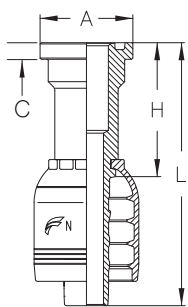
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
N06-18FK	3/8	M18 x 1.5	24.3	0.95	54.8	2.15	24	1	19	3/4
N06-22FK	3/8	M22 x 1.5	29.0	1.14	59.0	2.32	27	1 1/16	22	7/8
N08-18FK	1/2	M18 x 1.5	26.0	1.02	59.0	2.32	24	1	22	7/8
N08-22FK	1/2	M22 x 1.5	26.5	1.04	59.5	2.34	27	1 1/16	27	1 1/16
N08-24FK	1/2	M24 x 1.5	29.9	1.17	62.9	2.47	32	1 1/4	32	1 1/4
N10-24FK	5/8	M24 x 1.5	29.9	1.17	65.9	2.59	32	1 1/4	32	1 1/4
N12-24FK	3/4	M24 x 1.5	33.0	1.30	84.0	3.31	32	1 1/4	32	1 1/4
N12-30FK	3/4	M30 x 1.5	36.0	1.42	87.0	3.43	36	1 7/16	36	1 7/16
N16-33FK	1	M33 x 1.5	38.0	1.50	95.0	3.74	41	1 5/8	36	1 7/16
N16-36FK	1	M36 x 1.5	42.0	1.65	98.0	3.86	46	1 13/16	41	1 5/8
N20-36FK	1 1/4	M36 x 1.5	44.0	1.73	110.5	4.35	46	1 13/16	41	1 5/8


## MKBC Kobelco Male



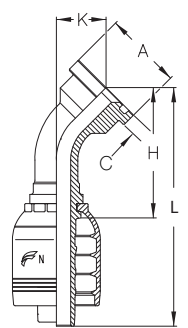
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N12-30MKBC	3/4	M30 x 1.5	39.2	1.54	90.2	3.55	38	1.50
N12-36MKBC	3/4	M36 x 1.5	39.2	1.54	90.2	3.55	41	1.61
N16-36MKBC	1	M36 x 1.5	42.5	1.67	99.0	3.90	41	1.61
N16-45MKBC	1	M45 x 1.5	45.0	1.77	101.6	4.00	50	1.97


## FLK Komatsu Flange



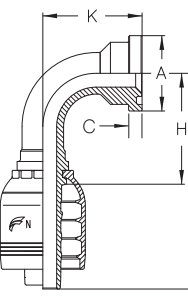
Part Number		C	A		H		L	
	in	mm	mm	in	mm	in	mm	in
N10-10FLK	5/8	6.0	34.2	1.33	48.0	1.89	80.0	3.15


## FLK45 Komatsu Flange - 45° Elbow



Part Number		C	A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in
N10-10FLK45	5/8	6.0	34.2	1.33	48.0	1.89	84.0	3.30	22.0	0.87

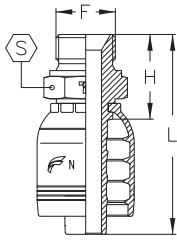
## FLK90 Komatsu Flange - 90° Elbow





Part Number		C	A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in
N10-10FLK90-044	5/8	6.0	34.2	1.33	44.0	1.73	74.0	2.91	44.0	1.69

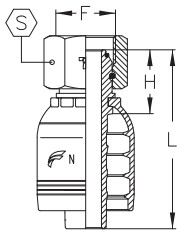
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## MBSPP BSPP Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06MBSPP	3/8	3/8 - 19	27.0	1.06	58.0	2.28	22	7/8
N06-08MBSPP	3/8	1/2 - 14	32.0	1.25	62.0	2.44	27	1 1/16
N08-08MBSPP	1/2	1/2 - 14	28.0	1.10	67.0	2.63	22	7/8
N10-10MBSPP	5/8	5/8 - 14	35.0	1.37	71.0	2.79	30	1 7/16
N10-12MBSPP	5/8	3/4 - 14	36.0	1.41	72.0	2.83	32	1 1/4
N12-12MBSPP	3/4	3/4 - 14	38.0	1.50	89.0	3.50	32	1 1/4
N12-16MBSPP	3/4	1 - 11	43.0	1.69	91.0	3.58	41	1 5/8
N16-16MBSPP	1	1 - 11	45.0	1.77	101.0	3.98	41	1 5/8
N16-20MBSPP	1	1 1/4 - 11	48.0	1.89	104.0	4.09	50	2
N20-20MBSPP	1 1/4	1 1/4 - 11	50.0	1.97	117.0	4.61	50	2
N24-24MBSPP	1 1/2	1 1/2 - 11	55.0	2.16	138.0	5.43	55	2 1/4
N32-32MBSPP	2	2 - 11	63.0	2.48	159.0	6.26	70	2 3/4

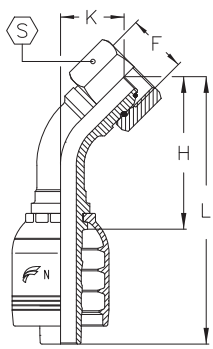
## FBSPP BSPP Female Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
N06-06FBSPP	3/8	3/8 - 19	21.0	0.83	51.0	2.01	22	7/8
N06-08FBSPP	3/8	1/2 - 14	23.0	0.90	54.0	2.12	27	1 1/16
N08-08FBSPP	1/2	1/2 - 14	23.0	0.90	56.0	2.20	27	1 1/16
N08-10FBSPP	1/2	5/8 - 14	24.0	0.94	57.0	2.24	30	1 7/16
N10-10FBSPP	5/8	5/8 - 14	23.0	0.90	59.0	2.32	30	1 7/16
N10-12FBSPP	5/8	3/4 - 14	27.0	1.06	63.0	2.48	32	1 1/4
N12-12FBSPP	3/4	3/4 - 14	29.0	1.14	80.0	3.15	32	1 1/4
N12-16FBSPP	3/4	1 - 11	32.0	1.26	83.0	3.27	41	1 5/8
N16-16FBSPP	1	1 - 11	34.0	1.34	90.0	3.54	41	1 5/8
N16-20FBSPP	1	1 1/4 - 11	37.0	1.46	93.0	3.66	50	2
N20-20FBSPP	1 1/4	1 1/4 - 11	39.0	1.53	106.0	4.17	50	2
N24-24FBSPP	1 1/2	1 1/2 - 11	43.0	1.69	125.0	4.92	60	2C x
N32-32FBSPP	2	2 - 11	47.0	1.85	143.0	5.63	75	3

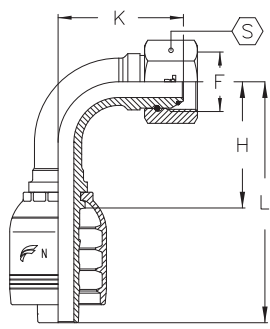
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FBSP45 BSPP Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FBSP45	3/8	3/8 - 19	42.0	1.65	73.0	2.87	19.0	0.75	22	7/8
N08-08FBSP45	1/2	1/2 - 14	49.0	1.93	82.0	3.23	22.0	0.86	27	1 1/16
N10-10FBSP45	5/8	5/8 - 14	54.0	2.12	90.0	3.54	24.0	0.94	30	1 7/16
N10-12FBSP45	5/8	3/4 - 14	57.0	2.24	93.0	3.66	26.0	1.02	32	1 1/4
N12-12FBSP45	3/4	3/4 - 14	67.0	2.64	118.0	4.64	29.0	1.14	32	1 1/4
N12-16FBSP45	3/4	1 - 11	67.0	2.64	121.0	4.76	32.0	1.26	41	1 5/8
N16-16FBSP45	1	1 - 11	86.0	3.38	142.0	5.62	36.0	1.41	41	1 5/8
N16-20FBSP45	1	1 1/4 - 11	86.0	3.38	143.0	5.59	37.0	1.47	50	2
N20-20FBSP45	1 1/4	1 1/4 - 11	103.0	4.05	169.0	6.65	43.0	1.69	50	2
N24-24FBSP45	1 1/2	1 1/2 - 11	123.0	4.84	206.0	8.11	51.0	2.01	60	2 3/8
N32-32FBSP45	2	2 - 11	160.0	6.30	257.0	1.01	65.0	2.55	75	3

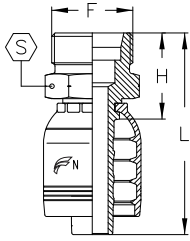
## FBSP90 BSPP Female Swivel - 90° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
N06-06FBSP90	3/8	3/8 - 19	31.0	1.22	61.0	2.40	35.0	1.38	22	7/8
N08-08FBSP90	1/2	1/2 - 14	37.0	1.46	70.0	2.75	42.0	1.65	27	1 1/16
N10-10FBSP90	5/8	5/8 - 14	45.0	1.77	80.0	3.15	46.0	1.81	30	1 7/16
N10-12FBSP90	5/8	3/4 - 14	45.0	1.77	80.0	3.15	50.0	1.97	32	1 1/4
N12-12FBSP90	3/4	3/4 - 14	55.0	2.16	106.0	4.17	57.0	2.24	32	1 1/4
N12-16FBSP90	3/4	1 - 11	55.0	2.16	106.0	4.17	57.0	2.24	41	1 5/8
N16-16FBSP90	1	1 - 11	71.0	2.79	128.0	5.04	72.0	2.83	41	1 5/8
N16-20FBSP90	1	1 1/4 - 11	71.0	2.79	128.0	5.04	72.0	2.83	50	2
N20-20FBSP90	1 1/4	1 1/4 - 11	87.0	3.42	154.0	6.06	88.0	3.46	50	2
N24-24FBSP90	1 1/2	1 1/2 - 11	105.0	4.13	188.0	7.40	104.0	4.09	60	2 3/8
N32-32FBSP90	2	2 - 11	140.0	5.51	237.0	9.33	137.0	5.39	75	3

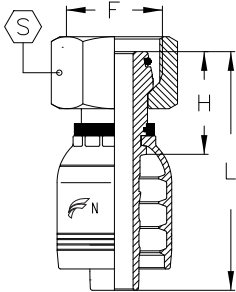




## MML Metric 24° Male Light - (CEL)



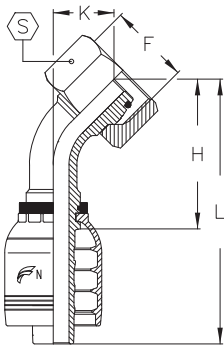
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	
N06-18MML	3/8	M18 x 1.5	L12	23	0.90	53	2.08	19	3/4
N08-22MML	1/2	M22 x 1.5	L15	26	1.02	59	2.32	22	7/8
N10-26MML	5/8	M26 x 1.5	L18	28	1.10	64	2.51	27	1 1/16
N12-30MML	3/4	M30 x 2.0	L22	32	1.26	83	3.27	30	1 7/16
N16-36MML	1	M36 x 2.0	L28	36	1.42	93	3.66	36	1 7/16
N20-45MML	1 1/4	M45 x 2.0	L35	43	1.69	109	4.29	46	1 13/16



## FML Metric 24° Female Light - (DKOL)



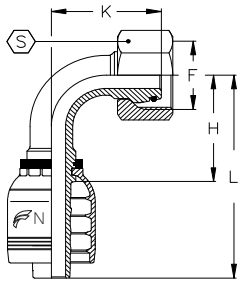
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	
N06-18FML	3/8	M18 x 1.5	L12	24	0.94	54	2.12	22	7/8
N08-22FML	1/2	M22 x 1.5	L15	24	0.94	57	2.24	27	1 1/16
N10-26FML	5/8	M26 x 1.5	L18	27	1.06	62	2.44	32	1 1/4
N12-30FML	3/4	M30 x 2.0	L22	31	1.22	82	3.23	36	1 7/16
N16-36FML	1	M36 x 2.0	L28	34	1.34	90	3.54	41	1 5/8
N20-45FML	1 1/4	M45 x 2.0	L35	39	1.54	106	4.17	50	2
N24-52FML	1 1/2	M52 x 2.0	L42	43	1.69	126	4.96	60	2 3/8



## FML Metric 24° Female Light - 45° Elbow (DKOL)



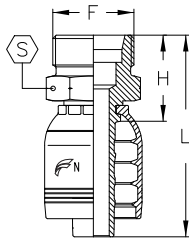
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	
N06-18FML45	3/8	M18 x 1.5	L12	40	1.22	71	2.80	18	.71	22	7/8
N08-22FML45	1/2	M22 x 1.5	L15	46	1.81	79	3.11	19	0.74	27	1 1/16
N10-26FML45	5/8	M26 x 1.5	L18	53	2.08	89	3.50	22	0.86	32	1 1/4
N12-30FML45	3/4	M30 x 2.0	L22	64	2.52	115	4.53	25	0.98	36	1 7/16
N16-36FML45	1	M36 x 2.0	L28	82	3.23	139	5.47	31	1.22	41	1 5/8
N20-45FML45	1 1/4	M45 x 2.0	L35	101	3.98	168	6.61	40	1.57	50	2
N24-52FML45	1 1/2	M52 x 2.0	L42	115	4.53	179	7.05	48	1.89	60	2 3/8



## FML90 Metric 24° Female Light - 90° Elbow (DKOL)



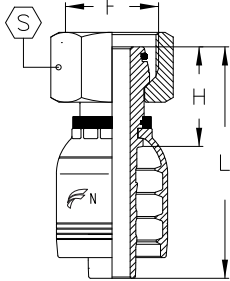
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
N06-18FML90	3/8	M18 x 1.5	L12	31	1.22	61	2.40	33	1.30	22	7/8
N08-22FML90	1/2	M22 x 1.5	L15	37	1.45	70	2.75	38	1.49	27	1 1/16
N10-26FML90	5/8	M26 x 1.5	L18	44	1.73	80	3.14	45	1.77	32	1 1/4
N12-30FML90	3/4	M30 x 2.0	L22	57	2.24	108	4.25	52	2.05	36	1 7/16
N16-36FML90	1	M36 x 2.0	L28	73	2.87	130	5.12	66	2.60	41	1 5/8
N20-45FML90	1 1/4	M45 x 2.0	L35	90	3.54	157	6.18	83	3.27	50	2
N24-52FML90	1 1/2	M52 x 2.0	L42	100	3.94	164	6.46	100	3.94	60	2 3/8



## MMS Metric 24° Male Heavy - (CES)



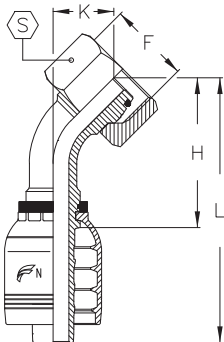
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
N06-20MMS	3/8	M20 x 1.5	S12	25.0	0.98	56.0	2.20	22	7/8
N06-22MMS	3/8	M22 x 1.5	S14	27.0	1.06	58.0	2.28	22	7/8
N08-22MMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	22	7/8
N08-24MMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	24	1
N10-30MMS	5/8	M30 x 2.0	S20	32.0	1.26	68.0	2.68	30	1 7/16
N12-30MMS	3/4	M30 x 2.0	S20	34.0	1.34	85.0	3.35	30	1 7/16
N12-36MMS	3/4	M36 x 2.0	S25	38.0	1.50	89.0	3.50	36	1 7/16
N16-36MMS	1	M36 x 2.0	S25	40.0	1.57	97.0	3.82	36	1 7/16
N16-42MMS	1	M42 x 2.0	S30	44.0	1.73	101.0	3.98	46	1 13/16
N20-42MMS	1 1/4	M42 x 2.0	S30	47.0	1.85	113.0	4.45	46	1 13/16
N20-52MMS	1 1/4	M52 x 2.0	S38	51.0	2.01	117.0	4.61	55	2 1/4
N24-52MMS	1 1/2	M52 x 2.0	S38	53.0	2.09	135.0	5.31	55	2 1/4



## FMS Metric 24° Female Heavy - (DKOS)



Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
N06-18FMS	3/8	M18 x 1.5	S10	25.0	0.98	55.0	2.16	22	7/8
N06-20FMS	3/8	M20 x 1.5	S12	24.0	0.94	54.0	2.12	24	1
N06-22FMS	3/8	M22 x 1.5	S14	28.0	1.10	58.0	2.28	27	1 1/16
N08-22FMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	27	1 1/16
N08-24FMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	30	1 1/16
N10-30FMS	5/8	M30 x 2.0	S20	33.0	1.30	69.0	2.72	36	1 1/16
N12-30FMS	3/4	M30 x 2.0	S20	37.0	1.46	88.0	3.46	36	1 1/16
N12-36FMS	3/4	M36 x 2.0	S25	39.0	1.53	90.0	3.54	46	1 13/16
N16-36FMS	1	M36 x 2.0	S25	41.0	1.61	97.0	3.82	46	1 13/16
N16-42FMS	1	M42 x 2.0	S30	42.0	1.65	98.0	3.86	50	2
N20-42FMS	1 1/4	M42 x 2.0	S30	43.0	1.69	109.0	4.29	50	2
N20-52FMS	1 1/4	M52 x 2.0	S38	48.0	1.89	115.0	4.53	60	2 3/8
N24-52FMS	1 1/2	M52 x 2.0	S38	51.0	2.01	133.0	5.24	60	2 3/8

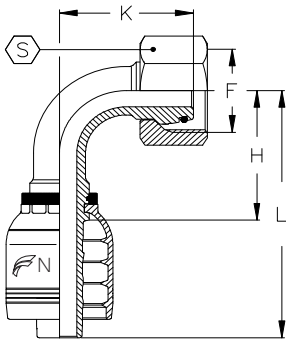
## FMS45 Metric 24° Female Heavy - 45° Elbow (DKOS)





Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
N06-18FMS45	3/8	M18 x 1.5	S10	40.0	1.57	70.0	2.75	17.0	0.67	22	7/8
N06-20FMS45	3/8	M20 x 1.5	S12	40.0	1.57	71.0	2.79	18.0	0.71	24	1
N06-22FMS45	3/8	M22 x 1.5	S14	42.0	1.65	72.0	2.83	19.0	0.75	27	1 1/16
N08-22FMS45	1/2	M22 x 1.5	S14	46.0	1.81	79.0	3.11	20.0	0.78	27	1 1/16
N08-24FMS45	1/2	M24 x 1.5	S16	47.0	1.85	80.0	3.15	21.0	0.83	30	1 1/16
N10-30FMS45	5/8	M30 x 2.0	S20	56.0	2.20	92.0	3.62	25.0	0.98	36	1 1/16
N12-30FMS45	3/4	M30 x 2.0	S20	65.0	2.56	116.0	4.57	27.0	1.06	36	1 1/16
N12-36FMS45	3/4	M36 x 2.0	S25	66.0	2.60	117.0	4.61	28.0	1.10	46	1 13/16
N16-36FMS45	1	M36 x 2.0	S25	83.0	3.27	140.0	5.51	34.0	1.34	46	1 13/16
N16-42FMS45	1	M42 x 2.0	S30	82.0	3.23	138.0	5.43	32.0	1.26	50	2
N20-42FMS45	1 1/4	M42 x 2.0	S30	100.0	3.94	166.0	6.53	40.0	1.57	50	2
N20-52FMS45	1 1/4	M52 x 2.0	S38	97.0	3.82	164.0	6.46	38.0	1.50	60	2 3/8
N24-52FMS45	1 1/2	M52 x 2.0	S38	121.0	4.76	203.0	7.99	48.0	1.89	60	2 3/8

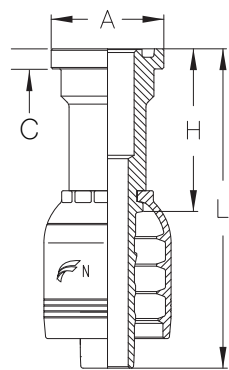
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## FMS90 Metric 24° Female Heavy - 90° Elbow - (DKOS)



Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
N06-18FMS90	3/8	M18 x 1.5	S10	30.0	1.18	61.0	2.40	33.0	1.30	22	7/8
N06-20FMS90	3/8	M20 x 1.5	S12	31.0	1.22	61.0	2.40	33.0	1.30	24	1
N06-22FMS90	3/8	M22 x 1.5	S14	34.0	1.34	64.0	2.52	37.0	1.46	27	1 1/16
N08-24FMS90	1/2	M24 x 1.5	S16	39.0	1.53	71.0	2.79	42.0	1.65	30	1 7/16
N10-30FMS90	5/8	M30 x 2.0	S20	44.0	1.73	80.0	3.15	49.0	1.93	36	1 7/16
N12-30FMS90	3/4	M30 x 2.0	S20	55.0	2.16	106.0	4.17	55.0	2.16	36	1 7/16
N12-36FMS90	3/4	M36 x 2.0	S25	55.0	2.16	106.0	4.17	55.0	2.16	46	1 13/16
N16-36FMS90	1	M36 x 2.0	S25	71.0	2.79	128.0	5.04	69.0	2.72	46	1 13/16
N16-42FMS90	1	M42 x 2.0	S30	71.0	2.79	128.0	5.04	67.0	2.64	50	2
N20-42FMS90	1 1/4	M42 x 2.0	S30	87.0	3.42	154.0	6.06	83.0	3.27	50	2
N20-52FMS90	1 1/4	M52 x 2.0	S38	87.0	3.42	154.0	6.06	80.0	3.15	60	2 3/8
N24-52FMS90	1 1/2	M52 x 2.0	S38	105.0	4.13	188.0	7.40	100.0	3.94	60	2 3/8

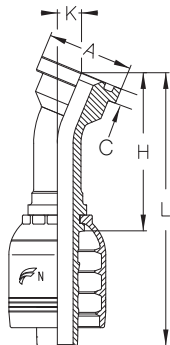
## FL Code 61 Flange




Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
N08-08FL	1/2	6.7	30.2	1.19	48.5	1.91	61.5	2.42	
N08-12FL	1/2	6.7	38.1	1.50	52.5	2.07	85.5	3.37	
N10-12FL	5/8	6.7	38.1	1.50	52.5	2.07	88.5	3.48	
N12-12FL	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	
N12-16FL	3/4	8.0	44.5	1.75	57.0	2.24	108.0	4.25	
N12-20FL	3/4	8.0	50.8	2.00	55.0	2.16	106.0	4.17	
N16-12FL	1	6.7	38.1	1.50	58.0	2.28	114.5	4.51	
N16-16FL	1	8.0	44.5	1.75	58.0	2.28	114.5	4.51	
N16-20FL	1	8.0	50.8	2.00	63.0	2.48	119.5	4.70	
N16-24FL	1	8.0	60.4	2.38	55.0	2.16	115.5	4.55	
N20-16FL	1 1/4	8.0	44.5	1.75	64.0	2.52	130.5	5.14	
N20-20FL	1 1/4	8.0	50.8	2.00	64.0	2.52	130.5	5.14	
N20-24FL	1 1/4	8.0	60.4	2.38	68.0	2.68	134.5	5.29	
N20-32FL	1 1/4	9.5	71.4	2.81	75.0	2.95	141.5	5.57	
N24-20FL	1 1/2	8.0	50.8	2.00	70.0	2.76	152.0	5.98	
N24-24FL	1 1/2	8.0	60.4	2.38	73.0	2.87	155.5	6.12	
N24-32FL	1 1/2	9.5	71.4	2.81	76.0	2.99	158.5	6.24	
N32-24FL	2	8.0	60.4	2.38	80.0	3.15	174	6.90	
N32-32FL	2	9.5	71.4	2.81	77.0	3.03	176.5	6.95	
N32-40FL	2	9.5	84.1	3.31	90.0	3.54	186.5	7.34	

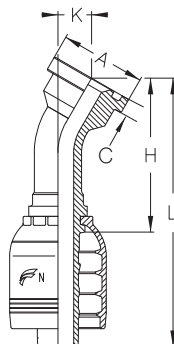
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## FL22 Code 61 Flange - 22° Elbow



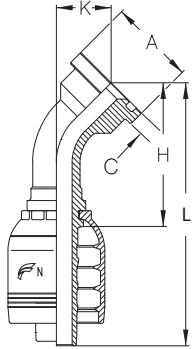
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL22	3/4	6.7	38.1	1.50	70.0	2.75	121.0	4.76	11.0	0.43	
N12-16FL22	3/4	8.0	44.5	1.75	73.0	2.87	124.0	4.88	12.0	0.47	
N16-16FL22	1	8.0	44.5	1.75	86.0	3.38	142.0	5.59	12.0	0.47	
N16-20FL22	1	8.0	50.8	2.00	86.0	3.38	142.0	5.59	12.0	0.47	
N20-20FL22	1 1/4	8.0	50.8	2.00	100.0	3.94	166.0	6.53	13.0	0.51	
N20-24FL22	1 1/4	8.0	60.3	2.37	100.0	3.94	166.0	6.53	13.0	0.51	
N24-24FL22	1 1/2	8.0	60.3	2.37	118.0	4.64	201.0	7.91	15.0	0.59	
N24-32FL22	1 1/2	9.5	71.4	2.81	116.0	4.57	199.0	7.83	14.0	0.55	
N32-32FL22	2	9.5	71.4	2.81	165.0	6.50	262.0	10.31	22.0	0.86	


## FL30 Code 61 Flange - 30° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL30	3/4	6.7	38.1	1.50	68.0	2.68	119.0	4.68	16.0	0.63	
N12-16FL30	3/4	8.0	44.5	1.75	71.0	2.79	122.0	4.80	17.0	0.67	
N16-16FL30	1	8.0	44.5	1.75	84.0	3.31	140.0	5.51	17.0	0.67	
N16-20FL30	1	8.0	50.8	2.00	84.0	3.31	140.0	5.51	17.0	0.67	
N20-20FL30	1 1/4	8.0	50.8	2.00	98.0	3.86	164.0	6.46	19.0	0.75	
N20-24FL30	1 1/4	8.0	60.4	2.38	98.0	3.86	164.0	6.46	19.0	0.75	
N24-24FL30	1 1/2	8.0	60.4	2.38	116.0	4.57	199.0	7.83	22.0	0.87	
N24-32FL30	1 1/2	9.5	71.4	2.81	114.0	4.49	197.0	7.75	21.0	0.83	
N32-32FL30	2	9.5	71.4	2.81	162.0	6.38	258.0	10.16	31.0	1.22	

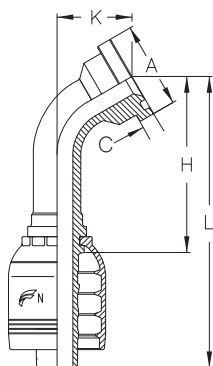
## FL45 Code 61 Flange - 45° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N08-08FL45	½	6.7	30.2	1.19	38.0	1.50	71.0	2.80	40.0	1.57	
N08-12FL45	½	6.7	38.1	1.50	38.0	1.50	71.0	2.80	45.0	1.77	
N10-12FL45	⅝	6.7	38.1	1.50	45.0	1.77	81.0	3.19	47.0	1.85	
N12-12FL45	¾	6.7	38.1	1.50	63.0	2.48	114.0	4.49	16.0	0.98	
N12-16FL45	¾	8.0	44.5	1.75	65.0	2.56	116.0	4.57	17.0	1.06	
N12-20FL45	¾	8.0	50.8	2.00	63.0	2.48	116.0	4.57	25.0	1.00	
N16-12FL45	1	6.7	38.1	1.50	81.0	3.19	137.0	5.39	31.0	1.22	
N16-16FL45	1	8.0	44.5	1.75	78.0	3.31	134.0	4.27	44.0	1.73	
N16-20FL45	1	8.0	50.8	2.00	78.0	3.31	134.0	4.27	31.0	2.01	
N20-16FL45	1	8.0	44.5	1.75	96.0	3.78	163.0	6.42	37.0	1.46	
N20-20FL45	1¼	8.0	50.8	2.00	91.0	3.86	157.0	6.18	32.0	1.26	
N20-24FL45	1¼	8.0	60.3	2.38	91.0	3.86	157.0	6.18	32.0	1.26	
N24-24FL45	1½	8.0	60.3	2.38	108.0	4.57	191.0	7.52	36.0	1.42	
N24-32FL45	1½	9.5	71.4	2.81	107.0	4.49	189.0	7.44	35.0	1.38	
N32-32FL45	2	9.5	71.4	2.81	157.0	6.38	245.0	9.65	57.0	2.24	
N32-40FL45	2	9.5	84.1	3.31	146.0	5.75	243.0	9.57	51.0	2.01	

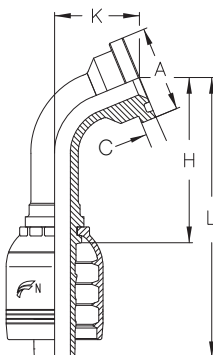
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## FL60 Code 61 Flange - 60° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL60	3/4	6.7	38.1	1.50	77.0	3.03	128.0	5.04	34.0	1.34	
N12-16FL60	3/4	8.0	44.5	1.75	79.0	3.11	130.0	5.12	37.0	1.46	
N16-16FL60	1	8.0	44.5	1.75	98.0	3.86	154.0	6.06	40.0	1.57	
N16-20FL60	1	8.0	50.8	2.00	98.0	3.86	154.0	6.06	40.0	1.57	
N20-20FL60	1 1/4	8.0	50.8	2.00	118.0	4.64	184.0	7.24	45.0	1.77	
N20-24FL60	1 1/4	8.0	60.4	2.38	118.0	4.64	184.0	7.24	45.0	1.77	
N24-24FL60	1 1/2	8.0	60.4	2.38	140.0	5.51	223.0	8.78	52.0	2.05	
N24-32FL60	1 1/2	9.5	71.4	2.81	139.0	5.47	222.0	8.74	50.0	1.97	
N32-32FL60	2	9.5	71.4	2.81	192.0	7.56	289.0	11.38	73.0	2.87	

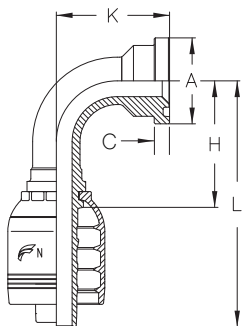
## FL67 Code 61 Flange - 67° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL67	3/4	6.7	38.1	1.50	72.0	2.83	123.0	4.84	39.0	1.53	
N12-16FL67	3/4	6.7	44.5	1.75	73.0	2.87	124.0	4.88	41.0	1.61	
N16-16FL67	1	8.0	44.5	1.75	92.0	3.62	148.0	5.83	45.0	1.77	
N16-20FL67	1	8.0	50.8	2.00	92.0	3.62	148.0	5.83	45.0	1.77	
N20-20FL67	1 1/4	8.0	50.8	2.00	111.0	4.37	178.0	7.01	52.0	2.05	
N20-24FL67	1 1/4	8.0	60.4	2.38	111.0	4.37	178.0	7.01	52.0	2.05	
N24-24FL67	1 1/2	8.0	60.4	2.38	133.0	5.24	216.0	8.50	60.0	2.36	
N24-32FL67	1 1/2	9.5	71.4	2.81	132.0	5.20	215.0	8.46	58.0	2.28	
N32-32FL67	2	9.5	71.4	2.81	181.0	7.12	278.0	10.94	84.0	3.31	

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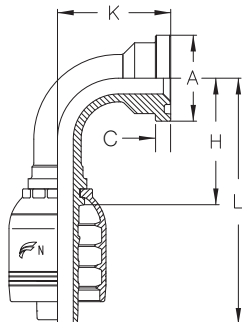
## FL90 Code 61 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N08-08FL90-042	1/2	6.7	30.2	1.19	41.0	1.61	74.0	2.91	42.0	1.65	
N08-12FL90-050	1/2	6.7	38.1	1.50	41.0	1.61	74.0	2.91	50.0	1.97	
N10-12FL90-047	5/8	6.7	38.1	1.50	49.0	1.93	85.0	3.35	47.0	2.17	
N12-12FL90-051	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	51.0	2.00	
N12-12FL90-096	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	96.0	3.77	
N12-12FL90-127	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	127.0	5.00	
N12-12FL90-150	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	150.0	5.90	
N12-16FL90-055	3/4	8.0	44.5	1.75	55.0	2.16	106.0	4.17	55.0	2.16	
N12-16FL90-079	3/4	8.0	44.5	1.75	55.0	2.16	106.0	4.17	79.0	3.11	
N12-20FL90-060	3/4	8.0	50.8	2.00	55.0	2.16	106.0	4.17	60.0	2.36	
N16-12FL90-065	3/4	6.7	38.1	1.50	71.0	2.79	128.0	5.03	65.0	2.56	
N16-16FL90-061	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	61.0	2.40	
N16-16FL90-118	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	118.0	4.64	
N16-16FL90-158	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	158.0	6.22	
N16-20FL90-061	1	8.0	50.8	2.00	71.0	2.79	128.0	5.03	61.0	2.40	
N16-20FL90-118	1	8.0	50.8	2.00	71.0	2.79	128.0	5.03	118.0	4.64	
N16-24FL90-061	1	8.0	60.4	2.38	71.0	2.79	128.0	5.03	61.0	2.40	
N20-16FL90-079	1 1/4	8.0	44.5	1.75	87.0	3.42	154.0	6.06	79.0	3.11	
N20-20FL90-071	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	71.0	2.79	
N20-20FL90-091	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	91.0	3.58	
N20-20FL90-102	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	102.0	4.01	
N20-20FL90-112	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	112.0	4.40	
N20-20FL90-130	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	130.0	5.11	
N20-20FL90-168	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	168.0	6.61	
N20-24FL90-071	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	71.0	2.79	
N20-24FL90-118	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	118.0	4.64	
N20-24FL90-130	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	130.0	5.11	

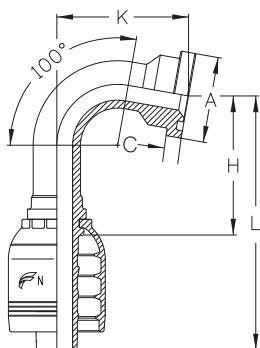



## FL90 Code 61 Flange - 90° Elbow



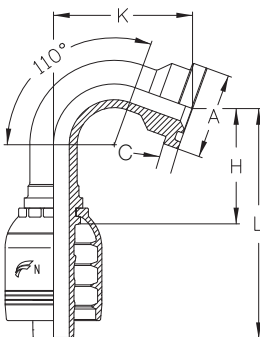
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N24-20FL90-090	1½	8.0	50.8	2.00	98.0	3.85	180.0	7.09	90.0	3.54	
N24-24FL90-083	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	83.0	3.26	
N24-24FL90-102	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	102.0	4.01	
N24-24FL90-148	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	148.0	5.82	
N24-24FL90-172	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	172.0	6.77	
N24-32FL90-081	1½	9.5	71.4	2.81	105.0	4.13	188.0	7.40	81.0	3.18	
N24-32FL90-115	1½	9.5	71.4	2.81	105.0	4.13	188.0	7.40	115.0	4.52	
N24-32FL90-172	1½	8.0	71.4	2.81	105.0	4.13	188.0	7.40	172.0	6.77	
N32-24FL90-081	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	81.0	3.19	
N32-24FL90-105	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	105.0	4.13	
N32-24FL90-152	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	152.0	5.98	
N32-24FL90-228	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	228.0	8.98	
N32-32FL90-122	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	122.0	4.80	
N32-32FL90-165	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	165.0	6.49	
N32-32FL90-203	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	203.0	7.99	
N32-40FL90-117	2	9.5	84.1	3.31	140.0	5.51	237.0	9.33	117.0	4.60	


## FL100 Code 61 Flange - 100° Elbow



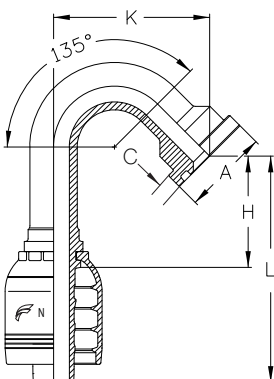
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL100-060	¾	6.7	38.1	1.50	61.0	2.40	112.0	4.41	60.0	2.36	
N16-16FL100-073	1	8.0	44.5	1.75	77.0	3.03	134.0	5.27	73.0	2.87	


## FL110 Code 61 Flange - 110° Elbow



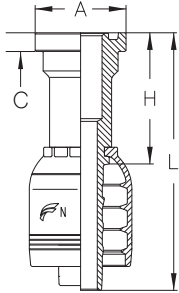
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL110-064	¾	6.7	38.1	1.50	51.0	2.01	102.0	4.01	64.0	2.52	
N16-16FL110-073	1	6.7	44.5	1.75	65.0	2.56	121.0	4.76	73.0	2.87	
N16-20FL110-073	1	8.0	50.8	2.00	65.0	2.56	121.0	4.76	73.0	2.87	
N20-20FL110-080	1¼	8.0	50.8	2.00	82.0	3.23	148.0	5.83	80.0	3.15	
N20-24FL110-081	1¼	8.0	60.4	2.38	82.0	3.23	148.0	5.83	81.0	3.19	
N24-24FL110-095	1½	8.0	60.4	2.38	95.0	3.74	178.0	7.01	95.0	3.74	
N32-32FL110-140	2	9.5	71.4	2.81	124.0	4.88	220.0	8.66	140.0	5.51	


## FL135 Code 61 Flange - 135° Elbow



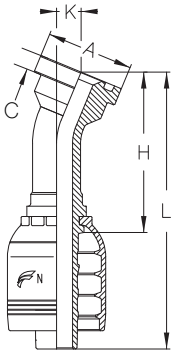
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FL135-069	¾	6.7	38.1	1.50	69.0	2.72	120.0	4.72	69.0	2.72	
N12-16FL135-070	¾	6.7	44.5	1.75	69.0	2.72	120.0	4.72	70.0	2.76	
N16-16FL135-088	1	8.0	44.5	1.75	57.0	2.24	113.0	4.45	88.0	3.46	


## FLH Code 62 Flange



Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
N08-08FLH	1/2	7.8	31.7	1.25	49.5	1.95	82.5	3.25	
N08-12FLH	1/2	8.8	41.3	1.62	52.5	2.07	89.0	3.50	
N10-12FLH	5/8	8.8	41.3	1.62	59.5	2.34	95.5	3.76	
N12-12FLH	3/4	8.8	41.3	1.62	59.5	2.34	110.0	4.33	
N12-16FLH	3/4	9.5	47.6	1.87	61.0	2.40	112.0	4.41	
N16-12FLH	1	8.8	41.3	1.62	65.0	2.56	121.5	4.78	
N16-16FLH	1	9.5	47.6	1.87	65.0	2.56	121.5	4.78	
N16-20FLH	1	10.3	54.0	2.12	69.0	2.72	125.5	4.94	
N20-16FLH	1 1/4	9.5	47.6	1.87	70.0	2.75	136.5	5.37	
N20-20FLH	1 1/4	10.3	54.0	2.12	70.0	2.75	136.5	5.37	
N20-24FLH	1 1/4	12.6	63.5	2.50	80.0	3.15	146.5	5.77	
N24-24FLH	1 1/2	12.6	63.5	2.50	84.0	3.31	116.5	4.59	
N24-20FLH	1 1/2	10.3	54.0	2.12	72.0	2.83	154.0	6.06	
N24-32FLH	1 1/2	12.6	79.4	3.12	99.0	3.90	181.5	7.14	
N32-32FLH	2	12.6	79.4	3.12	100.0	3.94	196.5	7.74	

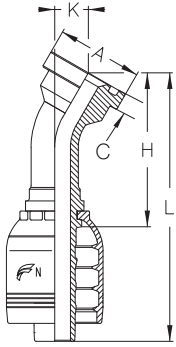
## FLH22 Code 62 Flange - 22° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLH22	3/4	8.8	41.3	1.62	74.0	2.91	125.0	4.92	13.0	0.51	
N12-16FLH22	3/4	9.5	47.6	1.87	76.0	2.99	127.0	5.00	14.0	0.55	
N16-16FLH22	1	9.5	47.6	1.87	89.0	3.50	145.0	5.70	13.0	0.51	
N16-20FLH22	1	10.3	54.0	2.12	89.0	3.50	145.0	5.70	13.0	0.51	
N20-20FLH22	1 1/4	10.3	54.0	2.12	103.0	4.05	169.0	6.65	15.0	0.59	
N20-24FLH22	1 1/4	12.6	63.5	2.50	104.0	4.09	171.0	6.73	15.0	0.59	
N24-24FLH22	1 1/2	12.6	63.5	2.50	123.0	4.84	206.0	8.11	17.0	0.66	
N24-32FLH22	1 1/2	12.6	79.4	3.12	127.0	5.00	210.0	8.26	19.0	0.74	
N32-32FLH22	2	12.6	79.4	3.12	166.0	6.53	263.0	10.35	24.0	0.94	

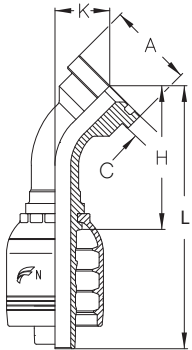
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## FLH30 Code 62 Flange - 30° Elbow



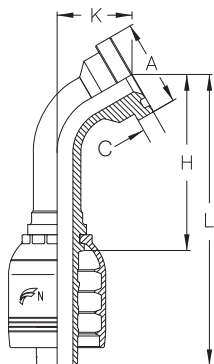
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLH30	3/4	8.8	41.3	1.62	72.0	2.83	123.0	4.84	18.0	0.70	
N12-16FLH30	3/4	9.5	47.6	1.87	74.0	2.91	125.0	4.92	19.0	0.74	
N16-16FLH30	1	9.5	47.6	1.87	87.0	3.42	143.0	5.62	19.0	0.74	
N16-20FLH30	1	10.3	54.0	2.12	87.0	3.42	143.0	5.62	19.0	0.74	
N20-20FLH30	1 1/4	10.3	54.0	2.12	100.0	3.93	167.0	6.57	20.0	0.78	
N20-24FLH30	1 1/4	12.6	63.5	2.50	102.0	4.01	168.0	6.61	21.0	0.82	
N24-24FLH30	1 1/2	12.6	63.5	2.50	121.0	4.76	203.0	7.99	24.0	0.94	
N24-32FLH30	1 1/2	12.6	79.4	3.12	124.0	4.88	207.0	8.14	26.0	1.02	
N32-32FLH30	2	12.6	79.4	3.12	162.0	6.37	259.0	10.19	34.0	1.33	


## FLH45 Code 62 Flange - 45° Elbow



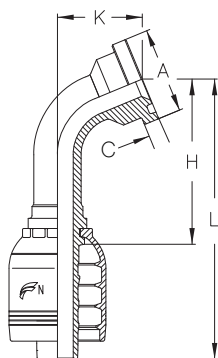
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N08-08FLH45	1/2	7.8	31.7	1.25	63.0	2.48	96.0	3.78	23.5	0.93	
N08-12FLH45	1/2	8.8	41.3	1.62	68.5	2.70	101.5	4.00	29.0	1.14	
N10-12FLH45	5/8	8.8	41.3	1.62	81.5	3.21	117.5	4.63	29.5	1.16	
N12-12FLH45	3/4	8.8	41.3	1.62	66.0	2.59	117.0	4.60	28.0	1.10	
N12-16FLH45	3/4	9.5	47.6	1.87	68.0	2.67	118.0	4.64	29.0	1.14	
N16-12FLH45	1	8.8	41.3	1.62	81.0	3.18	137.0	5.39	31.0	1.22	
N16-16FLH45	1	9.5	47.6	1.87	80.0	3.14	136.0	5.35	30.0	1.18	
N16-20FLH45	1	10.3	54.0	2.12	80.0	3.14	136.0	5.35	30.0	1.18	
N20-16FLH45	1 1/4	9.5	47.6	1.87	96.0	3.77	163.0	6.41	37.0	1.45	
N20-20FLH45	1 1/4	10.3	54.0	2.12	93.0	3.66	160.0	6.29	34.0	1.33	
N20-24FLH45	1 1/4	12.6	63.5	2.50	94.0	3.70	161.0	6.33	35.0	1.37	
N24-24FLH45	1 1/2	12.6	63.5	2.50	112.0	4.40	195.0	7.67	40.0	1.57	
N24-32FLH45	1 1/2	12.6	79.4	3.12	115.0	4.52	198.0	7.79	43.0	1.69	
N32-32FLH45	2	12.6	79.4	3.12	150.0	5.90	247.0	9.72	56.0	2.20	


## FLH60 Code 62 Flange - 60° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLH60	3/4	8.8	41.3	1.63	79.0	3.11	130.0	5.12	38.0	1.50	
N12-16FLH60	3/4	9.5	47.6	1.87	80.0	3.15	131.0	5.16	40.0	1.57	
N16-16FLH60	1	9.5	47.6	1.87	99.0	3.90	155.0	6.10	42.0	1.65	
N16-20FLH60	1	10.3	54.0	2.12	99.0	3.90	155.0	6.10	42.0	1.65	
N20-20FLH60	1 1/4	10.3	54.0	2.12	119.0	4.68	185.0	7.28	47.0	1.85	
N20-24FLH60	1 1/4	12.6	63.5	2.50	120.0	4.72	186.0	7.32	49.0	1.93	
N24-24FLH60	1 1/2	12.6	63.5	2.50	143.0	5.62	225.0	8.85	56.0	2.20	
N24-32FLH60	1 1/2	12.6	79.4	3.12	145.0	5.71	228.0	8.98	60.0	2.36	
N32-32FLH60	2	12.6	79.4	3.12	193.0	7.59	289.0	11.37	79.0	3.11	

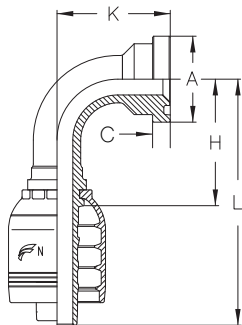
## FLH67 Code 62 Flange - 67° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLH67	3/4	8.8	41.3	1.63	74.0	2.91	125.0	4.92	43.0	1.69	
N12-16FLH67	3/4	9.5	47.6	1.87	75.0	2.95	126.0	4.96	45.0	1.77	
N16-16FLH67	1	9.5	47.6	1.87	93.0	3.66	150.0	5.90	48.0	1.88	
N16-20FLH67	1	10.3	54.0	2.12	93.0	3.66	150.0	5.90	48.0	1.88	
N20-20FLH67	1 1/4	10.3	54.0	2.12	112.0	4.40	179.0	7.04	54.0	2.12	
N20-24FLH67	1 1/4	12.6	63.5	2.50	113.0	4.45	180.0	7.09	56.0	2.20	
N24-24FLH67	1 1/2	12.6	63.5	2.50	135.0	5.31	217.0	8.54	65.0	2.55	
N24-32FLH67	1 1/2	12.6	79.4	3.12	137.0	5.39	219.0	8.62	69.0	2.72	
N32-32FLH67	2	12.6	79.4	3.12	182.0	7.16	278.0	10.94	90.0	3.54	

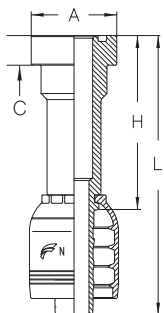
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FLH90 Code 62 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N08-08FLH90-042	1/2	7.8	31.7	1.25	41.0	1.61	74.0	2.91	42.0	1.65	
N08-12FLH90-050	1/2	8.8	41.3	1.62	41.0	1.61	74.0	2.91	50.0	1.97	
N10-12FLH90-055	5/8	8.8	41.3	1.62	49.0	1.93	85.0	3.35	55.0	2.17	
N12-12FLH90-056	3/4	8.8	41.3	1.62	55.0	2.16	106.0	4.17	56.0	2.20	
N12-12FLH90-100	3/4	8.8	41.3	1.62	55.0	2.16	106.0	4.17	100.0	3.93	
N12-12FLH90-175	3/4	8.8	44.3	1.62	55.0	2.16	106.0	4.17	175.0	6.89	
N12-16FLH90-058	3/4	9.5	47.6	1.87	55.0	2.16	106.0	4.17	58.0	2.28	
N12-16FLH90-140	3/4	9.5	47.6	1.87	55.0	2.16	106.0	4.17	140.0	5.51	
N16-12FLH90-065	1	8.8	41.3	1.62	71.0	2.79	128.0	5.03	65.0	2.55	
N16-16FLH90-064	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	64.0	2.51	
N16-16FLH90-120	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	120.0	4.72	
N16-16FLH90-150	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	150.0	5.90	
N16-20FLH90-064	1	10.3	54.0	2.12	71.0	2.79	128.0	5.03	64.0	2.51	
N20-16FLH90-079	1 1/4	9.5	47.6	1.87	87.0	3.42	154.0	6.06	79.0	3.11	
N20-20FLH90-074	1 1/4	10.3	54.0	2.12	87.0	3.42	154.0	6.06	74.0	2.91	
N20-20FLH90-120	1 1/4	10.3	54.0	2.12	87.0	3.42	154.0	6.06	120.0	4.72	
N20-20FLH90-180	1 1/4	10.3	54.0	2.12	87.0	3.45	154.0	6.06	180.0	7.08	
N20-24FLH90-076	1 1/4	12.6	63.5	2.50	87.0	3.42	154.0	6.06	76.0	2.99	
N24-24FLH90-088	1 1/2	12.6	63.5	2.50	105.0	4.13	188.0	7.40	88.0	3.46	
N24-32FLH90-093	1 1/2	12.6	79.4	3.12	105.0	4.13	188.0	7.40	93.0	3.66	
N32-32FLH90-123	2	12.6	79.4	3.12	140.0	5.51	237.0	9.33	123.0	4.84	

## FLC CAT® Flange

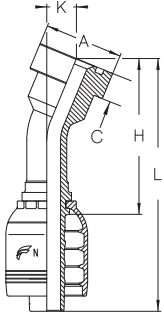


Use with D-Ring


Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
N12-12FLC	3/4	14.2	41.3	1.62	84.0	3.30	135.0	5.31	
N12-16FLC	3/4	14.2	47.6	1.87	84.0	3.30	135.0	5.31	
N16-16FLC	1	14.2	47.6	1.87	90.0	3.54	146.5	5.76	
N16-20FLC	1	14.2	54.0	2.12	90.0	3.54	146.5	5.76	
N20-20FLC	1 1/4	14.2	54.0	2.12	88.0	3.46	154.4	6.07	
N20-24FLC	1 1/4	14.2	63.5	2.50	88.0	3.46	154.5	6.07	
N24-24FLC	1 1/2	14.2	63.5	2.50	84.0	3.31	166.0	6.53	
N24-32FLC	1 1/2	14.2	79.4	3.12	110.0	4.33	192.0	7.56	
N32-32FLC	2	14.2	79.4	3.12	130.0	5.12	220.0	8.90	

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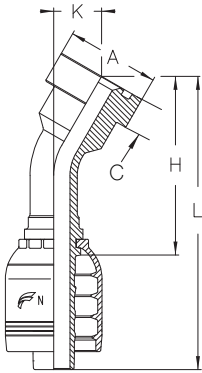
## FLC22 CAT® Flange - 22° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC22	3/4	14.2	41.3	1.62	82.0	3.22	133.0	5.23	16.0	0.62	
N12-16FLC22	3/4	14.2	47.6	1.87	84.0	3.30	135.0	5.31	17.0	0.66	
N16-16FLC22	1	14.2	47.6	1.87	97.0	3.81	153.0	6.02	17.0	0.66	
N16-20FLC22	1	14.2	54.0	2.12	97.0	3.81	153.0	6.02	17.0	0.66	
N20-20FLC22	1 1/4	14.2	54.0	2.12	106.0	4.17	172.0	6.77	16.0	0.62	
N20-24FLC22	1 1/4	14.2	63.5	2.50	106.0	4.17	174.0	6.85	16.0	0.62	
N24-24FLC22	1 1/2	14.2	63.5	2.50	125.0	4.92	208.0	8.19	18.0	0.71	
N24-32FLC22	1 1/2	14.2	79.4	3.12	129.0	5.08	211.0	8.31	19.0	0.75	
N32-32FLC22	2	14.2	79.4	3.12	168.0	6.61	265.0	10.43	25.0	0.98	

## FLC30 CAT® Flange - 30° Elbow

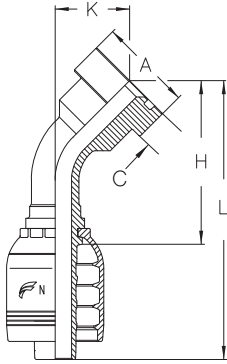


Use with D-Ring


Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC30	3/4	14.2	41.3	1.62	79.0	3.11	130.0	5.11	22.0	0.86	
N12-16FLC30	3/4	14.2	47.6	1.87	82.0	3.22	133.0	5.23	23.0	0.90	
N16-16FLC30	1	14.2	47.6	1.87	94.0	3.70	151.0	5.94	23.0	0.90	
N16-20FLC30	1	14.2	54.0	2.12	94.0	3.70	151.0	5.94	23.0	0.90	
N20-20FLC30	1 1/4	14.2	54.0	2.12	103.0	4.05	170.0	6.69	22.0	0.86	
N20-24FLC30	1 1/4	14.2	63.5	2.50	104.0	4.09	170.0	6.69	23.0	0.90	
N24-24FLC30	1 1/2	14.2	63.5	2.50	123.0	4.84	205.0	8.07	25.0	0.98	
N24-32FLC30	1 1/2	14.2	79.4	3.12	126.0	4.96	208.0	8.19	27.0	1.06	
N32-32FLC30	2	14.2	79.4	3.12	164.0	6.46	264.0	10.39	35.0	1.38	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

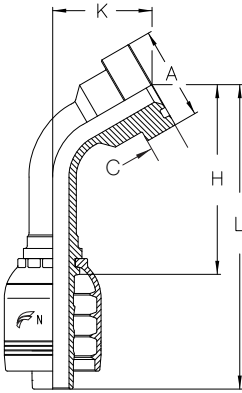
## FLC45 CAT® Flange - 45° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC45	3/4	14.2	41.3	1.62	72	2.83	123.0	4.84	34.0	1.33	
N12-16FLC45	3/4	14.2	47.6	1.87	74	2.91	125.0	4.92	36.0	1.41	
N16-16FLC45	1	14.2	47.6	1.87	86	3.38	143.0	5.62	36.0	1.41	
N16-20FLC45	1	14.2	54.0	2.12	86	3.38	143.0	5.62	36.0	1.41	
N20-20FLC45	1 1/4	14.2	54.0	2.12	96	3.77	162.0	6.37	36.0	1.41	
N20-24FLC45	1 1/4	14.2	63.5	2.50	96	3.77	162.0	6.37	36.0	1.41	
N24-24FLC45	1 1/2	14.2	63.5	2.50	114.0	4.49	196.0	7.72	41.0	1.61	
N24-32FLC45	1 1/2	14.2	79.4	3.12	116.0	4.57	199.0	7.83	44.0	1.73	
N32-32FLC45	2	14.2	79.4	3.12	152.0	5.98	250.0	9.84	57.0	2.24	

## FLC60 CAT® Flange - 60° Elbow

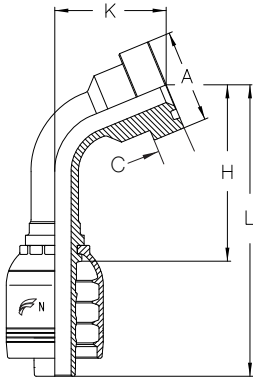


Use with D-Ring


Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC60	3/4	14.2	41.3	1.62	83.0	3.26	134.0	5.27	45.0	1.77	
N12-16FLC60	3/4	14.2	47.6	1.87	85.0	3.34	136.0	5.35	48.0	1.88	
N16-16FLC60	1	14.2	47.6	1.87	103.0	4.05	160.0	6.29	50.0	1.96	
N16-20FLC60	1	14.2	54.0	2.12	103.0	4.05	160.0	6.29	50.0	1.96	
N20-20FLC60	1 1/4	14.2	54.0	2.12	121.0	4.76	187.0	7.36	50.0	1.96	
N20-24FLC60	1 1/4	14.2	63.5	2.50	121.0	4.76	187.0	7.36	51.0	2.00	
N24-24FLC60	1 1/2	14.2	63.5	2.50	144.0	5.67	226.0	8.90	58.0	2.28	
N24-32FLC60	1 1/2	14.2	79.4	3.12	146.0	5.75	228.0	8.98	61.0	2.40	
N32-32FLC60	2	14.2	79.4	3.12	194.0	7.64	290.0	11.42	81.0	3.19	



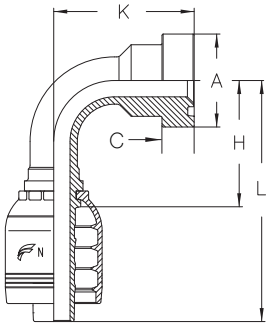
## FLC67 CAT® Flange - 67° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC67	3/4	14.2	41.3	1.62	77.0	3.03	128.0	5.03	50.0	1.96	
N12-16FLC67	3/4	14.2	47.6	1.87	79.0	3.11	130.0	5.11	53.0	2.08	
N16-16FLC67	1	14.2	47.6	1.87	97.0	3.81	153.0	6.02	56.0	2.20	
N20-20FLC67	1 1/4	14.2	54.0	2.12	114.0	4.48	181.0	7.12	57.0	2.24	
N24-24FLC60	1 1/2	14.2	63.5	2.50	137.0	5.39	219.0	8.62	66.0	2.60	
N24-32FLC60	1 1/2	14.2	79.4	3.12	138.0	5.43	220.0	8.66	69.0	2.72	
N32-32FLC60	2	14.2	79.4	3.12	184.0	7.24	280.0	11.02	92.0	3.62	

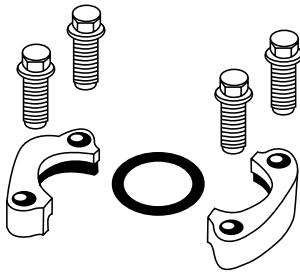
## FLC90 CAT® Flange - 90° Elbow



Use with D-Ring

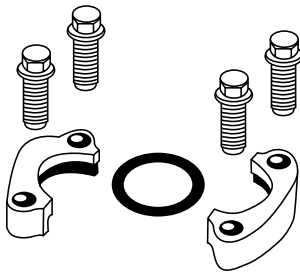
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
N12-12FLC90-064	3/4	14.2	41.3	1.62	55.0	2.16	106.0	4.17	64.0	2.52	
N12-12FLC90-129	3/4	14.2	41.3	1.62	55.0	2.16	106.0	4.17	129.0	5.07	
N12-16FLC90-064	3/4	14.2	47.6	1.87	55.0	2.16	106.0	4.17	64.0	2.51	
N16-16FLC90-073	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	73.0	2.87	
N16-16FLC90-132	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	132.0	5.19	
N16-16FLC90-150	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	150.0	5.90	
N16-20FLC90-073	1	14.2	54.0	2.12	71.0	2.79	128.0	5.03	73.0	2.87	
N20-20FLC90-077	1 1/4	14.2	54.0	2.12	87.0	3.42	154.0	6.06	77.0	3.03	
N20-20FLC90-150	1 1/4	14.2	54.0	2.12	87.0	3.42	154.0	6.06	150.0	5.90	
N20-24FLC90-078	1 1/4	14.2	63.5	2.50	87.0	3.42	154.0	6.06	78.0	3.07	
N20-24FLC90-135	1 1/4	14.2	63.5	2.50	87.0	3.42	154.0	6.06	135.0	5.31	
N24-24FLC90-090	1 1/2	14.2	63.5	2.50	105.0	4.13	188.0	7.40	90.0	3.54	
N24-24FLC90-106	1 1/2	14.2	63.5	2.50	87.0	3.42	154.0	6.06	106.0	4.17	
N24-32FLC90-094	1 1/2	14.2	79.4	3.13	105.0	4.13	188.0	7.40	94.0	3.70	
N32-32FLC90-125	2	14.2	79.4	3.13	140.0	5.51	237.0	9.33	125.0	4.92	

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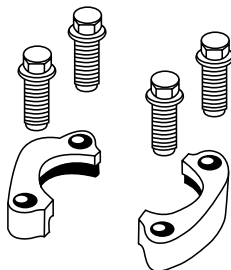
## 1901 Code 61 Split Flange Kit

Part Number	Size
1901-08-K	1/2
1901-12-K	3/4
1901-16-K	1
1901-20-K	1 1/4
1901-24-K	1 1/2
1901-32-K	2
1901-40-K	2 1/2



## 1902 Code 62 Split Flange Kit

Part Number	Size
1902-08-K	1/2
1902-12-K	3/4
1902-16-K	1
1902-20-K	1 1/4
1902-24-K	1 1/2
1902-32-K	2



D-Ring not included

## 1903 CAT® Split Flange Kit

Part Number	Size
1903-12-K	3/4
1903-16-K	1
1903-20-K	1 1/4
1903-24-K	1 1/2
1903-32-K	2

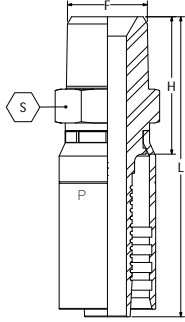
## O-Rings / D-Rings





Size	Standard 61/62 O-Ring	High Pressure 61/62 O-Ring	CAT D-Ring
1/2	OF-08	OO-08	OC-08
3/4	OF-12	OO-12	OC-12
1	OF-16	OO-16	OC-16
1 1/4	OF-20	OO-20	OC-20
1 1/2	OF-24	OO-24	OC-24
2	OF-32	OO-32	OC-32
2 1/2	OF-40	--	--

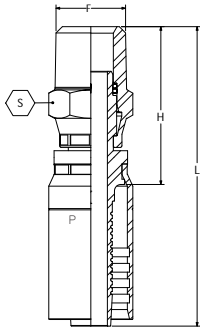
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## MP NPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
P02-02MP	1/8	1/8 - 27	19.1	0.75	32.8	1.29	12.7	1/2
P02-04MP	1/8	1/8 - 18	23.9	0.94	37.6	1.48	15.9	5/8
P03-02MP	3/16	1/8 - 27	26.9	1.06	47.5	1.87	14.3	9/16
P03-04MP	3/16	1/4 - 18	31.8	1.25	52.3	2.06	17.5	11/16
P04-02MP	1/4	1/8 - 27	25.4	1	53.8	2.12	15.9	5/8
P04-04MP	1/4	1/4 - 18	30.2	1.19	58.7	2.31	17.5	11/16
P04-06MP	1/4	3/8 - 18	33.3	1.31	61.0	2.40	19.1	3/4
P05-04MP	5/16	1/4 - 18	30.2	1.19	58.7	2.31	17.5	11/16
P05-06MP	5/16	3/8 - 18	31.8	1.25	61.0	2.40	19.1	3/4
P06-04MP	3/8	1/4 - 18	33.3	1.31	65.8	2.59	19.7	3/4
P06-06MP	3/8	3/8 - 18	33.3	1.31	65.8	2.59	19.1	3/4
P06-08MP	3/8	1/2 - 14	36.6	1.44	59.4	2.34	23.8	15/16
P08-06MP	1/2	3/8 - 18	33.3	1.31	70.6	2.78	22.2	7/8
P08-08MP	1/2	1/2 - 14	38.1	1.50	77.0	3.03	23.8	15/16
P12-12MP	3/4	3/4 - 11 1/2	41.4	1.63	81.5	3.21	28.6	1 1/8
P16-16MP	1	1 - 11 1/2	47.8	1.88	100.6	3.96	34.9	1 3/8

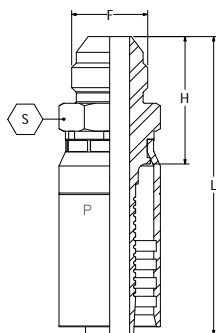
## MPX NPT Male Swivel





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
P02-02MPX	1/8	1/8 - 27	49.3	1.94	48.3	1.90	12.7	1/2
P04-04MPX	1/4	1/4 - 18	46.0	1.81	73.2	2.88	17.5	11/16
P05-04MPX	3/8	1/4 - 18	44.5	1.75	73.2	2.88	17.5	11/16
P06-06MPX	3/8	3/8 - 18	49.3	1.94	80.5	3.17	19.0	3/4
P08-08MPX	1/2	1/2 - 14	54.1	2.13	91.7	3.61	23.8	15/16
P12-12MPX	3/4	3/4 - 14	55.6	2.19	98.0	3.86	28.6	1 1/8
P16-16MPX	1	1 - 11 1/2	66.8	2.63	118.6	4.67	38.1	1 1/2

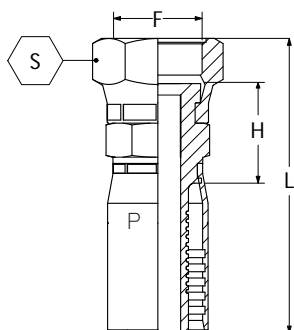
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## MJ 37° Male



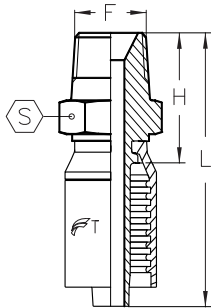
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
P04-04MJ	1/4	7/16 - 20	31.8	1.25	58.3	2.30	15.9	5/8
P04-05MJ	1/4	1/2 - 20	31.8	1.25	58.3	2.30	15.9	5/8
P04-06MJ	1/4	9/16 - 18	33.3	1.31	60.8	2.40	19.1	3/4
P05-06MJ	5/16	9/16 - 18	30.2	1.19	58.4	2.30	17.5	11/16
P06-06MJ	3/8	9/16 - 18	33.3	1.31	65.6	2.58	19.0	3/4
P06-08MJ	3/8	3/4 - 16	36.6	1.44	68.2	2.68	20.6	13/16
P08-08MJ	1/2	3/4 - 16	35.1	1.38	72.9	2.87	22.2	7/8
P12-12MJ	3/4	1 1/16 - 12	41.4	1.63	84.5	3.33	28.6	1 1/8
P16-16MJ	1	1 5/16 - 12	47.8	1.88	100.0	3.94	34.9	1 3/8



## FJ JIC 37° Female Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
P02-03FJ	1/5	7/16 - 20	27.0	1.06	40.9	1.61	14.3	9/16
P02-04FJ	1/4	7/16 - 20	27.0	1.06	40.9	1.61	14.3	9/16
P03-04FJ	1/5	7/16 - 20	31.8	1.25	52.3	2.06	14.3	9/16
P04-04FJ	1/4	7/16 - 20	31.8	1.25	58.6	2.31	14.3	9/16
P04-05FJ	1/4	7/16 - 20	49.3	1.94	60.2	2.37	15.9	5/8
P04-06FJ	1/4	9/16 - 18	35.1	1.38	62.4	2.46	17.5	11/16
P05-05FJ	5/16	7/16 - 20	34.9	1.38	54.6	2.15	15.9	5/8
P05-06FJ	1/3	9/16 - 18	49.3	1.94	61.8	2.43	17.5	11/16
P06-06FJ	3/8	9/16 - 18	35.1	1.38	66.5	2.62	17.5	11/16
P06-08FJ	3/8	3/4 - 16	38.1	1.50	69.9	2.75	22.2	7/8
P08-08FJ	7/16	3/4 - 16	36.6	1.44	74.5	2.93	22.2	7/8
P08-10FJ	7/16	7/8 - 14	39.6	1.56	77.6	3.06	25.4	1
P12-12FJ	3/4	1 1/16 - 12	55.6	2.19	98.3	3.87	31.8	1 1/4
P16-16FJ	1	1 5/16 - 12	66.8	2.63	119.0	4.69	38.1	1 7/8

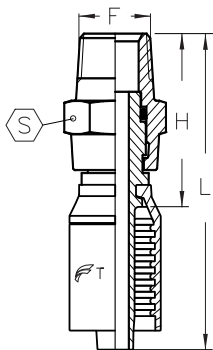
## MP NPT Male





Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T02-02MP	1/8	1/8 - 27	21.0	0.83	36.0	1.42	12	1/2
T03-02MP	3/16	1/8 - 27	20.6	0.81	45.6	1.79	12	1/2
T03-04MP	3/16	1/4 - 18	26.5	1.04	51.5	2.03	14	9/16
T04-02MP	1/4	1/8 - 27	21.1	0.83	49.1	1.93	12	1/2
T04-04MP	1/4	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
T04-06MP	1/4	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
T04-08MP	1/4	1/2 - 14	34.0	1.34	62.0	2.44	22	7/8
T05-04MP	5/16	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
T05-06MP	5/16	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
T06-04MP	3/8	1/4 - 18	27.5	1.08	58.0	2.28	16	5/8
T06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19	3/4
T06-08MP	3/8	1/2 - 14	34.0	1.34	64.5	2.54	22	7/8
T08-04MP	1/2	1/4 - 18	30.5	1.20	63.2	2.49	22	7/8
T08-06MP	1/2	3/8 - 18	30.6	1.20	63.6	2.50	22	7/8
T08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22	7/8
T08-12MP	1/2	3/4 - 14	36.9	1.45	69.9	2.75	27	1 1/16
T10-08MP	5/8	1/2 - 14	36.2	1.42	72.0	2.83	25	1
T10-12MP	5/8	3/4 - 14	37.1	1.46	72.9	2.87	27	1 1/16
T12-08MP	3/4	1/2 - 14	37.5	1.48	78.0	3.07	27	1 1/16
T12-12MP	3/4	3/4 - 14	37.9	1.49	78.4	3.09	27	1 1/16
T12-16MP	3/4	1 - 11 1/2	45.5	1.79	86.0	3.38	35	1 7/16
T16-12MP	1	3/4 - 14	40.4	1.59	91.4	3.60	32	1 1/4
T16-16MP	1	1 - 11 1/2	47.0	1.85	98.0	3.86	35	1 7/16

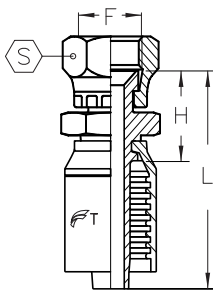
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
## MPX NPT Male Swivel



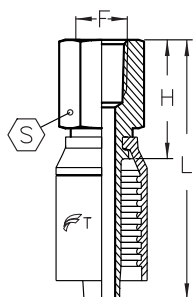
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T02-02MPX	1/8	1/8 - 27	33.0	1.30	48.0	1.89	13	1/2
T04-04MPX	1/4	1/4 - 18	41.0	1.61	69.0	2.72	17	1 1/16
T04-06MPX	1/4	3/8 - 18	46.0	1.81	74.0	2.91	22	7/8
T06-04MPX	3/8	1/4 - 18	41.0	1.61	72.0	2.83	17	1 1/16
T06-06MPX	3/8	3/8 - 18	45.0	1.77	75.0	2.95	22	7/8
T06-08MPX	3/8	1/2 - 14	57.0	2.24	88.0	3.46	27	1 1/16
T08-06MPX	1/2	3/8 - 18	46.0	1.81	79.0	3.11	22	7/8
T08-08MPX	1/2	1/2 - 14	56.0	2.20	89.0	3.50	27	1 1/16
T12-12MPX	3/4	3/4 - 14	61.0	2.40	101.0	3.98	34	1 3/8
T16-16MPX	1	1 - 11 1/2	65.0	2.56	116.0	4.57	38	1 1/2

## FPX NPSM Female Swivel (60° Cone Seat)



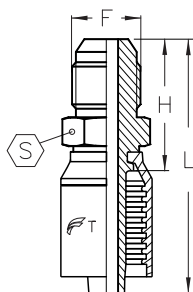
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-04FPX	1/4	1/4 - 18	19.0	0.75	47.0	1.85	17	1 1/16
T06-06FPX	3/8	3/8 - 18	21.0	0.83	51.0	2.00	22	7/8
T08-08FPX	1/2	1/2 - 14	23.0	0.90	56.0	2.20	25	1
T12-12FPX	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
T16-16FPX	1	1 - 11 1/2	30.0	1.18	81.0	3.19	38	1 1/2

## FP NPT Female Rigid



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-02FP	1/4	1/8 - 27	21.5	0.85	49.5	1.95	16	5/8
T04-04FP	1/4	1/4 - 18	27.1	1.07	55.1	2.17	19	3/4
T04-06FP	1/4	3/8 - 18	28.4	1.12	56.4	2.22	22	7/8
T06-04FP	3/8	1/4 - 18	27.1	1.07	57.6	2.27	19	3/4
T06-06FP	3/8	3/8 - 18	28.4	1.12	58.9	2.32	22	7/8
T06-08FP	3/8	1/2 - 14	34.5	1.36	65.0	2.56	29	1 3/16
T08-08FP	1/2	1/2 - 14	35.5	1.40	68.5	2.70	29	1 3/16
T12-12FP	3/4	3/4 - 14	38.0	1.50	78.5	3.09	32	1 1/4

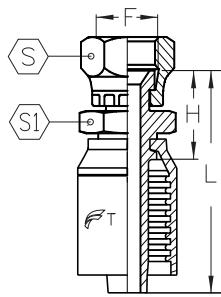
## MJ JIC 37° Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T03-04MJ	3/16	7/16 - 20	25.0	0.98	50.0	1.97	12	1/2
T04-04MJ	1/4	7/16 - 20	25.5	1.00	53.5	2.11	12	1/2
T04-05MJ	1/4	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
T04-06MJ	1/4	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
T05-05MJ	5/16	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
T05-06MJ	5/16	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
T06-06MJ	3/8	9/16 - 18	26.6	1.05	57.1	2.25	15	5/8
T06-08MJ	3/8	3/4 - 16	29.7	1.17	60.2	2.37	19	3/4
T08-08MJ	1/2	3/4 - 16	30.7	1.21	63.7	2.51	19	3/4
T08-10MJ	1/2	7/8 - 14	35.3	1.39	68.3	2.69	24	1
T08-12MJ	1/2	1 1/16 - 12	38.9	1.53	71.9	2.83	27	1 1/16
T10-10MJ	5/8	7/8 - 14	35.5	1.40	71.3	2.81	24	1
T10-12MJ	5/8	1 1/16 - 12	39.1	1.54	74.9	2.95	27	1 1/16
T12-12MJ	3/4	1 1/16 - 12	39.9	1.57	80.4	3.16	27	1 1/16
T16-16MJ	1	1 5/16 - 12	43.6	1.72	94.6	3.72	34	1 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

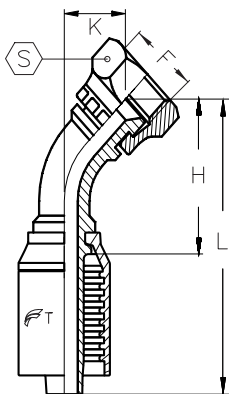
## FJ JIC 37° Female Swivel





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T02-04FJ	1/8	7/16 - 20	20.0	0.79	35.0	1.38	14	9/16	12	1/2
T03-04FJ	3/16	7/16 - 20	19.0	0.75	44.0	1.73	14	9/16	12	1/2
T04-04FJ	1/4	7/16 - 20	20.5	0.81	48.5	1.91	14	9/16	14	9/16
T04-05FJ	1/4	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
T04-06FJ	1/4	9/16 - 18	22.0	0.87	50.0	1.97	19	3/4	14	9/16
T05-05FJ	5/16	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
T05-06FJ	5/16	9/16 - 18	22.5	0.88	50.5	1.99	19	3/4	16	5/8
T06-04FJ	3/8	7/16 - 20	21.0	0.83	51.5	2.03	14	9/16	16	5/8
T06-05FJ	3/8	1/2 - 20	21.5	0.85	52.0	2.05	17	11/16	16	5/8
T06-06FJ	3/8	9/16 - 18	22.5	0.88	53.0	2.09	19	3/4	16	5/8
T06-06FJ-01	3/8	9/16 - 18	22.5	0.88	53.0	2.09	17.5	11/16	16	5/8
T06-08FJ	3/8	3/4 - 16	24.5	0.96	55.0	2.16	22	7/8	19	3/4
T06-10FJ	3/8	7/8 - 14	36.5	1.44	57.0	2.24	27	1 1/16	22	7/8
T08-06FJ	1/2	9/16 - 18	24.5	0.96	57.5	2.26	19	3/4	19	3/4
T08-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
T08-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	1 1/16	22	7/8
T08-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
T10-08FJ	5/8	3/4 - 16	26.7	1.05	62.5	2.46	22	7/8	22	7/8
T10-10FJ	5/8	7/8 - 14	27.7	1.09	63.5	2.50	27	1 1/16	22	7/8
T10-12FJ	1 1/16	1 1/16 - 12	30.5	1.20	66.3	2.61	32	1 1/4	25	1
T12-10FJ	3/4	7/8 - 14	30.0	1.18	70.5	2.77	27	1 1/16	27	1 1/16
T12-12FJ	3/4	1 1/16 - 12	31.8	1.25	72.3	2.85	32	1 1/4	27	1 1/16
T12-14FJ	3/4	1 3/16 - 12	34.5	1.36	75.0	2.95	36	1 7/16	30	1 3/16
T12-16FJ	3/4	1 5/16 - 12	35.5	1.40	76.0	2.99	38	1 1/2	32	1 1/4
T16-16FJ	1	1 5/16 - 12	37.0	1.46	88.0	3.46	38	1 1/2	32	1 1/4



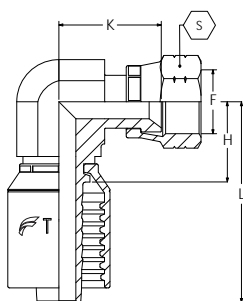
## FJ45 JIC 37° Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T03-04FJ45	3/16	7/16 - 20	29.0	1.14	54.0	2.12	10.0	0.39	14	9/16
T04-04FJ45	1/4	7/16 - 20	31.0	1.22	59.0	2.32	10.0	0.39	14	9/16
T04-05FJ45	1/4	1/2 - 20	32.0	1.26	60.0	2.36	11.0	0.43	17	11/16
T04-06FJ45	1/4	9/16 - 18	33.0	1.30	61.0	2.40	12.0	0.47	19	3/4
T05-05FJ45	5/16	1/2 - 20	33.0	1.30	61.0	2.40	11.0	0.43	17	11/16
T05-06FJ45	5/16	9/16 - 18	34.0	1.34	62.0	2.44	12.0	0.47	19	3/4
T06-06FJ45	3/8	9/16 - 18	35.5	1.40	66.0	2.60	12.0	0.47	19	3/4
T06-08FJ45	3/8	3/4 - 16	37.5	1.48	68.0	2.68	14.0	0.55	22	7/8
T08-08FJ45	1/2	3/4 - 16	41.0	1.61	74.0	2.91	14.5	0.57	22	7/8
T08-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.63	27	11/16
T08-12FJ45	1/2	1 1/16 - 12	45.5	1.79	78.5	3.09	19.0	0.75	32	1 1/4
T10-10FJ45	5/8	7/8 - 14	47.0	1.85	83.0	3.27	16.0	0.63	27	1 1/16
T10-12FJ45	5/8	1 1/16 - 12	50.0	1.97	86.0	3.38	19.0	0.75	32	1 1/4
T12-12FJ45	3/4	1 1/16 - 12	57.0	2.24	97.0	3.82	20.0	0.79	32	1 1/4
T16-16FJ45	1	1 5/16 - 12	72.0	2.83	123.0	4.84	24.0	0.94	38	1 1/2

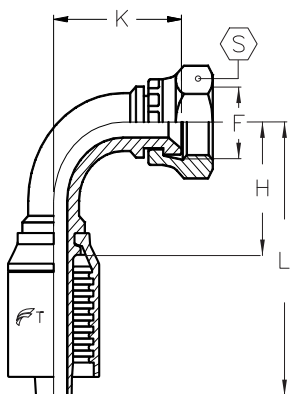
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FJ90B JIC 37° Female Swivel - 90° Block Elbow



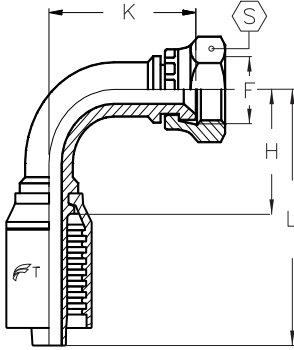
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T04-04FJ90B	1/4	1/4 - 19	18	0.71	46	1.81	23	0.91	19	3/4
T06-06FJ90B	3/8	3/8 - 19	21	0.83	52	2.05	26	1.02	22	7/8
T08-08FJ90B	1/2	1/2 - 14	24	0.94	57	2.24	28	1.10	27	1 1/16



## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop



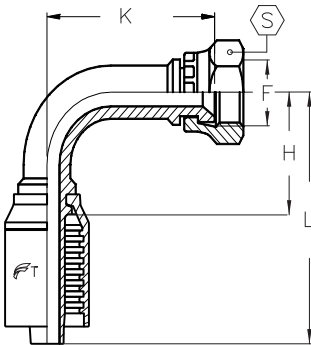
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T02-04FJ90S	1/8	7/16 - 20	28.0	1.10	43.0	1.69	22.2	0.87	14	9/16
T03-04FJ90S	3/16	7/16 - 20	21.0	0.83	46.0	1.81	18	0.71	14	9/16
T04-04FJ90S	1/4	7/16 - 20	25.5	1.00	53.5	2.11	20	0.79	14	9/16
T04-05FJ90S	1/4	1/2 - 20	25.5	1.00	53.5	2.11	21	0.83	17	11/16
T04-06FJ90S	1/4	9/16 - 18	25.5	1.00	53.5	2.11	23	0.90	19	3/4
T06-06FJ90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	23	0.90	19	3/4
T06-08FJ90S	3/8	3/4 - 16	31.0	1.22	61.5	2.42	29	1.14	22	7/8
T08-08FJ90S	1/2	3/4 - 16	37.0	1.46	70.0	2.75	29	1.14	22	7/8
T08-10FJ90S	1/2	7/8 - 14	38.0	1.50	71.0	2.79	33	1.30	27	1 1/16
T08-12FJ90S	1/2	1 1/16 - 12	40.0	1.57	73.0	2.87	40	1.57	32	1 1/4
T10-10FJ90S	5/8	7/8 - 14	43.0	1.69	79.0	3.11	32	1.26	27	1 1/16
T10-12FJ90S	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	40	1.57	32	1 1/4
T12-12FJ90S	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	43	1.69	32	1 1/4
T16-16FJ90S	1	1 5/16 - 12	71.0	2.79	122.0	4.80	56	2.20	38	1 1/2



## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T03-04FJ90M	3/16	7/16 - 20	21.0	0.83	46.0	1.81	21.0	0.83	14	9/16
T04-04FJ90M	1/4	7/16 - 20	25.5	1.00	53.5	2.11	26.0	1.02	14	9/16
T04-05FJ90M	1/4	1/2 - 20	25.5	1.00	53.5	2.11	26.0	1.02	17	11/16
T04-06FJ90M	1/4	9/16 - 18	25.5	1.00	53.5	2.11	27.0	1.06	19	3/4
T05-05FJ90M	5/16	1/2 - 20	28.0	1.10	56.0	2.20	29.0	1.14	17	11/16
T05-06FJ90M	5/16	9/16 - 18	28.0	1.10	56.0	2.20	29.0	1.14	19	3/4
T06-06FJ90M	3/8	9/16 - 18	31.0	1.22	61.5	2.42	33.0	1.30	19	3/4
T06-08FJ90M	3/8	3/4 - 16	31.0	1.22	61.5	2.42	33.0	1.30	22	7/8
T08-08FJ90M	1/2	3/4 - 16	37.0	1.46	70.0	2.75	39.0	1.53	22	7/8
T08-12FJ90M	1/2	1 1/16 - 12	37.0	1.46	70.0	2.76	45.0	1.97	32	1 1/4
T08-10FJ90M	1/2	7/8 - 14	37.0	1.46	70.0	2.75	40.0	1.57	27	1 1/16
T10-10FJ90M	5/8	7/8 - 14	45.0	1.77	81.0	3.19	45.0	1.77	27	1 1/16
T10-12FJ90M	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	47.0	1.85	32	1 1/4
T12-12FJ90M	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	53.0	2.09	32	1 1/4
T12-16FJ90M	3/4	1 5/16 - 12	55.0	2.16	95.0	3.74	56.0	2.20	38	1 1/2
T16-16FJ90M	1	1 5/16 - 12	71.0	2.79	122.0	4.80	70.0	2.75	38	1 1/2

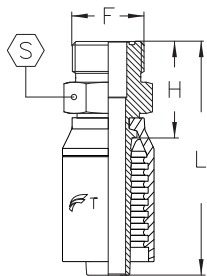
## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	int
T04-04FJ90L	1/4	7/16 - 20	25.5	1.00	53.5	2.11	46.0	1.81	14	9/16
T04-05FJ90L	1/4	1/2 - 20	25.5	1.00	53.5	2.11	46.0	1.81	17	11/16
T04-06FJ90L	1/4	9/16 - 18	25.5	1.00	53.5	2.11	54.0	2.12	19	3/4
T06-06FJ90L	3/8	9/16 - 18	31.0	1.22	61.5	2.42	54.0	2.12	19	3/4
T06-08FJ90L	3/8	3/4 - 16	31.0	1.22	61.5	2.42	64.0	2.52	22	7/8
T08-08FJ90L	1/2	3/4 - 16	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
T08-10FJ90L	1/2	7/8 - 14	38.0	1.50	71.0	2.79	70.0	2.75	27	1 1/16
T12-12FJ90L	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	96.0	3.78	32	1 1/4
T16-16FJ90L	1	1 5/16 - 12	71.0	2.79	122	4.80	114.0	4.49	38	1 1/2

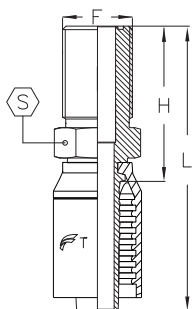
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## MF ORFS Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	int
T04-04MF	1/4	9/16 - 18	23.5	0.92	51.5	2.02	17	11/16
T04-06MF	1/4	11/16 - 16	25.5	1.00	53.5	2.10	19	3/4
T06-06MF	3/8	11/16 - 16	25.5	1.00	56.0	2.20	19	3/4
T06-08MF	3/8	13/16 - 16	28.5	1.12	59.0	2.32	22	7/8
T06-10MF	3/8	1 - 14	33.0	1.29	63.5	2.50	27	11/16
T08-08MF	1/2	13/16 - 16	29.5	1.16	62.5	2.46	22	7/8
T08-10MF	1/2	1 - 14	34.0	1.33	67.0	2.63	27	11/16
T12-12MF	3/4	13/16 - 12	38.0	1.49	78.5	3.09	32	11/4
T16-16MF	1	17/16 - 12	44.0	1.73	95.0	3.74	41	15/8

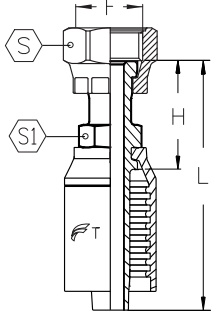
## MFK ORFS Male Bulkhead






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T06-06MFK*	3/8	11/16 - 16	47.0	1.85	77.0	3.03	19	3/4
T08-08MFK*	1/2	13/16 - 16	50.0	2.00	83.0	3.26	22	7/8

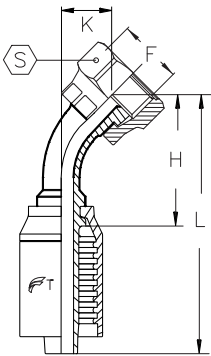
\*Locknut not included.



## FF ORFS Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T02-04FF	1/8	9/16 - 18	27.0	1.07	42.0	1.65	17	11/16	14	9/16
T04-04FF	1/4	9/16 - 18	26.5	1.04	54.5	2.14	17	11/16	14	9/16
T04-06FF	1/4	11/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
T05-06FF	5/16	11/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
T06-04FF	3/8	9/16 - 18	26.5	1.04	57.0	2.24	17	11/16	16	5/8
T06-06FF	3/8	11/16 - 16	28.5	1.12	59.0	2.32	22	7/8	16	5/8
T06-08FF	3/8	13/16 - 16	32.5	1.27	63.0	2.48	24	1	19	3/4
T08-06FF	1/2	11/16 - 16	30.5	1.20	63.5	2.50	22	7/8	19	3/4
T08-08FF	1/2	13/16 - 16	33.5	1.31	66.5	2.61	24	1	19	3/4
T08-10FF	1/2	1 - 14	39.5	1.55	72.5	2.85	30	1 3/16	24	1
T08-12FF	1/2	1 3/16 - 12	43.5	1.71	76.5	3.01	36	1 7/16	27	1 1/16
T12-12FF	3/4	1 3/16 - 12	44.5	1.75	85.0	3.34	36	1 7/16	27	1 1/16
T16-16FF	1	1 7/16 - 12	49.0	1.92	100.0	3.93	41	1 5/8	36	1 7/16

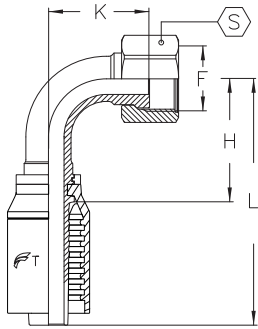
## FF45 ORFS Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	int
T04-04FF45	1/4	9/16 - 18	32.5	1.27	60.5	2.38	10.5	0.41	17	11/16
T04-06FF45	1/4	11/16 - 16	34.5	1.35	62.5	2.46	12.5	0.49	22	7/8
T05-06FF45	5/16	11/16 - 16	35.0	1.37	63.0	2.48	12.5	0.49	22	7/8
T06-06FF45	3/8	11/16 - 16	36.0	1.41	66.5	2.61	12.5	0.49	22	7/8
T06-08FF45	3/8	1 3/16 - 16	38.5	1.51	69.0	2.71	15.0	0.59	24	1
T08-06FF45	1/2	11/16 - 16	46.5	1.83	79.5	3.12	19.5	0.76	22	7/8
T08-08FF45	1/2	1 3/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
T08-10FF45	1/2	1 - 14	45.0	1.77	78.0	3.07	17.5	0.68	30	1 3/16
T08-12FF45	1/2	1 3/16 - 12	47.0	1.85	80.0	3.14	20.5	0.80	36	1 7/16
T12-12FF45	3/4	1 3/16 - 12	58.0	2.28	99.0	3.89	21.0	0.82	36	1 7/16
T16-16FF45	1	1 7/16 - 12	73.0	2.87	124.0	4.88	24.0	0.94	41	1 5/8

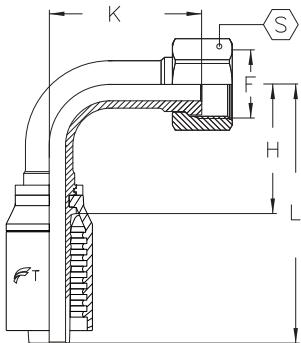
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FF90S ORFS Female Swivel - 90° Elbow Short Drop



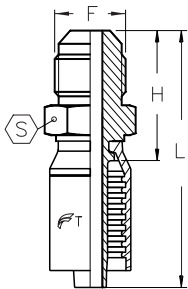
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	int
T02-04FF90S	1/8	9/16 - 18	28.7	1.13	42.6	1.68	18.0	0.78	17	1 1/16
T04-04FF90S	1/4	9/16 - 18	27.0	1.06	55.0	2.17	21.0	0.82	17	1 1/16
T04-06FF90S	1/4	1 1/16 - 16	27.0	1.06	55.0	2.17	24.0	0.94	22	7/8
T05-06FF90S	5/16	1 1/16 - 16	29.0	1.14	57.0	2.24	25.0	0.98	22	7/8
T06-04FF90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	22.0	0.87	17	1 1/16
T06-06FF90S	3/8	1 1/16 - 16	31.5	1.24	62.0	2.44	24.5	0.96	22	7/8
T06-08FF90S	3/8	1 3/16 - 16	31.0	1.22	61.0	2.40	30.0	1.18	24	1
T08-08FF90S	1/2	1 3/16 - 16	39.0	1.54	72.0	2.83	31.0	1.22	24	1
T08-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	1 3/16
T08-12FF90S	1/2	1 3/16 - 12	39.0	1.54	72.0	2.83	42.0	1.65	36	1 7/16
T12-12FF90S	3/4	1 3/16 - 12	55.0	2.17	95.0	3.74	45.0	1.77	36	1 7/16
T16-16FF90S	1	1 7/16 - 12	71.0	2.79	122.0	4.80	55.0	2.17	41	1 5/8

## FF90L ORFS Female Swivel - 90° Elbow Long Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	int
T04-04FF90L	1/4	9/16 - 18	29.0	1.14	57.0	2.24	46.0	1.81	17	1 1/16
T04-06FF90L	1/4	1 1/16 - 16	27.0	1.06	55.0	2.16	54.0	2.12	22	7/8
T06-06FF90L	3/8	1 1/16 - 16	34.0	1.33	64.5	2.53	54.0	2.12	22	7/8
T06-08FF90L	3/8	1 3/16 - 16	34.0	1.33	64.5	2.53	64.0	2.51	24	1
T08-08FF90L	1/2	1 3/16 - 16	39.0	1.53	72.0	2.83	64.0	2.51	24	1
T08-10FF90L	1/2	1 - 14	39.0	1.53	72.0	2.83	70.0	2.75	30	1 3/16
T12-12FF90L	3/4	1 3/16 - 12	55.0	2.17	95.0	3.70	96.0	3.77	36	1 7/16
T16-16FF90L	1	1 7/16 - 12	71.0	2.79	122.0	4.76	114.0	4.48	41	1 5/8

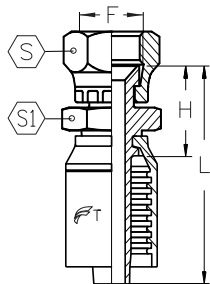
## MA SAE 45° Male






Part Number		F	H		L			
	in		mm	in	mm	in	in	
T06-06MA	3/8	5/8 - 18	28.2	1.11	58.7	2.21	16	5/8
T12-12MA	3/4	1 1/16 - 14	43.4	1.71	83.9	3.30	27	1 1/16

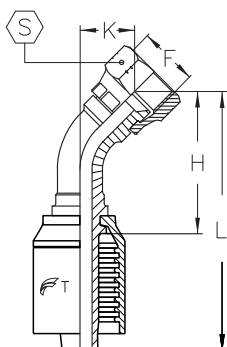
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FA SAE 45° Female Swivel



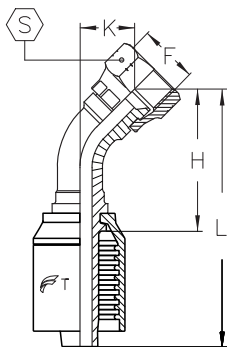
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T04-06FA	1/4	5/8 - 18	23.0	0.90	51.0	2.01	22	7/8	16	5/8
T05-06FA	5/16	5/8 - 18	23.5	0.92	51.5	2.02	22	7/8	16	5/8
T06-06FA	3/8	5/8 - 18	23.5	0.92	54.0	2.12	22	7/8	16	5/8
T10-12FA	5/8	1 1/16 - 14	31.8	1.25	78.0	3.07	32	1 1/4	25	1
T12-12FA	3/4	1 1/16 - 14	31.8	1.25	72.3	3.27	32	1 1/4	27	1 1/16



## FA45 SAE 45° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	in	mm	in	
T06-06FA45	3/8	5/8 - 18	39.0	1.53	69.5	2.74	16.0	0.63	22	7/8
T12-12FA45	3/4	1 1/16 - 14	62.0	2.44	103.0	4.05	25.0	0.98	32	1 1/4

## FA90 SAE 45° Female Swivel - 90° Elbow



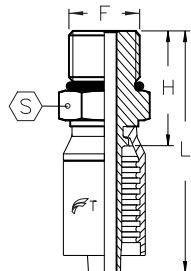
Part Number		F	H		L		K			
	in		mm	in	mm	in	in	mm	in	
T06-06FA45	3/8	5/8 - 18	39.0	1.53	69.5	2.74	16.0	0.63	22	7/8
T12-12FA45	3/4	1 1/16 - 14	62.0	2.44	103.0	4.05	25.0	0.98	32	1 1/4

2

T Series - Thermoplastic / Teflon Hose

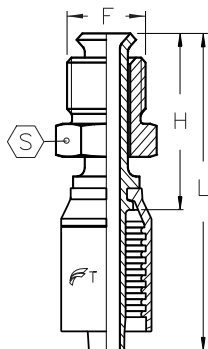
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## MOB O-Ring Boss Male



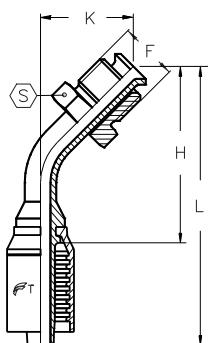
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-04MOB	1/4	7/16 - 20	21.7	0.85	49.7	1.96	14	9/16
T04-05MOB	1/4	1/2 - 20	22.2	0.87	50.2	1.98	16	5/8
T04-06MOB	1/4	9/16 - 18	23.5	0.92	51.5	2.03	17	11/16
T06-06MOB	3/8	9/16 - 18	23.5	0.92	54.0	2.12	17	11/16
T06-08MOB	3/8	3/4 - 16	26.2	1.03	56.7	2.23	22	7/8
T06-10MOB	3/8	7/8 - 14	28.0	1.10	58.5	2.30	25	1
T08-08MOB	1/2	3/4 - 16	27.2	1.07	60.2	2.37	22	7/8
T08-10MOB	1/2	7/8 - 14	29.7	1.17	62.7	2.47	25	1
T08-12MOB	1/2	1 1/16 - 12	33.6	1.32	66.6	2.62	32	1 1/4
T12-12MOB	3/4	1 1/16 - 12	34.6	1.36	75.1	2.96	32	1 1/4
T16-16MOB	1	1 5/16 - 12	37.6	1.48	88.6	3.49	38	1 1/2

## MIX SAE Inverted Flare Male Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-03MIX	1/4	3/8 - 24	38.3	1.51	66.8	2.63	9	3/8
T04-04MIX	1/4	7/16 - 24	39.1	1.54	67.8	2.67	11	7/16
T04-05MIX	1/4	1/2 - 20	42.2	1.66	70.6	2.78	12	1/2
T06-04MIX	3/8	7/16 - 24	39.9	1.57	70.6	2.78	11	7/16
T06-05MIX	3/8	1/2 - 20	42.4	1.67	73.1	2.88	12	1/2
T06-06MIX	3/8	5/8 - 18	43.7	1.72	74.4	2.93	16	5/8
T06-08MIX	3/8	3/4 - 18	48.5	1.91	79.2	3.12	19	3/4
T08-08MIX	1/2	3/4 - 18	49.0	1.93	82.3	3.24	19	3/4

## MIX45 SAE Inverted Flare Male Swivel - 45° Elbow

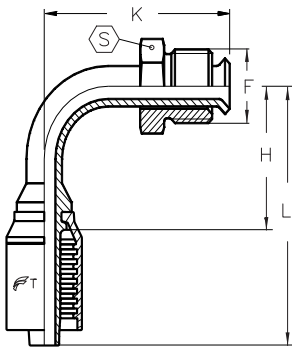




Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T04-03MIX45	1/4	3/8 - 24	41.6	1.64	70.1	2.76	13.5	0.53	9	3/8
T04-04MIX45	1/4	7/16 - 24	51.8	2.04	80.3	3.16	14.5	0.57	11	7/16
T04-05MIX45	1/4	1/2 - 20	52.1	2.05	81.5	3.21	16.5	0.65	12	1/2
T06-05MIX45	3/8	1/2 - 20	50.0	1.97	80.5	3.17	16.5	0.65	12	1/2
T06-06MIX45	3/8	5/8 - 18	52.6	2.07	83.0	3.27	18.0	0.71	16	5/8
T06-08MIX45	3/8	3/4 - 18	63.0	2.48	93.5	3.68	21.6	0.85	19	3/4
T08-08MIX45	1/2	3/4 - 18	64.8	2.55	97.8	3.85	21.6	0.85	19	3/4

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

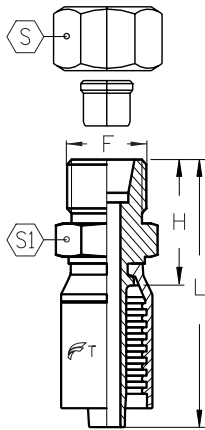





## MIX90 SAE Inverted Flare Male Swivel - 90° Elbow



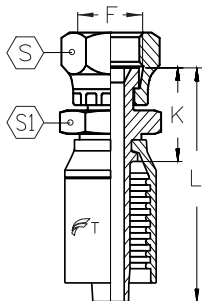
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T04-03MIX90	1/4	3/8 - 24	32.5	1.28	61.0	2.40	24.6	0.97	9	3/8
T04-04MIX90	1/4	7/16 - 24	40.4	1.59	68.8	2.71	27.9	1.10	11	7/16
T04-05MIX90	1/4	1/2 - 20	42.7	1.68	71.1	2.80	32.5	1.28	12	1/2
T06-05MIX90	3/8	1/2 - 20	43.4	1.71	73.9	2.91	32.5	1.28	12	1/2
T06-06MIX90	3/8	5/8 - 18	48.3	1.90	78.7	3.10	36.8	1.45	16	5/8
T06-08MIX90	3/8	3/4 - 18	55.6	2.19	86.1	3.39	45.2	1.78	19	3/4
T08-08MIX90	1/2	3/4 - 18	56.1	2.21	89.1	3.51	45.2	1.78	19	3/4




## MRNS SAE Flareless Male Assembly



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T04-04MRNS	1/4	7/16 - 20	24.0	0.94	51.0	2.01	14	9/16	14	9/16
T04-05MRNS	1/4	1/2 - 20	25.3	1.00	53.0	2.09	16	5/8	17	11/16
T06-05MRNS	3/8	1/2 - 20	26.0	1.02	55.6	2.19	16	5/8	17	11/16
T06-06MRNS	3/8	9/16 - 18	26.8	1.05	55.6	2.19	17	11/16	17	11/16
T06-08MRNS	3/8	3/4 - 16	30.0	1.18	58.5	2.30	22	7/8	19	3/4
T08-08MRNS	1/2	3/4 - 16	30.4	1.20	61.3	2.41	22	7/8	19	3/4
T08-10MRNS	1/2	7/8 - 14	32.3	1.27	63.4	2.50	25	1	24	1
T12-12MRNS	3/4	1 1/16 - 12	35.7	1.40	74.7	2.94	32	1 1/4	27	1 1/16
T16-16MRNS	1	1 5/16 - 12	36.7	1.44	87.7	3.54	38	1 1/2	36	1 1/16

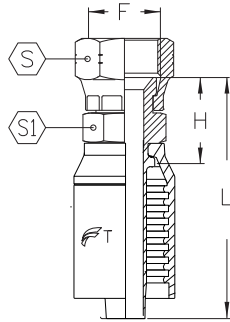
## FJIS JIS Female Swivel (Toyota)






Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T04-04FJIS	1/4	1/4 - 19	24.0	0.94	52.0	2.05	19	3/4	14	9/16
T06-06FJIS	3/8	3/8 - 19	26.0	1.02	57.0	2.24	22	7/8	17	11/16
T08-08FJIS	1/2	1/2 - 14	30.0	1.18	63.0	2.48	27	1 1/16	22	7/8
T12-12FJIS	3/4	3/4 - 14	36.0	1.42	76.0	2.99	32	1 1/4	27	1 1/16
T16-16FJIS	1	1 - 11	40.0	1.57	91.0	3.58	41	1 5/8	32	1 1/4

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FK Komatsu Female Swivel

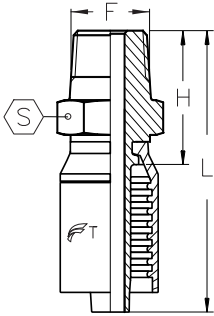




Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
T04-14FK	1/4	M14 x 1.5	24.0	0.94	52.5	2.06	19	3/4	19	3/4
T06-14FK	3/8	M14 x 1.5	24.0	0.94	54.5	2.14	19	3/4	19	3/4
T06-16FK	3/8	M16 x 1.5	22.2	0.87	52.7	2.07	22	7/8	19	3/4
T06-18FK	3/8	M18 x 1.5	24.3	0.95	54.8	2.15	24	1	19	3/4
T08-22FK	1/2	M22 x 1.5	26.5	1.04	59.5	2.34	27	1 1/16	27	1 1/16
T08-24FK	1/2	M24 x 1.5	29.9	1.17	62.9	2.47	32	1 1/4	32	1 1/4
T12-30FK	3/4	M30 x 1.5	33.0	1.29	74.0	2.91	36	1 7/16	36	1 7/16

## 2

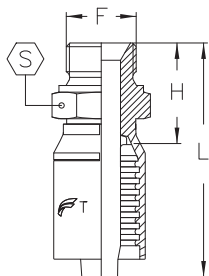
## T Series - Thermoplastic / Teflon Hose



## MBSPT BSPT Male



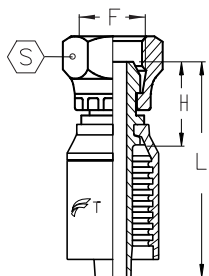
Part Number		F	H		L			
	in		mm	in	mm	in	mm	
T04-04MBSPT	1/4	1/4 - 19	25.0	0.98	53.0	2.09	15	5/8
T06-06MBSPT	3/8	3/8 - 19	27.0	1.06	57.0	2.24	19	3/4
T08-08MBSPT	1/2	1/2 - 14	33.0	1.30	66.0	2.60	22	7/8



## MBSPP BSPP Male



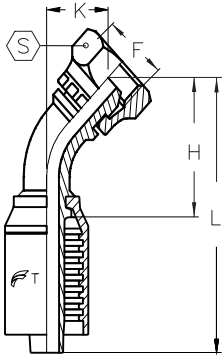
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-02MBSPP	1/4	1/8 - 28	20	0.79	48	1.89	14	9/16
T04-04MBSPP	1/4	1/4 - 19	25	0.98	53	2.09	19	3/4
T04-06MBSPP	1/4	3/8 - 19	27	1.06	55	2.16	22	7/8
T06-06MBSPP	3/8	3/8 - 19	27	1.06	58	2.28	22	7/8
T06-08MBSPP	3/8	1/2 - 14	32	1.26	62	2.44	27	1 1/16
T08-08MBSPP	1/2	1/2 - 14	33	1.30	66	2.60	27	1 1/16
T12-12MBSPP	3/4	3/4 - 14	37	1.46	77	3.03	32	1 1/4
T16-16MBSPP	1	1 - 11	43	1.69	94	3.70	41	1 5/8



## FBSPP BSPP Female Swivel



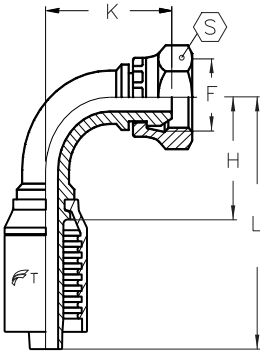
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
T04-02FBSPP	1/4	1/8 - 28	17.0	0.67	45.0	1.77	14	9/16
T04-04FBSPP	1/4	1/4 - 19	19.0	0.75	47.0	1.85	19	3/4
T04-06FBSPP	1/4	3/8 - 19	22.0	0.87	50.0	1.97	22	7/8
T05-06FBSPP	5/16	3/8 - 19	22.0	0.87	50.0	1.97	22	7/8
T06-04FBSPP	3/8	1/4 - 19	19.0	0.75	49.0	1.93	19	3/4
T06-06FBSPP	3/8	3/8 - 19	21.0	0.83	51.0	2.01	22	7/8
T06-08FBSPP	3/8	1/2 - 14	23.0	0.90	54.0	2.12	27	1 1/16
T08-08FBSPP	1/2	1/2 - 14	23.0	0.90	56.0	2.20	27	1 1/16
T08-10FBSPP	1/2	5/8 - 14	24.0	0.94	57.0	2.24	30	1 3/16
T12-12FBSPP	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
T16-16FBSPP	1	1 - 11	30.0	1.18	81.0	3.19	41	1 5/8



## FBSPP45 BSPP Female Swivel - 45° Elbow



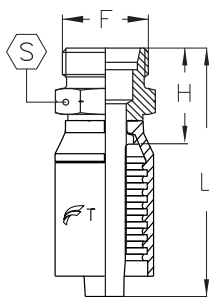
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T04-02FBSPP45	1/4	1/8 - 28	36.0	1.42	64.0	2.52	16.0	0.63	14	9/16
T04-04FBSPP45	1/4	1/4 - 19	37.0	1.46	65.0	2.56	16.0	0.63	19	3/4
T04-06FBSPP45	1/4	3/8 - 19	40.0	1.57	68.0	2.68	19.0	0.75	22	7/8
T05-06FBSPP45	5/16	3/8 - 19	41.0	1.61	69.0	2.72	19.0	0.75	22	7/8
T06-06FBSPP45	3/8	3/8 - 19	42.0	1.65	73.0	2.87	19.0	0.75	22	7/8
T06-08FBSPP45	3/8	1/2 - 14	44.0	1.73	75.0	2.95	21.0	0.83	27	1 1/16
T08-08FBSPP45	1/2	1/2 - 14	49.0	1.93	82.0	3.23	22.0	0.87	27	1 1/16
T08-10FBSPP45	1/2	5/8 - 14	49.0	1.93	82.0	3.23	22.0	0.87	30	1 3/16
T12-12FBSPP45	3/4	3/4 - 14	66.0	2.60	106.0	4.17	28.0	1.10	32	1 1/4
T16-16FBSPP45	1	1 - 11	84.0	3.31	135.0	5.31	36.0	1.42	41	1 5/8



## FBSPP90 BSPP Female Swivel - 90° Elbow



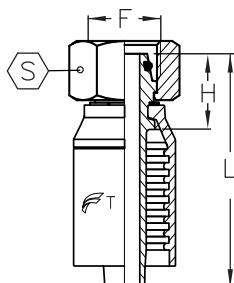
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
T04-02FBSPP90	1/4	1/8 - 28	26	1.02	54	2.12	28	1.10	14	9/16
T04-04FBSPP90	1/4	1/4 - 19	26	1.02	54	2.12	28	1.10	19	3/4
T04-06FBSPP90	1/4	3/8 - 19	26	1.02	54	2.12	32	1.26	22	7/8
T05-06FBSPP90	5/16	3/8 - 19	28	1.10	56	2.20	34	1.34	22	7/8
T06-06FBSPP90	3/8	3/8 - 19	31	1.22	61	2.40	35	1.38	22	7/8
T06-08FBSPP90	3/8	1/2 - 14	31	1.22	61	2.40	38	1.50	27	1 1/16
T08-08FBSPP90	1/2	1/2 - 14	37	1.46	70	2.75	42	1.65	27	1 1/16
T08-10FBSPP90	1/2	5/8 - 14	37	1.46	70	2.75	43	1.69	30	1 3/16
T12-12FBSPP90	3/4	3/4 - 14	54	2.12	95	3.74	56	2.20	32	1 1/4
T16-16FBSPP90	1	1 - 11	70	2.76	121	4.76	72	2.83	41	1 5/8



## MML Metric 24° Male Light - (CEL)



Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
T04-12MML	1/4	M12 x 1.5	L6	21.0	0.83	49.0	1.93	12	1/2
T04-16MML	1/4	M16 x 1.5	L8	21.0	0.83	49.0	1.93	14	9/16
T06-16MML	3/8	M16 x 1.5	L10	23.0	0.90	53.0	2.09	17	11/16
T06-18MML	3/8	M18 x 1.5	L12	23.0	0.90	53.0	2.09	19	3/4
T06-22MML	3/8	M22 x 1.5	L15	25.0	0.98	56.0	2.20	22	7/8
T08-22MML	1/2	M22 x 1.5	L15	26.0	1.02	59.0	2.32	22	7/8

## FML Metric 24° Female Light - (DKOL)



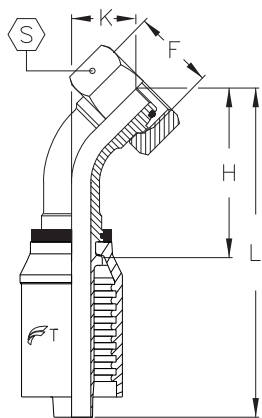
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
T02-10FMLL	1/8	M10 x 1.0	LL6	16.3	0.64	43.7	1.72	14	9/16
T03-12FML	3/16	M12 x 1.5	L6	21.0	0.83	46.0	1.81	14	9/16
T04-12FML	1/4	M12 x 1.5	L6	23.0	0.90	51.0	2.01	17	11/16
T04-14FML	1/4	M14 x 1.5	L8	22.0	0.87	50.0	1.97	17	11/16
T04-16FML	1/4	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	3/4
T06-16FML	3/8	M16 x 1.5	L10	23.0	0.90	54.0	2.12	19	3/4
T06-18FML	3/8	M18 x 1.5	L12	24.0	0.94	54.0	2.12	22	7/8
T06-22FML	3/8	M22 x 1.5	L15	24.0	0.94	54.0	2.12	27	1 1/16
T08-22FML	1/2	M22 x 1.5	L15	24.0	0.94	57.0	2.24	27	1 1/16
T08-26FML	1/2	M26 x 1.5	L18	26.0	1.02	59.0	2.32	32	1 1/4
T12-30FML	3/4	M30 x 2.0	L22	31.0	1.22	71.0	2.79	36	1 7/16
T16-36FML	1	M36 x 2.0	L28	32.0	1.26	83.0	3.27	41	1 5/8



# 2

# T Series - Thermoplastic / Teflon Hose

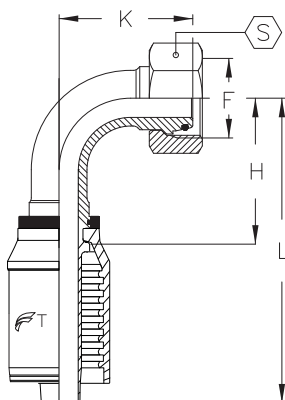
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## FML45 Metric 24° Female Light - 45° Elbow - (DKOL)



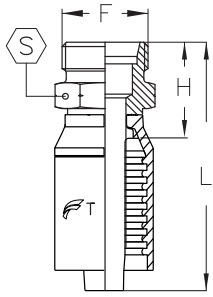
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
T03-12FML45	3/16	M12 x 1.5	L6	34.0	1.34	59.0	2.32	14.0	0.55	14	9/16
T04-12FML45	1/4	M12 x 1.5	L6	35.0	1.38	63.0	2.48	14.0	0.55	17	11/16
T04-14FML45	1/4	M14 x 1.5	L8	36.0	1.42	64.0	2.52	14.0	0.55	17	11/16
T04-16FML45	1/4	M16 x 1.5	L10	38.0	1.50	66.0	2.60	16.0	0.63	19	3/4
T06-16FML45	3/8	M16 x 1.5	L10	39.0	1.53	69.0	2.72	16.0	0.63	19	3/4
T06-18FML45	3/8	M18 x 1.5	L12	40.0	1.57	71.0	2.79	18.0	0.71	22	7/8
T06-22FML45	3/8	M22 x 1.5	L15	42.0	1.65	72.0	2.83	19.0	0.75	27	1 1/16
T08-22FML45	1/2	M22 x 1.5	L15	46.0	1.81	79.0	3.11	19.0	0.75	27	1 1/16
T08-26FML45	1/2	M26 x 1.5	L18	47.0	1.85	80.0	3.15	21.0	0.83	32	1 1/4
T12-30FML45	3/4	M30 x 2.0	L22	62.0	2.44	103.0	4.05	25.0	0.98	36	1 7/16
T16-36FML45	1	M36 x 2.0	L28	80.0	3.15	131.0	5.16	31.0	1.22	41	1 5/8



## FML90 Metric 24° Female Light - 90° Elbow - (DKOL)



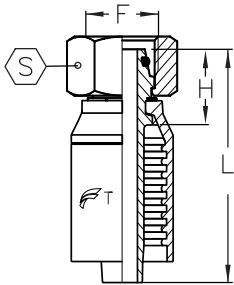
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
T03-12FML90	3/16	M12 x 1.5	L6	27.0	1.06	52.0	2.05	28.0	1.10	14	9/16
T04-12FML90	1/4	M12 x 1.5	L6	26.0	1.02	53.0	2.09	26.0	1.02	17	1 1/16
T04-14FML90	1/4	M14 x 1.5	L8	29.0	1.14	57.0	2.24	29.0	1.14	17	1 1/16
T04-16FML90	1/4	M16 x 1.5	L10	29.0	1.14	57.0	2.24	30.0	1.18	19	3/4
T06-16FML90	3/8	M16 x 1.5	L10	31.0	1.22	61.0	2.40	31.0	1.22	19	3/4
T06-18FML90	3/8	M18 x 1.5	L12	31.0	1.22	61.0	2.40	33.0	1.30	22	7/8
T06-22FML90	3/8	M22 x 1.5	L15	31.0	1.22	61.0	2.40	35.0	1.38	27	1 1/16
T08-22FML90	1/2	M22 x 1.5	L15	37.0	1.46	70.0	2.75	38.0	1.50	27	1 1/16
T08-26FML90	1/2	M26 x 1.5	L18	37.0	1.46	70.0	2.75	40.0	1.57	32	1 1/4
T12-30FML90	3/4	M30 x 2.0	L22	54.0	2.12	94.0	3.70	52.0	2.05	36	1 7/16
T16-36FML90	1	M36 x 2.0	L28	70.0	2.75	121.0	4.76	66.0	2.60	41	1 5/8



### MMS Metric 24° Male Heavy - (CES)



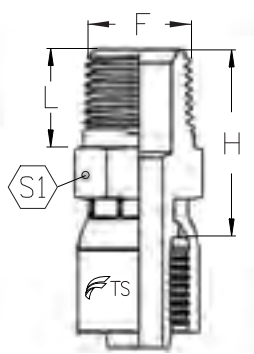
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
T04-18MMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	3/4
T06-20MMS	3/8	M20 x 1.5	S12	25.0	0.98	56.0	2.20	22	7/8
T06-22MMS	3/8	M22 x 1.5	S14	27.0	1.06	58.0	2.28	22	7/8
T08-24MMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	24	1



### FMS Metric 24° Female Heavy - (DKOS)



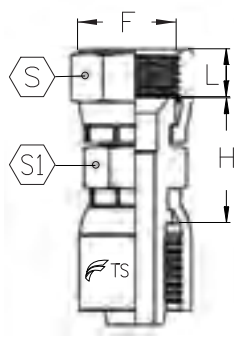
Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
T04-18FMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	7/8
T06-20FMS	3/8	M20 x 1.5	S12	24.0	0.94	54.0	2.12	24	1
T06-22FMS	3/8	M22 x 1.5	S14	28.0	1.10	58.0	2.28	27	1 1/16
T08-24FMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	30	1 3/16




## MP NPT Male - Brass



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
TS04-02MP-BR	1/4	1/8 - 27	23.4	0.92	9.5	0.37	14	9/16
TS04-04MP-BR	1/4	1/4 - 18	29.3	1.15	14.4	0.57	14	9/16
TS04-06MP-BR	1/4	3/8 - 18	29.5	1.16	14.6	0.57	19	3/4
TS06-04MP-BR	3/8	1/4 - 18	29.4	1.16	14.4	0.57	17	11/16
TS06-06MP-BR	3/8	3/8 - 18	29.6	1.17	14.6	0.57	19	3/4
TS08-08MP-BR	1/2	1/2 - 14	36.5	1.44	19.0	0.75	22	7/8
TS12-12MP-BR	3/4	3/4 - 14	39.8	1.57	19.3	0.76	28	1 1/8
TS16-16MP-BR	1	1 - 11 1/2	45.5	1.79	24.0	0.94	35	1 7/16

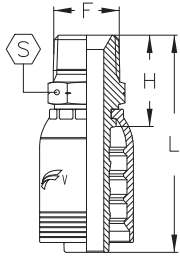
## FJ JIC 37° Female Swivel - Brass





Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
TS04-04FJ-BR	1/4	7/16 - 20	21.9	0.86	9.0	0.35	15	5/8	14	9/16
TS04-06FJ-BR	1/4	9/16 - 18	23.9	0.94	9.5	0.37	19	3/4	14	9/16
TS05-06FJ-BR	5/16	9/16 - 18	23.9	0.94	9.5	0.37	19	3/4	14	9/16
TS06-06FJ-BR	3/8	9/16 - 18	24.0	0.94	9.5	0.37	19	3/4	17	1 1/16
TS06-08FJ-BR	3/8	3/4 - 16	25.5	1.00	10.5	0.41	25	1	19	3/4
TS08-08FJ-BR	1/2	3/4 - 16	27.0	1.06	10.5	0.41	25	1	19	3/4
TS08-10FJ-BR	1/2	7/8 - 14	29.0	1.14	12.5	0.49	25	1	22	7/8
TS12-12FJ-BR	3/4	1 1/16 - 12	33.0	1.30	14.5	0.57	32	1 1/4	27	1 1/16
TS16-16FJ-BR	1	1 5/16 - 12	36.0	1.42	15.1	0.59	35	1 3/8	38	1 1/2

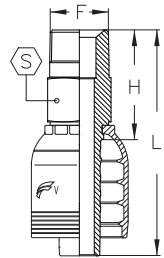




## MP NPT Male



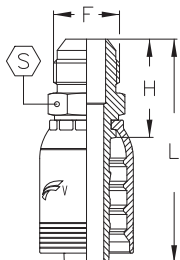
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
V12-12MP	3/4	3/4 - 14	39.0	1.53	90.0	3.54	27	1 1/16
V12-16MP	3/4	1 - 11 1/2	47.0	1.85	98.0	3.85	36	1 7/16
V16-12MP	1	3/4 - 14	41.5	1.63	98.0	3.85	32	1 1/4
V16-16MP	1	1 - 11 1/2	48.5	1.90	105.0	4.13	36	1 7/16
V16-20MP	1	1 1/4 - 11 1/2	53.0	2.08	109.5	4.31	46	1 13/16
VS20-20MP	1 1/4	1 1/4 - 11 1/2	55.0	2.16	121.5	4.78	46	1 13/16
VS24-24MP	1 1/2	1 1/2 - 11 1/2	61.0	2.40	143.5	5.64	50	2
VS32-32MP	2	2 - 11 1/2	70.5	2.77	167.0	6.57	65	2 5/16



## MPA API Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
VS32-32MPA	2	2 - 11 1/2	112.3	4.42	208.8	8.22	65	2 5/16

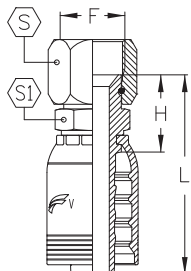
## MJ JIC 37° Male






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
V12-12MJ	3/4	1 1/16 - 12	40.0	1.57	91.0	3.58	27	1 1/16
V12-14MJ	3/4	1 7/16 - 12	41.5	1.63	92.5	3.64	32	1 1/4
V12-16MJ	3/4	1 5/16 - 12	43.0	1.69	94.0	3.70	36	1 7/16
V16-16MJ	1	1 5/16 - 12	45.0	1.77	101.5	3.99	36	1 7/16
V16-20MJ	1	1 5/8 - 12	48.0	1.88	104.5	4.11	46	1 13/16
VS20-20MJ	1 1/4	1 5/8 - 12	50.5	1.98	117.0	4.60	46	1 13/16
VS24-24MJ	1 1/2	1 7/8 - 12	57.0	2.24	139.5	5.49	50	2
VS32-32MJ	2	2 1/2 - 12	68.5	2.69	165.0	6.49	65	2 5/16

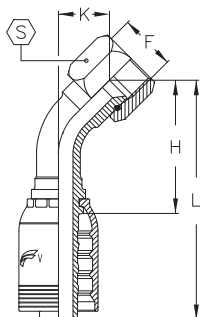
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## FJ JIC 37° Female Swivel



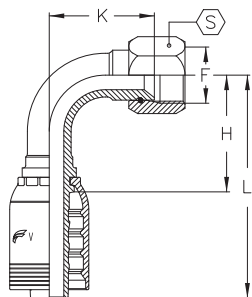
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
V12-10FJ	3/4	7/8 - 14	33.0	1.29	84.0	3.30	27	1 1/16	27	1 1/16
V12-12FJ	3/4	1 1/16 - 12	34.0	1.33	85.0	3.34	32	1 1/4	27	1 1/16
V12-14FJ	3/4	1 7/16 - 12	35.5	1.39	86.5	3.40	36	1 7/16	30	1 7/16
V12-16FJ	3/4	1 5/16 - 12	38.0	1.49	89.0	3.50	41	1 5/8	32	1 1/4
V16-12FJ	1	1 1/16 - 12	36.5	1.43	93.0	3.66	32	1 1/4	32	1 1/4
V16-16FJ	1	1 5/16 - 12	39.5	1.55	96.0	3.77	41	1 5/8	32	1 1/4
V16-20FJ	1	1 5/8 - 12	46.0	1.81	102.5	4.03	50	2	41	1 5/8
VS20-16FJ	1 1/4	1 5/16 - 12	45.5	1.79	112.0	4.40	41	1 5/8	41	1 5/8
VS20-20FJ	1 1/4	1 5/8 - 12	48.0	1.88	114.5	4.50	50	2	41	1 5/8
VS20-24FJ	1 1/4	1 7/8 - 12	51.0	2.00	117.5	4.62	60	2 3/8	46	1 13/16
VS24-24FJ	1 1/2	1 7/8 - 12	53.0	2.08	135.5	5.33	60	2 3/8	46	1 13/16
VS32-32FJ	2	2 1/2 - 12	69.0	2.71	165.5	6.51	75	3	60	2 3/8



## FJ45 JIC 37° Female Swivel - 45° Elbow



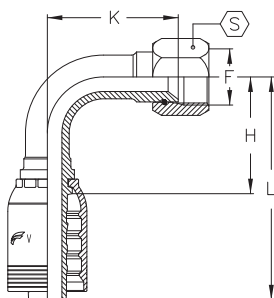
Part Number		F	H		L		K			
	in		mm	in	mm	in	in	mm	in	
V12-12FJ45	3/4	1 1/16 - 12	63.0	2.48	114.0	4.48	25.0	0.98	32	1 1/4
V12-16FJ45	3/4	1 5/16 - 12	63.0	2.48	114.0	4.48	25.0	0.98	41	1 5/8
V16-16FJ45	1	1 5/16 - 12	82.0	3.22	138.0	5.43	32.0	1.25	41	1 5/8
V16-20FJ45	1	1 5/8 - 12	82.0	3.22	138.0	5.43	32.0	1.25	50	2
VS20-20FJ45	1 1/4	1 5/8 - 12	98.0	3.85	164.0	6.45	38.0	1.49	50	2
VS20-24FJ45	1 1/4	1 7/8 - 12	98.0	3.85	164.0	6.45	38.0	1.49	60	2 3/8
VS24-24FJ45	1 1/2	1 7/8 - 12	118.0	4.64	201.0	7.91	46.0	1.81	60	2 3/8
VS32-32FJ45	2	2 1/2 - 12	157.0	6.18	253.0	9.96	62.0	2.44	75	3



## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop



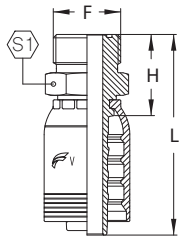
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FJ90M	3/4	1 1/16 - 12	55	2.16	106.0	4.17	52	2.04	32	1 1/4
V12-16FJ90M	3/4	1 5/16 - 12	55	2.16	106.0	4.17	52	2.04	41	1 5/8
V16-16FJ90M	1	1 5/16 - 12	71	2.79	128.0	5.03	67	2.63	36	1 7/16
V16-20FJ90M	1	1 5/8 - 12	71	2.79	128.0	5.03	67	2.63	50	2
VS20-20FJ90M	1 1/4	1 5/8 - 12	87	3.42	154.0	6.06	81	3.18	50	2
VS20-24FJ90M	1 1/4	1 7/8 - 12	87	3.42	154.0	6.06	81	3.18	60	2 1/2
VS24-24FJ90M	1 1/2	1 7/8 - 12	105	4.13	188.0	7.40	97	3.81	60	2 1/2
VS32-32FJ90M	2	2 1/2 - 12	140	5.51	237.0	9.33	132	5.19	75	3



## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop



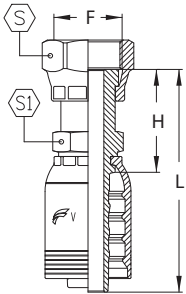
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FJ90L	3/4	1 1/16 - 12	55	2.16	106.0	4.17	96	3.77	32	1 1/4
V16-16FJ90L	1	1 5/16 - 12	71	2.79	128.0	5.03	116	4.56	41	1 5/8
VS20-20FJ90L	1 1/4	1 5/8 - 12	87	3.42	154.0	6.06	136	5.35	50	2




## MF ORFS Male



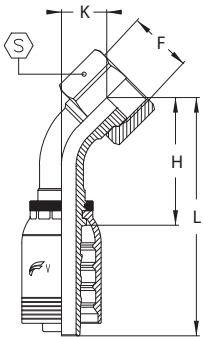
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
V12-12MF	3/4	1 7/16 - 12	36.0	1.41	87.0	3.42	32	1 1/4
V16-16MF	1	1 7/16 - 12	41.0	1.61	97.0	3.81	41	1 5/8
VS20-20MF	1 1/4	1 11/16 - 12	44.0	1.73	111.0	4.37	46	1 13/16
VS24-24MF	1 1/2	2 - 12	48.0	1.88	131.0	5.15	55	2 1/4



## FF ORFS Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
V12-10FF	3/4	1 - 14	43.0	1.69	94.0	3.70	30	1 7/16	27	1 1/16
V12-12FF	3/4	1 7/16 - 12	46.0	1.81	97.0	3.81	36	1 7/16	30	1 7/16
V12-16FF	3/4	1 7/16 - 12	49.0	1.93	100.0	3.94	41	1 5/8	36	1 7/16
V16-12FF	1	1 7/16 - 12	48.0	1.92	104.0	4.16	36	1 7/16	36	1 7/16
V16-16FF	1	1 7/16 - 12	51.0	2.00	107.0	4.21	41	1 5/8	36	1 7/16
V16-20FF	1	1 11/16 - 12	52.0	2.04	109.0	4.29	50	2	41	1 5/8
VS20-20FF	1 1/4	1 11/16 - 12	55.0	2.16	121.0	4.76	50	2	41	1 5/8
VS24-24FF	1 1/2	2 - 12	60.0	2.36	142.0	5.59	60	2 3/8	50	2

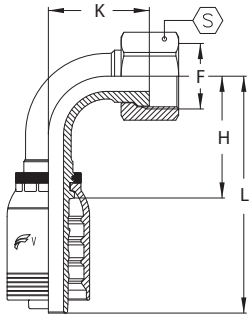
## FF45 ORFS Female Swivel - 45° Elbow





Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FF45	3/4	1 7/16 - 12	60.0	2.36	111.0	4.37	22.0	0.86	36	1 7/16
V12-16FF45	3/4	1 7/16 - 12	61.0	2.40	112.0	4.40	23.0	0.91	41	1 5/8
V16-12FF45	1	1 7/16 - 12	63.0	2.48	120.0	4.72	22.0	0.86	36	1 7/16
V16-16FF45	1	1 7/16 - 12	78.0	3.07	134.0	5.27	29.0	1.14	41	1 5/8
V16-20FF45	1	1 11/16 - 12	78.0	3.07	134.0	5.27	29.0	1.14	50	2
VS20-20FF45	1 1/4	1 11/16 - 12	93.0	3.66	159.0	6.25	34.0	1.33	50	2
VS24-24FF45	1 1/2	2 - 12	113	4.44	195.0	7.67	41.0	1.61	60	2 3/8

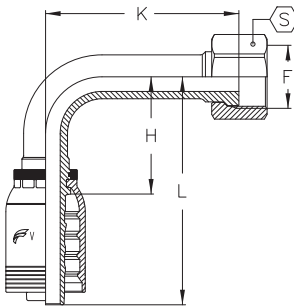
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FF90S ORFS Female Swivel - 90° Elbow Short Drop



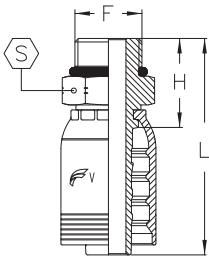
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FF90S	3/4	1 1/16 - 12	54.0	2.13	105.0	4.13	48.0	1.89	36	1 1/16
V16-12FF90S	1	1 1/16 - 12	71.0	2.80	127.0	5.00	48.0	1.93	36	1 1/16
V16-16FF90S	1	1 1/16 - 12	71.0	2.80	127.0	5.00	62.0	2.44	41	1 5/8
V16-20FF90S	1	1 1/16 - 12	71.0	2.80	127.0	5.00	62.0	2.44	50	2
VS20-20FF90S	1 1/4	1 11/16 - 12	87.0	3.42	153.0	6.02	75.0	2.95	50	2
VS24-24FF90S	1 1/2	2 - 12	105.0	4.13	187.0	7.36	90.0	3.54	60	2 3/8



## FF90L ORFS Female Swivel - 90° Elbow Long Drop



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FF90L	3/4	1 1/16 - 12	54	2.12	105.0	4.13	96	3.77	36	1 1/16
V16-16FF90L	1	1 1/16 - 12	71	2.79	127.0	5.00	114	4.48	41	1 5/8
VS20-20FF90L	1 1/4	1 11/16 - 12	87	3.42	153.0	6.02	130	5.11	50	2

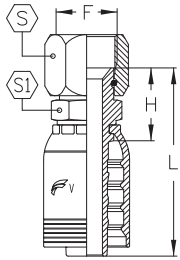
## MOB O-Ring Boss Male






Part Number		F	H		L			
	in		mm	in	mm	in	in	
V12-12MOB	3/4	1 1/16 - 12	36.0	1.42	82.0	3.43	32	1 1/4
V16-16MOB	1	1 5/16 - 12	39.0	1.54	96.0	3.78	38	1 1/2

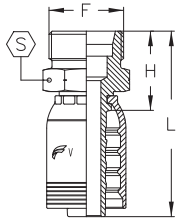
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FK Komatsu Female Swivel



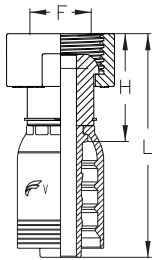
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
V12-30FK	3/4	M30 x 1.5	36.0	1.42	87.0	3.43	36	1 7/16	36	1 7/16
V16-33FK	1	M33 x 1.5	38.0	1.50	95.0	3.74	41	1 5/8	36	1 7/16
V16-36FK	1	M36 x 1.5	42.0	1.65	98.0	3.86	46	1 13/16	41	1 5/8
VS20-36FK	1 1/4	M36 x 1.5	44.0	1.73	110.5	43.5	46	1 13/16	41	1 5/8


## MKBC Kobelco Male



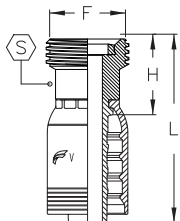
Part Number		F	H		L			
	in		mm	in	mm	in	mm	
V12-30MKBC	3/4	M30 x 1.5	39.2	1.54	90.2	3.55	38	1.50
V12-36MKBC	3/4	M36 x 1.5	39.2	1.54	90.2	3.55	41	1.61
V16-36MKBC	1	M36 x 1.5	42.5	1.67	99.0	3.90	41	1.61
V16-45MKBC	1	M45 x 1.5	45.0	1.77	101.6	4.00	50	2.00


## MHU1502 Male Hammer Union with Lug Nut



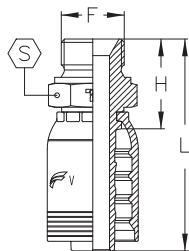
Part Number		Figure	H		L	
	in		mm	in	mm	
VS32-32MHU1502	2	1502	105.0	4.13	201.5	7.93



## FHU1502 Female Hammer Union with Rubber Gasket



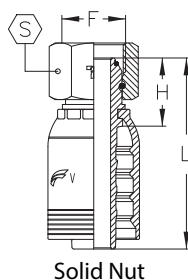
Part Number		Figure	H		L	
	in		mm	in	mm	
VS32-32FHU1502	2	1502	94.7	3.73	191.2	7.53



## MBSPP BSPP Male



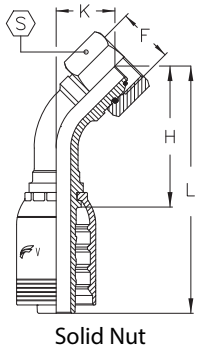
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
V12-12MBSPP	3/4	3/4 - 14	38.0	1.49	89.0	3.50	32	1 1/4
V12-16MBSPP	3/4	1 - 11	43.0	1.69	91.0	3.58	41	1 5/8
V16-16MBSPP	1	1 - 11	45.0	1.77	101.0	3.97	41	1 5/8
V16-20MBSPP	1	1 1/4 - 11	48.0	1.88	104.0	4.09	50	2
VS20-20MBSPP	1 1/4	1 1/4 - 11	50.0	1.96	117.0	4.60	50	2
VS24-24MBSPP	1 1/2	1 1/2 - 11	55.0	2.16	138.0	5.43	55	2 1/4
VS32-32MBSPP	2	2 - 11	63.0	2.48	159.0	6.25	70	2 3/4

## FBSPP BSPP Female Swivel



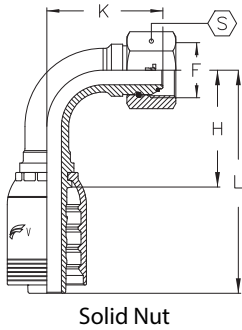
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
V12-12FBSPP	3/4	3/4 - 14	29.0	1.14	80.0	3.14	32	1 1/4
V12-16FBSPP	3/4	1 - 11	32.0	1.25	83.0	3.26	41	1 5/8
V16-16FBSPP	1	1 - 11	34.0	1.33	90.0	3.54	41	1 5/8
V16-20FBSPP	1	1 1/4 - 11	37.0	1.45	93.0	3.66	50	2
VS20-20FBSPP	1 1/4	1 1/4 - 11	39.0	1.53	106.0	4.17	50	2
VS24-24FBSPP	1 1/2	1 1/2 - 11	43.0	1.69	125.0	4.92	60	2 3/8
VS32-32FBSPP	2	2 - 11	47.0	1.85	143.0	5.62	75	3

## FBSP45 BSPP Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FBSP45	3/4	3/4 - 14	67.0	2.63	118.0	4.64	29.0	1.14	32	1 1/4
V12-16FBSP45	3/4	1 - 11	70.0	2.76	121.0	4.76	32.0	1.26	41	1 5/8
V16-16FBSP45	1	1 - 11	86.0	3.38	142.0	5.59	36.0	1.41	41	1 5/8
V16-20FBSP45	1	1 1/4 - 11	87.0	3.43	145.0	5.63	37.0	1.47	50	2
VS20-20FBSP45	1 1/4	1 1/4 - 11	103.0	4.05	169.0	6.65	43.0	1.69	50	2
VS24-24FBSP45	1 1/2	1 1/2 - 11	123.0	4.84	206.0	8.11	60.0	2.55	60	2 3/8
VS32-32FBSP45	2	2 - 11	160.0	6.29	257.0	10.11	65.0	2.55	75	3

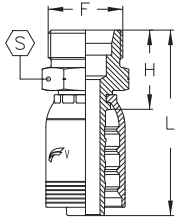
## FBSP90 BSPP Female Swivel - 90° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
V12-12FBSP90	3/4	3/4 - 14	55.0	2.16	106.0	4.17	57.0	2.24	32	1 1/4
V12-16FBSP90	3/4	1 - 11	55.0	2.16	106.0	4.17	57.0	2.24	41	1 5/8
V16-16FBSP90	1	1 - 11	71.0	2.79	128.0	5.03	72.0	2.83	41	1 5/8
V16-20FBSP90	1	1 1/4 - 11	71.0	2.79	128.0	5.03	72.0	2.83	50	2
VS20-20FBSP90	1 1/4	1 1/4 - 11	87.0	3.42	154.0	6.06	88.0	3.46	50	2
VS24-24FBSP90	1 1/2	1 1/2 - 11	105.0	4.13	188.0	7.40	104.0	4.09	60	2 3/8
VS32-32FBSP90	2	2 - 11	140.0	5.51	237.0	9.33	137.0	5.39	75	3

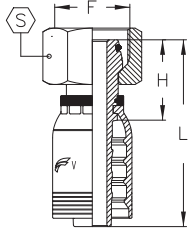


## MMS Metric 24° Male Heavy - (CES)



Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
V12-30MMS	3/4	M30 x 2.0	S20	85	3.35	34.0	1.34	30	1 7/16
V12-36MMS	3/4	M36 x 2.0	S25	89	3.50	38.0	1.49	36	1 7/16
V16-36MMS	1	M36 x 2.0	S25	97	3.82	40.0	1.57	36	1 7/16
V16-42MMS	1	M42 x 2.0	S30	101	3.97	44.0	1.73	46	1 13/16
VS20-42MMS	1 1/4	M42 x 2.0	S30	113	4.45	47.0	1.85	46	1 13/16
VS20-52MMS	1 1/4	M52 x 2.0	S38	117	4.60	51.0	2.00	55	2 1/4
VS24-52MMS	1 1/2	M52 x 2.0	S38	135	5.31	53.0	2.08	55	2 1/4

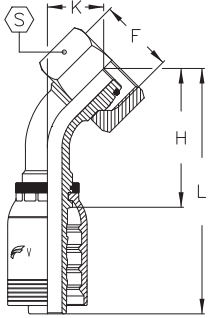
## FMS Metric 24° Female Heavy - (DKOS)



Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
V12-30FMS	3/4	M30 x 2.0	S20	37.0	1.46	88.0	3.46	36	1 7/16
V12-36FMS	3/4	M36 x 2.0	S25	39.0	1.53	90.0	3.54	46	1 13/16
V16-36FMS	1	M36 x 2.0	S25	41.0	1.61	97.0	3.82	46	1 13/16
V16-42FMS	1	M42 x 2.0	S30	42.0	1.65	98.0	3.85	50	2
VS20-42FMS	1 1/4	M42 x 2.0	S30	43.0	1.69	109.0	4.29	50	2
VS20-52FMS	1 1/4	M52 x 2.0	S38	48.0	1.88	115.0	4.52	60	2 3/8
VS24-52FMS	1 1/2	M52 x 2.0	S38	51.0	2.00	133.0	5.23	60	2 3/8

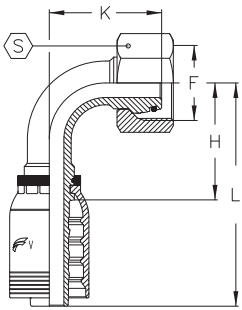
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## FMS45 Metric 24° Female Heavy - 45° Elbow - (DKOS)



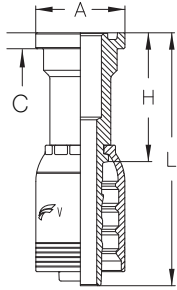
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
V12-30FMS45	3/4	M30 x 2.0	S20	65.0	2.56	116.0	4.57	27.0	1.06	36	1 1/16
V12-36FMS45	3/4	M36 x 2.0	S25	66.0	2.59	117.0	4.60	28.0	1.10	46	1 13/16
V16-36FMS45	1	M36 x 2.0	S25	83.0	3.27	140.0	5.51	34.0	1.34	46	1 13/16
V16-42FMS45	1	M42 x 2.0	S30	82.0	3.22	138.0	5.43	32.0	1.25	50	2
VS20-42FMS45	1 1/4	M42 x 2.0	S30	100.0	3.94	166.0	6.53	40.0	1.57	50	2
VS20-52FMS45	1 1/4	M52 x 2.0	S38	97.0	3.81	164.0	6.45	38.0	1.49	60	2 3/8
VS24-52FMS45	1 1/2	M52 x 2.0	S38	121.0	4.76	203.0	7.99	48.0	1.88	60	2 3/8


## FMS90 Metric 24° Female Heavy - 90° Elbow - (DKOS)



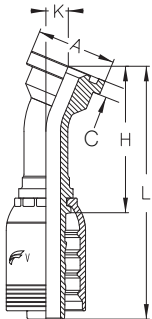
Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
V12-30FMS90	3/4	M30 x 2.0	S20	55.0	2.16	106.0	4.17	55.0	2.16	36	1 1/16
V12-36FMS90	3/4	M36 x 2.0	S25	55.0	2.16	106.0	4.17	55.0	2.16	46	1 13/16
V16-36FMS90	1	M36 x 2.0	S25	71.0	2.79	128.0	5.03	69.0	2.72	46	1 13/16
V16-42FMS90	1	M42 x 2.0	S30	71.0	2.79	128.0	5.03	67.0	2.63	50	2
VS20-42FMS90	1 1/4	M42 x 2.0	S30	87.0	3.42	154.0	6.06	83.0	3.27	50	2
VS20-52FMS90	1 1/4	M52 x 2.0	S38	87.0	3.42	154.0	6.06	80.0	3.14	60	2 3/8
VS24-52FMS90	1 1/2	M52 x 2.0	S38	105.0	4.13	188.0	7.40	100.0	3.93	60	2 3/8


## FL Code 61 Flange



Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
V12-12FL	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	
V12-16FL	3/4	6.7	44.5	1.75	57.0	2.24	108.0	4.25	
V12-20FL	3/4	6.7	50.8	2.00	55.0	2.16	106.0	4.17	
V16-12FL	1	6.7	38.1	1.50	58.0	2.28	114.5	4.51	
V16-16FL	1	8.0	44.5	1.75	58.0	2.28	114.5	4.51	
V16-20FL	1	8.0	50.8	2.00	63.0	2.48	119.5	4.70	
V16-24FL	1	8.0	60.4	2.38	55.0	2.16	115.5	4.55	
VS20-16FL	1 1/4	8.0	44.5	1.75	64.0	2.52	130.5	5.14	
VS20-20FL	1 1/4	8.0	50.8	2.00	64.0	2.52	130.5	5.14	
VS20-24FL	1 1/4	8.0	60.4	2.38	68.0	2.68	134.5	5.29	
VS20-32FL	1 1/4	9.5	71.4	2.81	75.0	2.95	141.5	5.57	
VS24-20FL	1 1/2	8.0	50.8	2.00	70.0	2.76	152.0	5.98	
VS24-24FL	1 1/2	8.0	60.4	2.38	73.0	2.87	155.5	6.12	
VS24-32FL	1 1/2	9.5	71.4	2.81	76.0	2.99	158.5	6.24	
VS32-24FL	2	9.5	60.4	2.38	80.0	3.15	176.5	6.95	
VS32-32FL	2	9.5	71.4	2.81	77.0	3.03	176.5	6.95	
VS32-40FL	2	9.5	84.1	3.31	90.0	3.54	186.5	7.34	

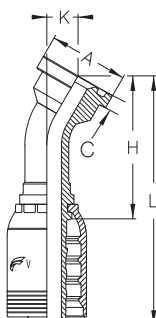
## FL22 Code 61 Flange - 22° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL22	3/4	6.7	38.1	1.50	70.0	2.75	121.0	4.76	11.0	0.43	
V12-16FL22	3/4	8.0	44.5	1.75	73.0	2.87	124.0	4.88	12.0	0.47	
V16-16FL22	1	8.0	44.5	1.75	86.0	3.38	142.0	5.59	12.0	0.47	
V16-20FL22	1	8.0	50.8	2.00	86.0	3.38	142.0	5.59	12.0	0.47	
VS20-20FL22	1 1/4	8.0	50.8	2.00	100.0	3.94	166.0	6.53	13.0	0.51	
VS20-24FL22	1 1/4	8.0	60.3	2.37	100.0	3.94	166.0	6.53	13.0	0.51	
VS24-24FL22	1 1/2	8.0	60.3	2.37	118.0	4.64	201.0	7.91	15.0	0.59	
VS24-32FL22	1 1/2	9.5	71.4	2.81	116.0	4.57	199.0	7.83	14.0	0.55	
VS32-32FL22	2	9.5	71.4	2.81	165.0	6.50	262.0	10.31	22.0	0.86	

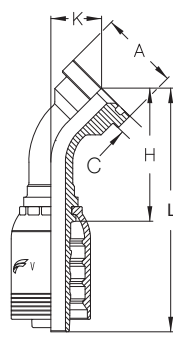
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FL30 Code 61 Flange - 30° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL30	3/4	6.7	38.1	1.50	68.0	2.68	119.0	4.68	16.0	0.63	
V12-16FL30	3/4	8.0	44.5	1.75	71.0	2.79	122.0	4.80	17.0	0.67	
V16-16FL30	1	8.0	44.5	1.75	84.0	3.31	140.0	5.51	17.0	0.67	
V16-20FL30	1	8.0	50.8	2.00	84.0	3.31	140.0	5.51	17.0	0.67	
VS20-20FL30	1 1/4	8.0	50.8	2.00	98.0	3.86	164.0	6.46	19.0	0.75	
VS20-24FL30	1 1/4	8.0	60.4	2.38	98.0	3.86	164.0	6.46	19.0	0.75	
VS24-24FL30	1 1/2	8.0	60.4	2.38	116.0	4.57	199.0	7.83	22.0	0.87	
VS24-32FL30	1 1/2	9.5	71.4	2.81	114.0	4.49	197.0	7.75	21.0	0.83	
VS32-32FL30	2	9.5	71.4	2.81	162.0	6.38	258.0	10.16	31.0	1.22	

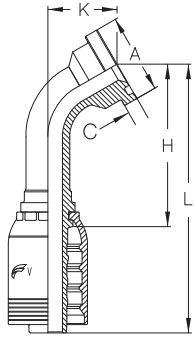
## FL45 SAE Code 61 Flange - 45° Elbow



Part Number		F	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
V12-12FL45	3/4	6.7	38.1	1.50	63.0	2.48	114.0	4.49	16.0	0.98
V12-16FL45	3/4	8.0	44.5	1.75	65.0	2.56	116.0	4.57	17.0	1.06
V12-20FL45	3/4	8.0	50.8	2.00	63.0	2.48	116.0	4.57	27.0	1.06
V16-12FL45	1	6.7	38.1	1.50	81.0	3.19	137.0	5.39	31.0	1.22
V16-16FL45	1	8.0	44.5	1.75	78.0	3.31	134.0	4.27	44.0	1.73
V16-20FL45	1	8.0	50.8	2.00	78.0	3.31	134.0	4.27	31.0	2.01
VS20-16FL45	1	8.0	44.5	1.75	96.0	3.78	163.0	6.42	32.2	1.46
VS20-20FL45	1 1/4	8.0	50.8	2.00	91.0	3.86	157.0	6.18	32.0	1.26
VS20-24FL45	1 1/4	8.0	60.3	2.38	91.0	3.86	157.0	6.18	32.0	1.26
VS24-24FL45	1 1/2	8.0	60.3	2.38	108.0	4.57	191.0	7.52	36.0	1.42
VS24-32FL45	1 1/2	9.5	71.4	2.81	107.0	4.49	189.0	7.44	35.0	1.38
VS32-32FL45	2	9.5	71.4	2.81	157.0	6.38	245.0	9.65	57.0	2.24
VS32-40FL45	2	9.5	84.1	3.31	146.0	5.75	243.0	9.57	51.0	2.01

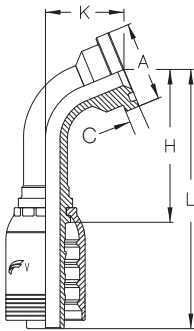
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FL60 Code 61 Flange - 60° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL60	3/4	6.7	38.1	1.50	77.0	3.03	128.0	5.04	34.0	1.34	
V12-16FL60	3/4	8.0	44.5	1.75	79.0	3.11	130.0	5.12	37.0	1.46	
V16-16FL60	1	8.0	44.5	1.75	98.0	3.86	154.0	6.06	40.0	1.57	
V16-20FL60	1	8.0	50.8	2.00	98.0	3.86	154.0	6.06	40.0	1.57	
VS20-20FL60	1 1/4	8.0	50.8	2.00	118.0	4.64	184.0	7.24	45.0	1.77	
VS20-24FL60	1 1/4	8.0	60.4	2.38	118.0	4.64	184.0	7.24	45.0	1.77	
VS24-24FL60	1 1/2	8.0	60.4	2.38	140.0	5.51	223.0	8.78	52.0	2.05	
VS24-32FL60	1 1/2	9.5	71.4	2.81	139.0	5.47	222.0	8.74	50.0	1.97	
VS32-32FL60	2	9.5	71.4	2.81	192.0	7.56	289.0	11.38	73.0	2.87	

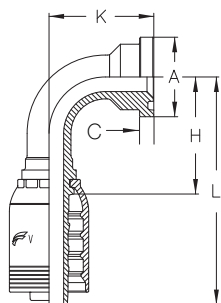
## FL67 Code 61 Flange - 67° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL67	3/4	6.7	38.1	1.50	72.0	2.83	123.0	4.84	39.0	1.53	
V12-16FL67	3/4	6.7	44.5	1.75	73.0	2.87	124.0	4.88	41.0	1.61	
V16-16FL67	1	8.0	44.5	1.75	92.0	3.62	148.0	5.83	45.0	1.77	
V16-20FL67	1	8.0	50.8	2.00	92.0	3.62	148.0	5.83	45.0	1.77	
V20-20FL67	1 1/4	8.0	50.8	2.00	111.0	4.37	178.0	7.01	52.0	2.05	
VS20-24FL67	1 1/4	8.0	60.4	2.38	111.0	4.37	178.0	7.01	52.0	2.05	
VS24-24FL67	1 1/2	8.0	60.4	2.38	133.0	5.24	216.0	8.50	60.0	2.36	
VS24-32FL67	1 1/2	9.5	71.4	2.81	132.0	5.20	215.0	8.46	58.0	2.28	
VS32-32FL67	2	9.5	71.4	2.81	181.0	7.12	278.0	10.94	84.0	3.31	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

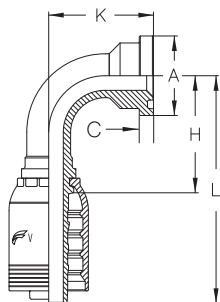
## FL90 Code 61 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL90-051	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	51.0	2.00	
V12-12FL90-096	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	96.0	3.77	
V12-12FL90-127	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	127.0	5.00	
V12-12FL90-150	3/4	6.7	38.1	1.50	55.0	2.16	106.0	4.17	150.0	5.90	
V12-16FL90-055	3/4	8.0	44.5	1.75	55.0	2.16	106.0	4.17	55.0	2.16	
V12-16FL90-079	3/4	8.0	44.5	1.75	55.0	2.16	106.0	4.17	79.0	3.11	
V12-20FL90-060	3/4	8.0	50.8	2.00	55.0	2.16	106.0	4.17	60.0	2.36	
V16-12FL90-065	3/4	6.7	38.1	1.50	71.0	2.79	128.0	5.03	65.0	2.56	
V16-16FL90-061	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	61.0	2.40	
V16-16FL90-118	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	118.0	4.64	
V16-16FL90-158	1	8.0	44.5	1.75	71.0	2.79	128.0	5.03	158.0	6.22	
V16-20FL90-061	1	8.0	50.8	2.00	71.0	2.79	128.0	5.03	61.0	2.40	
V16-20FL90-118	1	8.0	50.8	2.00	71.0	2.79	128.0	5.03	118.0	4.64	
V16-24FL90-061	1	8.0	60.4	2.38	71.0	2.79	128.0	5.03	61.0	2.40	
VS20-16FL90-079	1 1/4	8.0	44.5	1.75	87.0	3.42	154.0	6.06	79.0	3.11	
VS20-20FL90-071	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	71.0	2.79	
VS20-20FL90-091	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	91.0	3.58	
VS20-20FL90-102	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	102.0	4.01	
VS20-20FL90-112	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	112.0	4.40	
VS20-20FL90-130	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	130.0	5.11	
VS20-20FL90-168	1 1/4	8.0	50.8	2.00	87.0	3.42	154.0	6.06	168.0	6.61	
VS20-24FL90-071	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	71.0	2.79	
VS20-24FL90-118	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	118.0	4.64	
VS20-24FL90-130	1 1/4	8.0	60.3	2.37	87.0	3.42	154.0	6.06	130.0	5.11	

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

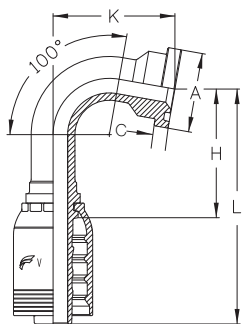
## FL90 Code 61 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
VS24-20FL90-090	1½	8.0	50.8	2.00	98.0	3.85	180.0	7.09	90.0	3.54	
VS24-24FL90-083	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	83.0	3.26	
VS24-24FL90-102	1½	8.0	60.4	2.38	105.0	4.30	188.0	7.40	102.0	4.01	
VS24-24FL90-148	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	148.0	5.82	
VS24-24FL90-172	1½	8.0	60.4	2.38	105.0	4.13	188.0	7.40	172.0	6.77	
VS24-32FL90-081	1½	8.0	71.4	2.81	105.0	4.13	188.0	7.40	81.0	3.18	
VS24-32FL90-115	1½	8.0	71.4	2.81	105.0	4.13	188.0	7.40	115.0	4.52	
VS24-32FL90-172	1½	8.0	71.4	2.81	105.0	4.13	188.0	7.40	172.0	6.77	
VS32-24FL90-081	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	81.0	3.19	
VS32-24FL90-105	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	105.0	4.13	
VS32-24FL90-152	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	152.0	5.98	
VS32-24FL90-228	2	8.0	60.3	2.37	136.0	5.38	233.0	9.18	228.0	8.98	
VS32-32FL90-122	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	122.0	4.80	
VS32-32FL90-165	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	165.0	6.49	
VS32-32FL90-203	2	9.5	71.4	2.81	140.0	5.51	237.0	9.33	203.0	7.99	
VS32-40FL90-117	2	9.5	84.1	3.31	140.0	5.51	237.0	9.33	117.0	4.60	

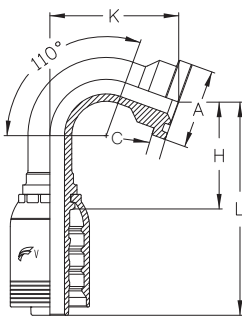
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## FL100 Code 61 Flange - 100° Elbow



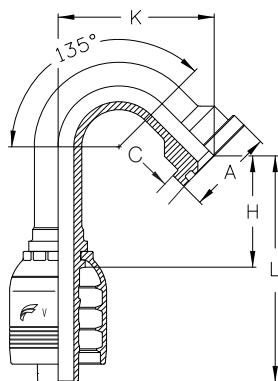
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL100-060	3/4	6.7	38.1	1.50	61.0	2.40	112.0	4.41	60.0	2.36	
V16-16FL100-073	1	8.0	44.5	1.75	77.0	3.03	134.0	5.27	73.0	2.87	


## FL110 Code 61 Flange - 110° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL110-064	3/4	6.7	38.1	1.50	51.0	2.01	102.0	4.01	64.0	2.52	
V16-16FL110-073	1	8.0	44.5	1.75	65.0	2.56	121.0	4.76	73.0	2.87	
V16-20FL110-073	1	8.0	50.8	2.00	65.0	2.56	121.0	4.76	73.0	2.87	
VS20-20FL110-080	1 1/4	8.0	50.8	2.00	82.0	3.23	148.0	5.83	80.0	3.15	
VS20-24FL110-081	1 1/4	8.0	60.4	2.38	82.0	3.23	148.0	5.83	81.0	3.19	
VS24-24FL110-095	1 1/2	8.0	60.4	2.38	95.0	3.74	178.0	7.01	95.0	3.74	
VS32-32FL110-140	2	9.5	71.4	2.81	124.0	4.88	220.0	8.66	140.0	5.51	

## FL135 Code 61 Flange - 135° Elbow

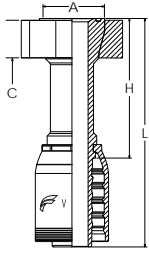



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FL135-069	3/4	6.7	38.1	1.50	69.0	2.72	120.0	4.72	69.0	2.72	
V12-16FL135-070	3/4	8.0	44.5	1.75	69.0	2.72	120.0	4.72	70.0	2.75	
V16-16FL135-088	1	8.0	44.5	1.75	57.0	2.24	113.0	4.45	88.0	3.46	

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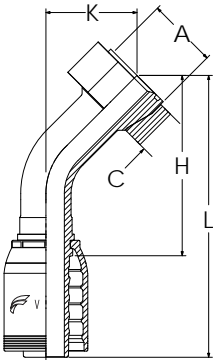



## LET Code 61 CAPTIVE Flange - 5000 PSI



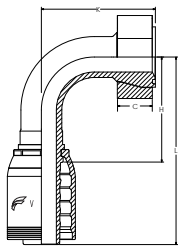
Part Number		C	A		H		L	
	in		mm	in	mm	in	mm	in
VS20-20LET	1¼		50.8	2.00	111.8	4.40	178.6	7.03
VS24-24LET	1½		60.3	2.37	129.6	5.10	212.1	8.35
VS32-32LET	2		71.4	2.81	139.5	5.49	236.0	9.29


## LET45 Code 61 CAPTIVE Flange - 5000 PSI



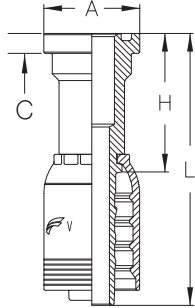
Part Number		C	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
VS20-20LET45-063	1¼		50.8	2.00	122.5	4.82	189.0	7.44	63.0	2.48
VS24-24LET45-074	1½		60.3	2.37	146.5	5.77	229.0	9.02	74.0	2.91


## LET90 Code 61 CAPTIVE Flange - 5000 PSI



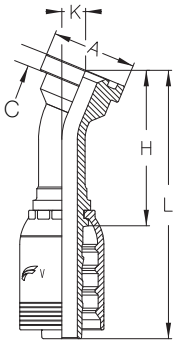
Part Number		C	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
VS20-20LET90-102	1¼		50.8	2.00	87.5	3.44	154.0	6.06	102.0	4.02
VS24-24LET90-114	1½		60.3	2.37	105.1	4.13	187.6	7.39	114.0	4.49
VS32-32LET90-136	2		71.4	2.81	150.3	5.92	247.0	9.72	136.0	5.35


## FLH Code 62 Flange



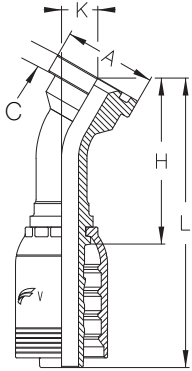
Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
V12-12FLH	3/4	8.8	41.3	1.62	59.5	2.34	110.0	4.33	
V12-16FLH	3/4	9.5	47.6	1.87	61.0	2.40	112.0	4.41	
V16-12FLH	1	8.8	41.3	1.62	65.0	2.56	121.5	4.78	
V16-16FLH	1	9.5	47.6	1.87	65.0	2.56	121.5	4.78	
V16-20FLH	1	10.3	54.0	2.12	69.0	2.72	125.5	4.94	
VS20-16FLH	1 1/4	9.5	47.6	1.87	70.0	2.75	136.5	5.37	
VS20-20FLH	1 1/4	10.3	54.0	2.12	70.0	2.75	136.5	5.37	
VS20-24FLH	1 1/4	12.6	63.5	2.50	80.0	3.15	146.5	5.77	
VS24-24FLH	1 1/2	12.6	63.5	2.50	84.0	3.31	116.5	4.59	
VS24-20FLH	1 1/2	10.3	54.0	2.12	72.0	2.83	154.0	6.06	
VS24-32FLH	1 1/2	12.6	79.4	3.12	99.0	3.90	181.5	7.14	
VS32-32FLH	2	12.6	79.4	3.12	100.0	3.94	196.5	7.74	


## FLH22 Code 62 Flange - 22° Elbow



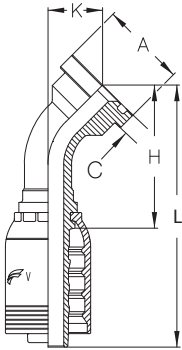
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH22	3/4	8.8	41.3	1.62	74.0	2.91	125.0	4.92	13.0	0.51	
V12-16FLH22	3/4	9.5	47.6	1.87	76.0	2.99	127.0	5.00	14.0	0.55	
V16-16FLH22	1	9.5	47.6	1.87	89.0	3.50	145.0	5.70	13.0	0.51	
V16-20FLH22	1	10.3	54.0	2.12	89.0	3.50	145.0	5.70	13.0	0.51	
VS20-20FLH22	1 1/4	10.3	54.0	2.12	103.0	4.05	169.0	6.65	15.0	0.59	
VS20-24FLH22	1 1/4	12.6	63.5	2.50	104.0	4.09	171.0	6.73	15.0	0.59	
VS24-24FLH22	1 1/2	12.6	63.5	2.50	123.0	4.84	206.0	8.11	17.0	0.66	
VS24-32FLH22	1 1/2	12.6	79.4	3.12	127.0	5.00	210.0	8.26	19.0	0.74	
VS32-32FLH22	2	12.6	79.4	3.12	166.0	6.53	263.0	10.35	24.0	0.94	


## FLH30 Code 62 Flange - 30° Elbow



Part VNumber		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH30	3/4	8.8	41.3	1.62	72.0	2.83	123.0	4.84	18.0	0.70	
V12-16FLH30	3/4	9.5	47.6	1.87	74.0	2.91	125.0	4.92	19.0	0.74	
V16-16FLH30	1	9.5	47.6	1.87	87.0	3.42	143.0	5.62	19.0	0.74	
V16-20FLH30	1	10.3	54.0	2.12	87.0	3.42	143.0	5.62	19.0	0.74	
VS20-20FLH30	1 1/4	10.3	54.0	2.12	100.0	3.93	167.0	6.57	20.0	0.78	
VS20-24FLH30	1 1/4	12.6	63.5	2.50	102.0	4.01	168.0	6.61	21.0	0.82	
VS24-24FLH30	1 1/2	12.6	63.5	2.50	121.0	4.76	203.0	7.99	24.0	0.94	
VS24-32FLH30	1 1/2	12.6	79.4	3.12	124.0	4.88	207.0	8.14	26.0	1.02	
VS32-32FLH30	2	12.6	79.4	3.12	162.0	6.37	259.0	10.19	34.0	1.33	

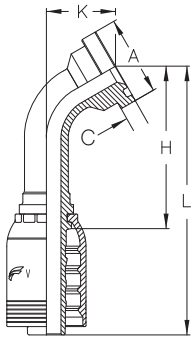
## FLH45 Code 62 Flange - 45° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH45	3/4	8.8	41.3	1.62	66.0	2.59	117.0	4.60	28.0	1.10	
V12-16FLH45	3/4	9.5	47.6	1.87	68.0	2.67	118.0	4.64	29.0	1.14	
V16-12FLH45	1	8.8	41.3	1.62	81.0	3.18	137.0	5.39	31.0	1.22	
V16-16FLH45	1	9.5	47.6	1.87	80.0	3.14	136.0	5.35	30.0	1.18	
V16-20FLH45	1	10.3	54.0	2.12	80.0	3.14	136.0	5.35	30.0	1.18	
VS20-16FLH45	1 1/4	9.5	47.6	1.87	96.0	3.77	163.0	6.41	37.0	1.45	
VS20-20FLH45	1 1/4	10.3	54.0	2.12	93.0	3.66	160.0	6.29	34.0	1.33	
VS20-24FLH45	1 1/4	12.6	63.5	2.50	94.0	3.70	161.0	6.33	35.0	1.37	
VS24-24FLH45	1 1/2	12.6	63.5	2.50	112.0	4.40	195.0	7.67	40.0	1.57	
VS24-32FLH45	1 1/2	12.6	79.4	3.12	115.0	4.52	198.0	7.79	43.0	1.69	
VS32-32FLH45	2	12.6	79.4	3.12	150.0	5.90	247.0	9.72	56.0	2.20	

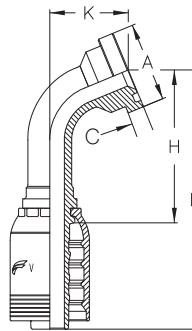
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## FLH60 Code 62 Flange - 60° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH60	3/4	8.8	41.3	1.63	79.0	3.11	130.0	5.12	38.0	1.50	
V12-16FLH60	3/4	9.5	47.6	1.87	80.0	3.15	131.0	5.16	40.0	1.57	
V16-16FLH60	1	9.5	47.6	1.87	99.0	3.90	155.0	6.10	42.0	1.65	
V16-20FLH60	1	10.3	54.0	2.12	99.0	3.90	155.0	6.10	42.0	1.65	
VS20-20FLH60	1 1/4	10.3	54.0	2.12	119.0	4.68	185.0	7.28	47.0	1.85	
VS20-24FLH60	1 1/4	12.6	63.5	2.50	120.0	4.72	186.0	7.32	49.0	1.93	
VS24-24FLH60	1 1/2	12.6	63.5	2.50	143.0	5.62	225.0	8.85	56.0	2.20	
VS24-32FLH60	1 1/2	12.6	79.4	3.12	145.0	5.71	228.0	8.98	60.0	2.36	
VS32-32FLH60	2	12.6	79.4	3.12	193.0	7.59	289.0	11.37	79.0	3.11	

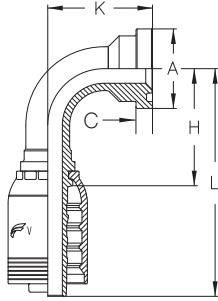
## FLH67 Code 62 Flange - 67° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH67	3/4	8.8	41.3	1.63	74.0	2.91	125.0	4.92	43.0	1.69	
V12-16FLH67	3/4	9.5	47.6	1.87	75.0	2.95	126.0	4.96	45.0	1.77	
V16-16FLH67	1	9.5	47.6	1.87	93.0	3.66	150.0	5.90	48.0	1.88	
V16-20FLH67	1	10.3	54.0	2.12	93.0	3.66	150.0	5.90	48.0	1.88	
VS20-20FLH67	1 1/4	10.3	54.0	2.12	112.0	4.40	179.0	7.04	54.0	2.12	
VS20-24FLH67	1 1/4	12.6	63.5	2.50	113.0	4.45	180.0	7.09	56.0	2.20	
VS24-24FLH67	1 1/2	12.6	63.5	2.50	135.0	5.31	217.0	8.54	65.0	2.55	
VS24-32FLH67	1 1/2	12.6	79.4	3.12	137.0	5.39	219.0	8.62	69.0	2.72	
VS32-32FLH67	2	12.6	79.4	3.12	182.0	7.16	278.0	10.94	90.0	3.54	

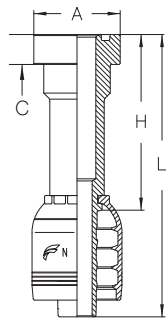
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FLH90 Code 62 Flange - 90° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLH90-056	3/4	8.8	41.3	1.62	55.0	2.16	106.0	4.17	56.0	2.20	
V12-12FLH90-100	3/4	8.8	41.3	1.62	55.0	2.16	106.0	4.17	100.0	3.93	
V12-12FLH90-175	3/4	8.8	44.3	1.74	55.0	2.16	100.0	4.17	175.0	6.89	
V12-16FLH90-058	3/4	9.5	47.6	1.87	55.0	2.16	106.0	4.17	58.0	2.28	
V12-16FLH90-140	3/4	9.5	47.6	1.87	55.0	2.16	106.0	4.17	140.0	5.51	
V16-12FLH90-065	1	8.8	41.3	1.62	71.0	2.79	128.0	5.03	65.0	2.55	
V16-16FLH90-064	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	64.0	2.51	
V16-16FLH90-120	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	120.0	4.72	
V16-16FLH90-150	1	9.5	47.6	1.87	71.0	2.79	128.0	5.03	150.0	5.90	
V16-20FLH90-064	1	10.3	54.0	2.12	71.0	2.79	128.0	5.03	64.0	2.51	
VS20-16FLH90-079	1 1/4	9.5	47.6	1.87	87.0	3.42	154.0	6.06	79.0	3.11	
VS20-20FLH90-074	1 1/4	10.3	54.0	2.12	87.0	3.42	154.0	6.06	74.0	2.91	
VS20-20FLH90-120	1 1/4	10.3	54.0	2.12	87.0	3.42	154.0	6.06	120.0	4.72	
VS20-20FLH90-180	1 1/4	10.3	54.0	2.12	87.0	3.45	154.0	6.06	180.0	7.08	
VS20-24FLH90-076	1 1/4	12.6	63.5	2.50	87.0	3.42	154.0	6.06	76.0	2.99	
VS24-24FLH90-088	1 1/2	12.6	63.5	2.50	105.0	4.13	188.0	7.40	88.0	3.46	
VS24-32FLH90-093	1 1/2	12.6	79.4	3.12	105.0	4.13	188.0	7.40	93.0	3.66	
VS32-32FLH90-123	2	12.6	79.4	3.12	140.0	5.51	237.0	9.33	123.0	4.84	

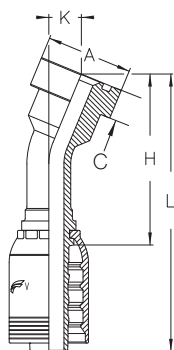
## FLC CAT® Flange




Use with D-Ring

Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
V12-12FLC	3/4	14.2	41.3	1.62	84.0	3.30	135.0	5.31	
V12-16FLC	3/4	14.2	47.6	1.87	84.0	3.30	135.0	5.31	
V16-16FLC	1	14.2	47.6	1.87	90.0	3.54	146.5	5.76	
V16-20FLC	1	14.2	54.0	2.12	90.0	3.54	146.5	5.76	
V20-20FLC	1 1/4	14.2	54.0	2.12	88.0	3.46	154.4	6.07	
V20-24FLC	1 1/4	14.2	63.5	2.50	88.0	3.46	154.5	6.07	
V24-24FLC	1 1/2	14.2	63.5	2.50	84.0	3.31	166.0	6.53	
V24-32FLC	1 1/2	14.2	79.4	3.12	110.0	4.33	192.0	7.56	
V32-32FLC	2	14.2	79.4	3.12	130.0	5.12	220.0	8.90	

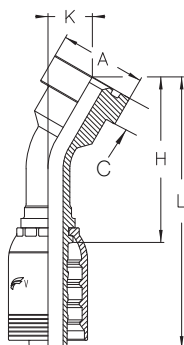
## FLC22 CAT® Flange - 22° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC22	3/4	14.2	41.3	1.62	82.0	3.22	133.0	5.23	16.0	0.62	
V12-16FLC22	3/4	14.2	47.6	1.87	84.0	3.30	135.0	5.31	17.0	0.66	
V16-16FLC22	1	14.2	47.6	1.87	97.0	3.81	153.0	6.02	17.0	0.66	
V16-20FLC22	1	14.2	54.0	2.12	97.0	3.81	153.0	6.02	17.0	0.66	
VS20-20FLC22	1 1/4	14.2	54.0	2.12	106.0	4.17	172.0	6.77	16.0	0.62	
VS20-24FLC22	1 1/4	14.2	63.5	2.50	106.0	4.17	174.0	6.85	16.0	0.62	
VS24-24FLC22	1 1/2	14.2	63.5	2.50	125.0	4.92	208.0	8.19	18.0	0.71	
VS24-32FLC22	1 1/2	14.2	79.4	3.12	129.0	5.08	211.0	8.31	19.0	0.75	
VS32-32FLC22	2	14.2	79.4	3.12	168.0	6.61	265.0	10.43	25.0	0.98	

## FLC30 CAT® Flange - 30° Elbow

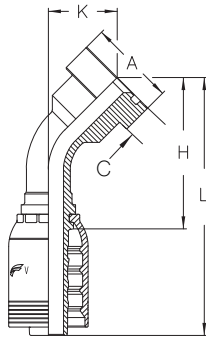


Use with D-Ring


Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC30	3/4	14.2	41.3	1.62	79.0	3.11	130.0	5.11	22.0	0.86	
V12-16FLC30	3/4	14.2	47.6	1.87	82.0	3.22	133.0	5.23	23.0	0.90	
V16-16FLC30	1	14.2	47.6	1.87	94.0	3.70	151.0	5.94	23.0	0.90	
V16-20FLC30	1	14.2	54.0	2.12	94.0	3.70	151.0	5.94	23.0	0.90	
VS20-20FLC30	1 1/4	14.2	54.0	2.12	103.0	4.05	170.0	6.69	22.0	0.86	
VS20-24FLC30	1 1/4	14.2	63.5	2.50	104.0	4.09	170.0	6.69	23.0	0.90	
VS24-24FLC30	1 1/2	14.2	63.5	2.50	123.0	4.84	205.0	8.07	25.0	0.98	
VS24-32FLC30	1 1/2	14.2	79.4	3.12	126.0	4.96	208.0	8.19	27.0	1.06	
VS32-32FLC30	2	14.2	79.4	3.12	164.0	6.46	264.0	10.39	35.0	1.38	

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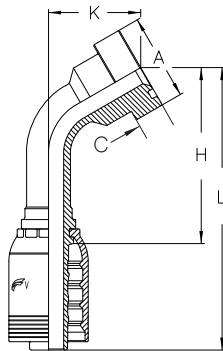
## FLC45 CAT® Flange - 45° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC45	3/4	14.2	41.3	1.62	72	2.83	123.0	4.84	34.0	1.33	
V12-16FLC45	3/4	14.2	47.6	1.87	74	2.91	125.0	4.92	36.0	1.41	
V16-16FLC45	1	14.2	47.6	1.87	86	3.38	143.0	5.62	36.0	1.41	
V16-20FLC45	1	14.2	54.0	2.12	86	3.38	143.0	5.62	36.0	1.41	
VS20-20FLC45	1 1/4	14.2	54.0	2.12	96	3.77	162.0	6.37	36.0	1.41	
VS20-24FLC45	1 1/4	14.2	63.5	2.50	96	3.77	162.0	6.37	36.0	1.41	
VS24-24FLC45	1 1/2	14.2	63.5	2.50	114.0	4.49	196.0	7.72	41.0	1.61	
VS24-32FLC45	1 1/2	14.2	79.4	3.12	116.0	4.57	199.0	7.83	44.0	1.73	
VS32-32FLC45	2	14.2	79.4	3.12	152.0	5.98	250.0	9.84	57.0	2.24	

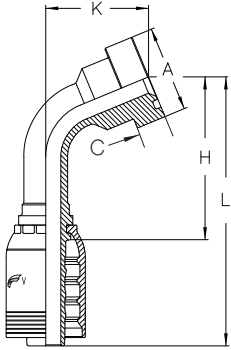
## FLC60 CAT® Flange - 60° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC60	3/4	14.2	41.3	1.62	83.0	3.26	134.0	5.27	45.0	1.77	
V12-16FLC60	3/4	14.2	47.6	1.87	85.0	3.34	136.0	5.35	48.0	1.88	
V16-16FLC60	1	14.2	47.6	1.87	103.0	4.05	160.0	6.29	50.0	1.96	
V16-20FLC60	1	14.2	54.0	2.12	103.0	4.05	160.0	6.29	50.0	1.96	
VS20-20FLC60	1 1/4	14.2	54.0	2.12	121.0	4.76	187.0	7.36	50.0	1.96	
VS20-24FLC60	1 1/4	14.2	63.5	2.50	121.0	4.76	187.0	7.36	51.0	2.00	
VS24-24FLC60	1 1/2	14.2	63.5	2.50	144.0	5.67	226.0	8.90	58.0	2.28	
VS24-32FLC60	1 1/2	14.2	79.4	3.12	146.0	5.75	228.0	8.98	61.0	2.40	
VS32-32FLC60	2	14.2	79.4	3.12	194.0	7.64	290.0	11.42	81.0	3.19	

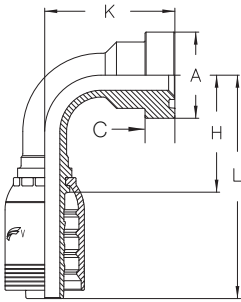
## FLC67 CAT® Flange - 67° Elbow




Use with D-Ring

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC67	3/4	14.2	41.3	1.62	77.0	3.03	128.0	5.03	50.0	1.96	
V12-16FLC67	3/4	14.2	47.6	1.87	79.0	3.11	130.0	5.11	53.0	2.08	
V16-16FLC67	1	14.2	47.6	1.87	97.0	3.81	153.0	6.02	56.0	2.20	
VS20-20FLC67	1 1/4	14.2	54.0	2.12	114.0	4.48	181.0	7.12	57.0	2.24	
VS24-24FLC60	1 1/2	14.2	63.5	2.50	137.0	5.39	219.0	8.62	66.0	2.60	
VS24-32FLC60	1 1/2	14.2	79.4	3.12	138.0	5.43	220.0	8.66	69.0	2.72	
VS32-32FLC60	2	14.2	79.4	3.12	184.0	7.24	280.0	11.02	92.0	3.62	

## FLC90 CAT® Flange - 90° Elbow

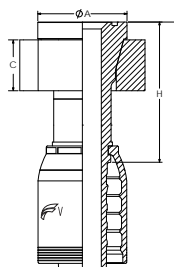


Use with D-Ring


Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
V12-12FLC90-064	3/4	14.2	41.3	1.62	55.0	2.16	106.0	4.17	64.0	2.52	
V12-12FLC90-129	3/4	14.2	41.3	1.62	55.0	2.16	106.0	4.17	129.0	5.07	
V12-16FLC90-064	3/4	14.2	47.6	1.87	55.0	2.16	106.0	4.17	64.0	2.51	
V16-16FLC90-073	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	73.0	2.87	
V16-16FLC90-132	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	132.0	5.19	
V16-16FLC90-150	1	14.2	47.6	1.87	71.0	2.79	128.0	5.03	150.0	5.90	
V16-20FLC90-073	1	14.2	54.0	2.12	71.0	2.79	128.0	5.03	73.0	2.87	
VS20-20FLC90-077	1 1/4	14.2	54.0	2.12	87.0	3.42	154.0	6.06	77.0	3.03	
VS20-20FLC90-150	1 1/4	14.2	54.0	2.12	87.0	3.42	154.0	6.06	150.0	5.90	
VS20-24FLC90-078	1 1/4	14.2	63.5	2.50	87.0	3.42	154.0	6.06	78.0	3.07	
VS20-24FLC90-135	1 1/4	14.2	63.5	2.50	87.0	3.42	154.0	6.06	135.0	5.31	
VS24-24FLC90-090	1 1/2	14.2	63.5	2.50	105.0	4.13	188.0	7.40	90.0	3.54	
VS24-24FLC90-106	1 1/2	14.2	63.5	2.50	87.0	3.42	154.0	6.06	106.0	4.17	
VS24-32FLC90-094	1 1/2	14.2	79.4	3.13	105.0	4.13	188.0	7.40	94.0	3.70	
VS32-32FLC90-125	2	14.2	79.4	3.13	140.0	5.51	237.0	9.33	125.0	4.92	



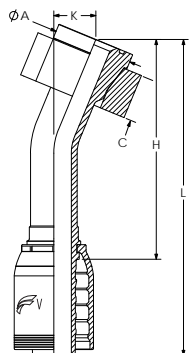
## FLOKA O&K® Flange




Use OO O-Ring

Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
V16-20FLOKA	1	39.0	57.4	2.26	116.5	4.59	173	6.81	
VS20-20FLOKA	1¼	39.0	57.4	2.26	118.5	4.67	185	7.28	
VS24-24FLOKA	1½	39.0	68.4	2.69	107.5	4.23	190	7.48	

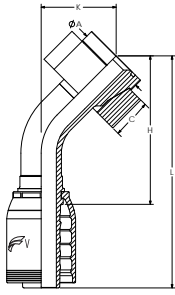
## FLOKA22 O&K® Flange - 22° Elbow



Use OO O-Rings

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
VS24-24FLOKA22-036	1½	39.0	68.4	2.69	188.5	7.42	271	10.67	36.0	1.42	

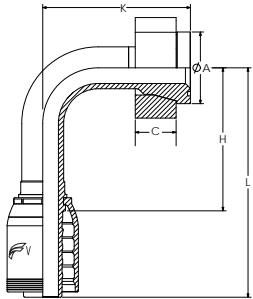
## FLOKA45 O&K® Flange - 45° Elbow



Use OO O-Rings

Part Number		A		H		L		K	
	in	mm	in	mm	in	mm	in	mm	in
VS20-20FLOKA45-063	1¼	57.4	2.26	138	5.43	204.5	8.06	63.0	2.48
VS20-24FLOKA45-066	1¼	68.4	2.69	125	4.92	191.5	7.54	66.0	2.62
VS24-24FLOKA45-074	1½	68.4	2.69	147	5.77	229.0	9.02	74.0	2.91
VS24-32FLOKA45-080	1½	83.4	3.28	150	5.91	232.5	9.15	80.0	3.15

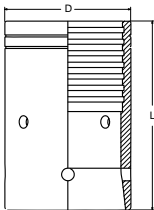
## FLOKA90 O&K® Flange - 90° Elbow



Use OO O-Rings

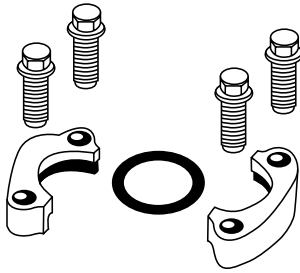
Part Number		A		H		L		K	
	in	mm	in	mm	in	mm	in	mm	in
VS16-20FLOKA90-100	1	57.4	2.26	97.5	3.84	154	6.06	100.0	4.80
VS20-20FLOKA90-122	1¼	57.4	2.26	122.5	4.82	189	7.44	122.0	4.80
VS24-24FLOKA90-141	1½	68.4	2.69	136.5	5.37	219	8.62	141.0	5.55
VS24-32FLOKA90-160	1½	83.4	3.28	126.5	4.98	209	8.22	160.0	6.29

## OKBR FLOKA Crimp Strain Relief Sleeve



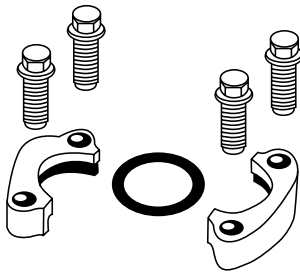
Part Number		D		L	
	in	mm	in	mm	in
20OKABR	1¼	60.0	2.36	90.0	3.54
24OKABR	1½	73.0	2.87	105.0	4.13
32OKABR	2	95.0	3.74	120.0	4.72

## 1901 Code 61 Split Flange Kit



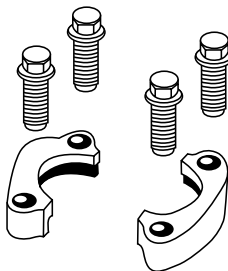
Part Number	Size
1901-08-K	1/2
1901-12-K	3/4
1901-16-K	1
1901-20-K	1 1/4
1901-24-K	1 1/2
1901-32-K	2
1901-40-K	2 1/2

## 1902 Code 62 Split Flange Kit



Part Number	Size
1902-08-K	1/2
1902-12-K	3/4
1902-16-K	1
1902-20-K	1 1/4
1902-24-K	1 1/2
1902-32-K	2

## 1903 CAT® Split Flange Kit



D-Ring not included

Part Number	Size
1903-12-K	3/4
1903-16-K	1
1903-20-K	1 1/4
1903-24-K	1 1/2
1903-32-K	2

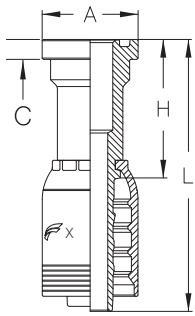
## O-Rings / D-Rings




Size	Standard 61/62 O-Ring	High Pressure 61/62 O-Ring	CAT D-Ring
1/2	OF-08	OO-08	OC-08
3/4	OF-12	OO-12	OC-12
1	OF-16	OO-16	OC-16
1 1/4	OF-20	OO-20	OC-20
1 1/2	OF-24	OO-24	OC-24
2	OF-32	OO-32	OC-32
2 1/2	OF-40	--	--

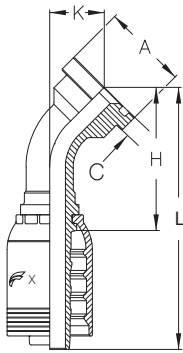
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## FLH Code 62 Flange



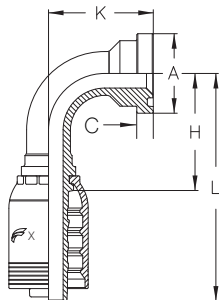
Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
X32-32FLH	2	12.6	79.4	3.12	92	3.62	206.0	8.11	


## FLH45 Code 62 Flange - 45° Elbow



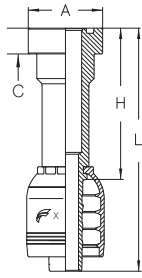
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
X32-32FLH45	2	12.6	79.4	3.12	161	6.34	275.0	10.8	71.0	2.80	

## FLH90 Code 62 Flange - 90° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
X32-32FLH90-143	2	12.6	79.4	3.12	140	5.51	261.0	10.3	143.0	5.63	

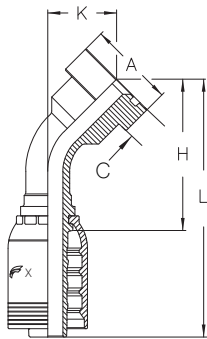
## FLC Code 62 Flange



Use OO O-Rings

Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
X32-32FLC	2	14.2	79.4	3.12	94.0	3.70	302.2	11.9	

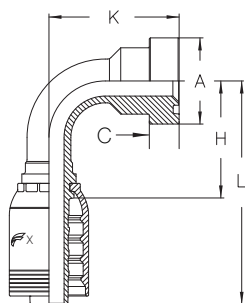
## FLC45 Code 62 Flange - 45° Elbow



Use OO O-Rings

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
X32-32FLC45	2	14.2	79.4	3.12	162.0	6.38	276.2	10.9	72.0	2.83	

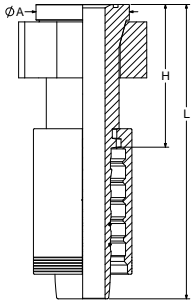
## FLC90 Code 62 Flange - 90° Elbow




Use OO O-Rings

Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
X32-32FLC90-145	2	14.2	79.4	3.12	142.0	5.59	256.2	10.1	145.0	5.71	

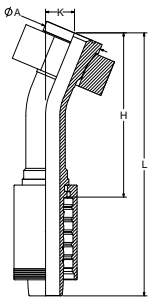
## FLOKA O&K® Flange




Use OO O-Rings

Part Number		F	A		H		L	
	in		mm	in	mm	in	mm	in
X32-32FLOKA	2	0.551	83.4	3.28	127.5	5.02	263.0	10.35

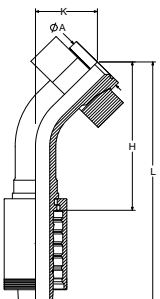
## FLOKA22 O&K® Flange - 22° Elbow




Use OO O-Rings

Part Number		F	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
X32-32FLOKA22-040	2	0.551	83.4	3.28	224.5	8.84	360.0	14.17	40.0	1.57

## FLOKA45 O&K® Flange - 45° Elbow

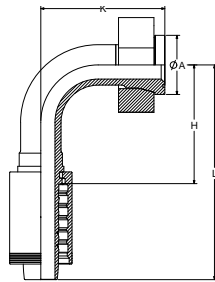


Use OO O-Rings


Part Number		F	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
X32-32FLOKA45-087	2	0.551	83.4	3.28	212.0	8.35	347.5	13.68	87.0	3.43

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

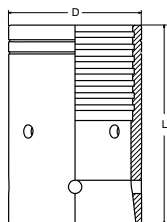
## FLOKA90 O&K® Flange - 90° Elbow




Use OO O-Rings

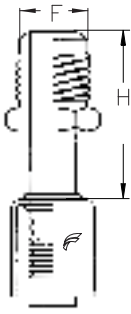
Part Number		F	A		H		L		K	
	in		mm	in	mm	in	mm	in	mm	in
X32-32FLOKA90-175	1½	0.551	83.4	3.28	167.5	6.59	303.0	11.93	175.0	6.89


## OKBR FLOKA Crimp Strain Relief Sleeve



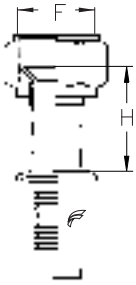
Part Number		D		L	
	in	mm	in	mm	in
20OKBR	1¼	60.0	2.36	90.0	3.54
24OKBR	1½	73.0	2.87	105.0	4.13
32OKBR	2	95.0	3.74	120.0	4.72


## MA SAE 45° Male



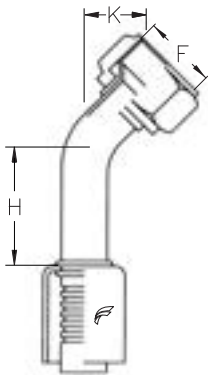
Part Number		F	H	
	in		mm	in
Z06-06MA	5/16	5/8 - 18	48.0	1.89
Z08-08MA	13/32	3/4 - 16	51.0	2.01
Z10-10MA	1/2	7/8 - 14	59.0	2.32
Z12-12MA	5/8	1 1/16 - 14	64.0	2.52


## FA SAE 45° Female Swivel



Part Number		F	H	
	in		mm	in
Z06-06FA	5/16	5/8 - 18	35.0	1.38
Z06-08FA	5/16	3/4 - 16	30.0	1.18
Z08-08FA	13/32	3/4 - 16	30.0	1.18
Z10-10FA	1/2	7/8 - 14	38.0	1.50
Z12-10FA	5/8	7/8 - 14	44.0	1.73
Z12-12FA	5/8	1 1/16 - 14	44.0	1.73

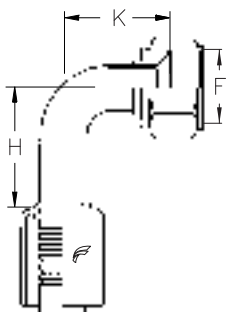
## FA45 SAE 45° Female Swivel - 45° Elbow




Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06FA45	5/16	5/8 - 18	21.0	0.83	14.0	.55
Z08-08FA45	13/32	3/4 - 16	24.0	0.94	16.0	.63
Z10-10FA45	1/2	7/8 - 14	32.0	1.26	22.0	.87
Z12-10FA45	5/8	7/8 - 14	38.0	1.50	25.0	.98
Z12-12FA45	5/8	1 1/16 - 14	38.0	1.50	25.0	.98

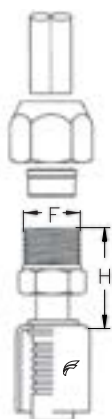



### FA90 SAE 45° Female Swivel - 90° Elbow



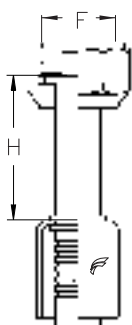
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06FA90	5/16	5/8 - 18	27.0	1.06	27.0	1.06
Z08-08FA90	13/32	3/4 - 16	32.0	1.26	32.0	1.26
Z10-10FA90	1/2	7/8 - 14	38.0	1.50	38.0	1.50
Z12-10FA90	5/8	7/8 - 14	44.0	1.73	38.0	1.50
Z12-12FA90	5/8	1 1/16 - 14	44.0	1.73	38.0	1.50


### MRNS SAE Flareless Male Assembly



Part Number		F	Tube OD		H	
	in		mm	in	mm	in
Z06-06MRNS	5/16	5/8 - 18	9.53	.375	30.0	1.17
Z08-08MRNS	13/32	3/4 - 16	12.70	.500	35.0	1.36
Z08-10MRNS	13/32	7/8 - 14	15.88	.625	38.0	1.48
Z10-08MRNS	1/2	3/4 - 16	12.70	.500	38.0	1.48
Z10-10MRNS	1/2	7/8 - 14	15.88	.625	38.0	1.48
Z12-10MRNS	5/8	7/8 - 14	15.88	.625	43.0	1.71
Z12-12MRNS	5/8	1 1/16 - 14	19.05	.750	46.0	1.83

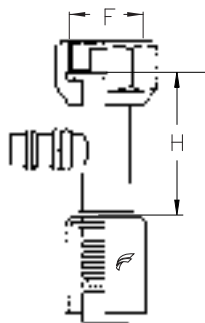
### BTF Bumped Tube O-Ring Female Swivel




Part Number		F	H	
	in		mm	in
Z06-06BTF	5/16	5/8 - 18	35.0	1.38
Z06-08BTF	5/16	3/4 - 16	38.0	1.50
Z08-08BTF	13/32	3/4 - 16	38.0	1.50
Z10-08BTF	1/2	7/8 - 14	43.0	1.69
Z10-10BTF	1/2	1 1/16 - 14	43.0	1.69
Z12-10BTF	5/8	7/8 - 14	46.0	1.81
Z12-12BTF	5/8	1 1/16 - 14	46.0	1.81

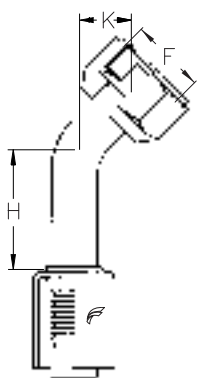
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## BTF-P Bumped Tube O-Ring Female Swivel (R134a Service Port)



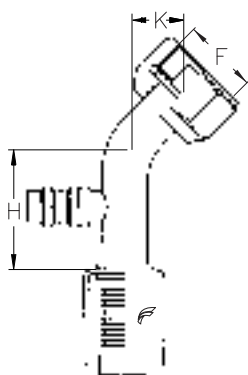
Part Number		F	H	
	in		mm	in
Z06-06BTF-P	$\frac{5}{16}$	$\frac{5}{8}$ - 18	48	1.89
Z08-08BTF-P	$\frac{13}{32}$	$\frac{3}{4}$ - 16	48	1.89
Z10-10BTF-P	$\frac{1}{2}$	$\frac{7}{8}$ - 14	54	2.13
Z12-12BTF-P	$\frac{5}{8}$	$1\frac{1}{16}$ - 14	57	2.24


## BTF45 Bumped Tube O-Ring Female Swivel 45° Elbow



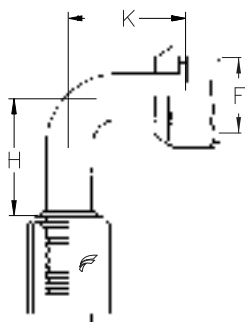
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTF45	$\frac{5}{16}$	$\frac{5}{8}$ - 18	21.0	.83	14.0	.55
Z08-08BTF45	$\frac{13}{32}$	$\frac{3}{4}$ - 16	24.0	.94	16.0	.63
Z10-10BTF45	$\frac{1}{2}$	$\frac{7}{8}$ - 14	32.0	1.26	22.0	.87
Z12-10BTF45	$\frac{5}{8}$	$\frac{7}{8}$ - 14	38.0	1.50	24.0	.94
Z12-12BTF45	$\frac{5}{8}$	$1\frac{1}{16}$ - 14	38.0	1.50	24.0	.94


## BTF45-P Bumped Tube O-Ring Female Swivel 45° Elbow (R134a Service Port)



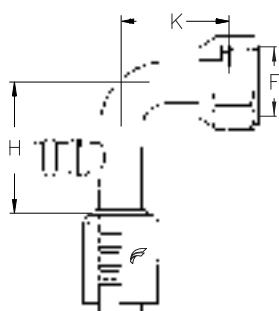
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTF45-P	$\frac{5}{16}$	$\frac{5}{8}$ - 18	41.0	1.61	14.0	.55
Z08-08BTF45-P	$\frac{13}{32}$	$\frac{3}{4}$ - 16	41.0	1.61	16.0	.63
Z10-10BTF45-P	$\frac{1}{2}$	$\frac{7}{8}$ - 14	44.0	1.73	22.0	.87
Z12-10BTF45-P	$\frac{5}{8}$	$\frac{7}{8}$ - 14	48.0	1.89	24.0	.94
Z12-12BTF45-P	$\frac{5}{8}$	$1\frac{1}{16}$ - 14	48.0	1.89	24.0	.94


## BTF90 Bumped Tube O-Ring Female Swivel 90° Elbow



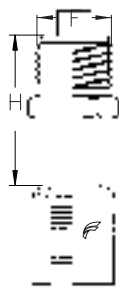
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTF90	$\frac{5}{16}$	$\frac{5}{8}$ - 18	27.0	1.06	28.0	1.10
Z06-08BTF90	$\frac{5}{16}$	$\frac{3}{4}$ - 16	32.0	1.26	33.0	1.30
Z08-06BTF90	$\frac{13}{32}$	$\frac{5}{8}$ - 18	32.0	1.26	33.0	1.30
Z08-08BTF90	$\frac{13}{32}$	$\frac{3}{4}$ - 16	32.0	1.26	33.0	1.30
Z10-10BTF90	$\frac{1}{2}$	$\frac{7}{8}$ - 14	38.0	1.50	38.0	1.50
Z12-10BTF90	$\frac{5}{8}$	$\frac{7}{8}$ - 14	45.0	1.77	45.0	1.77
Z12-12BTF90	$\frac{5}{8}$	$1\frac{1}{16}$ - 14	45.0	1.77	45.0	1.77


## BTF90-P Bumped Tube O-Ring Female Swivel 90° Elbow (R134a Service Port)



Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTF90-P	$\frac{5}{16}$	$\frac{5}{8}$ - 18	54.0	2.13	28.0	1.10
Z08-08BTF90-P	$\frac{13}{32}$	$\frac{3}{4}$ - 16	54.0	2.13	33.0	1.30
Z10-10BTF90-P	$\frac{1}{2}$	$\frac{7}{8}$ - 14	60.0	2.36	38.0	1.50
Z12-10BTF90-P	$\frac{5}{8}$	$\frac{7}{8}$ - 14	68.0	2.68	44.0	1.73
Z12-12BTF90-P	$\frac{5}{8}$	$1\frac{1}{16}$ - 14	68.0	2.68	44.0	1.73

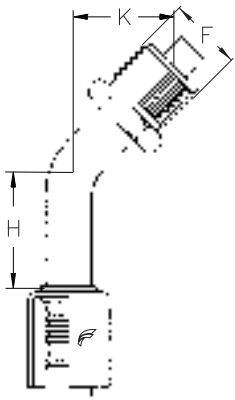
## BTM Bumped Tube O-Ring Male Swivel




Part Number		F	H	
	in		mm	in
Z06-06BTM	$\frac{5}{16}$	$\frac{5}{8}$ - 18	43.0	1.69
Z08-08BTM	$\frac{13}{32}$	$\frac{3}{4}$ - 18	45.0	1.77
Z10-10BTM	$\frac{1}{2}$	$\frac{7}{8}$ - 18	48.0	1.89
Z10-12BTM	$\frac{1}{2}$	$1\frac{1}{16}$ - 16	60.0	2.36
Z12-10BTM	$\frac{5}{8}$	$\frac{7}{8}$ - 18	60.0	2.36
Z12-12BTM	$\frac{5}{8}$	$1\frac{1}{16}$ - 16	60.0	2.36

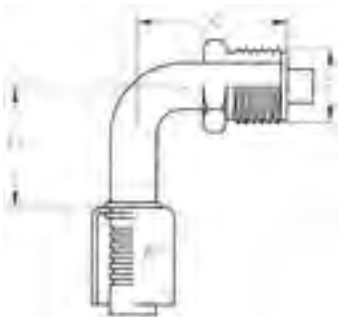
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## BTM45 Bumped Tube O-Ring Male Swivel - 45° Elbow



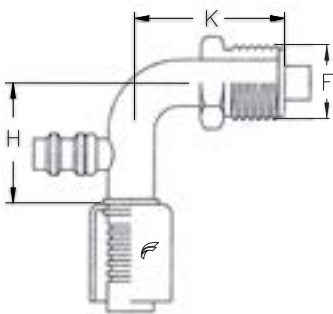
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTM45	5/16	5/8 - 18	21.0	.83	22.0	.87
Z08-08BTM45	13/32	3/4 - 18	24.0	.95	25.0	.98
Z10-10BTM45	5/8	7/8 - 18	32.0	1.26	27.0	1.06
Z12-12BTM45	5/8	1 1/16 - 16	38.0	1.50	30.0	1.18


## BTM90 Bumped Tube O-Ring Male Swivel - 90° Elbow



Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTM90	5/16	5/8 - 18	27.0	1.06	41.0	1.61
Z08-08BTM90	13/32	3/4 - 18	32.0	1.26	48.0	1.89
Z10-10BTM90	1/2	7/8 - 18	38.0	1.50	54.0	2.13
Z12-10BTM90	5/8	7/8 - 18	45.0	1.77	57.0	2.24

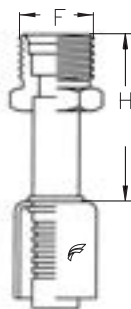
## BTM90-P Bumped Tube O-Ring Male Swivel - 90° Elbow (R134a Service Port)




Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06BTM90-P	5/16	5/8 - 18	54.0	2.13	41.0	1.16
Z08-08BTM90-P	5/16	3/4 - 18	54.0	2.13	48.0	1.89
Z10-10BTM90-P	13/32	7/8 - 18	60.0	2.36	54.0	2.13
Z12-12BTM90-P	13/32	1 1/16 - 16	68.0	2.68	55.0	2.17

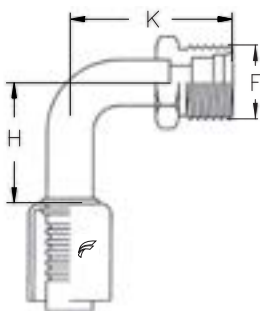
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## IOM Bumped Tube O-Ring Male Swivel



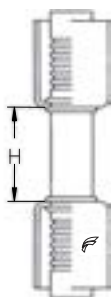
Part Number		F	H	
	in		mm	in
Z06-06IOM	5/16	5/8 - 18	37.0	1.46
Z08-08IOM	13/32	3/4 - 16	41.0	1.61
Z10-10IOM	1/2	7/8 - 14	54.0	2.13
Z12-10IOM	5/8	7/8 - 14	43.0	1.69
Z12-12IOM	5/8	1 1/16 - 14	60.0	2.36



## IOM90 Insert O-Ring Male - 90° Elbow



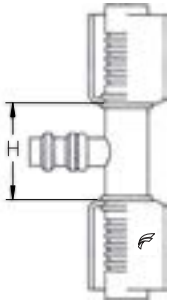
Part Number		F	H		K	
	in		mm	in	mm	in
Z06-06IOM90	5/16	5/8 - 18	27.0	1.06	38.0	1.50
Z08-08IOM90	13/32	3/4 - 16	32.0	1.26	44.0	1.73
Z10-10IOM90	1/2	7/8 - 14	38.0	1.50	51.0	2.00
Z12-12IOM90	5/8	1 1/16 - 14	60.0	2.36	64.0	2.52

## HM Hose Mender



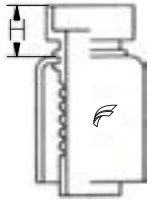
Part Number			H	
	in	in	mm	in
Z06-06HM	5/16	5/16	38	1.50
Z06-08HM	5/16	13/32	38	1.50
Z08-08HM	13/32	13/32	38	1.50
Z08-10HM	13/32	1/2	41	1.61
Z10-10HM	1/2	1/2	41	1.61
Z10-12HM	1/2	5/8	44	1.73
Z12-12HM	5/8	5/8	44	1.73

## HM-P Hose Mender (R134a Service Port)



Part Number			H	
	in	in	mm	in
Z06-06HM-P	5/16	5/16	38.0	1.50
Z08-08HM-P	13/32	13/32	38.0	1.50
Z10-10HM-P	1/2	1/2	41.0	1.61
Z12-12HM-P	5/8	5/8	44.0	1.73

## BS Braze Socket



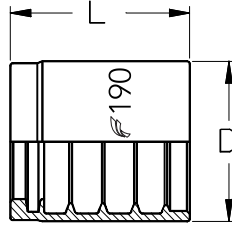
Part Number		F	H	
	in		mm	in
Z06-06BS	5/16	3/8	15.0	.59
Z08-08BS	13/32	1/2	15.0	.59
Z10-10BS	1/2	5/8	15.0	.59
Z12-12BS	5/8	3/4	15.0	.59


## ACO Air Conditioning Ferrule O-Rings



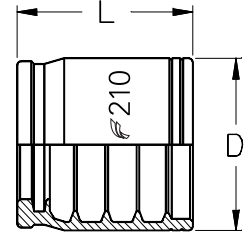
Part Number		ID		Width	
	in	mm	in	mm	in
Z06ACO	3/8	7.65	.30	1.50	0.06
Z08ACO	1/2	10.82	.43	1.50	0.06
Z10ACO	5/8	14.00	.55	1.50	0.06
Z12ACO	3/4	17.17	.68	1.50	0.06


## 190 No Skive Ferrule for R17 BN175, BN160, BN170T



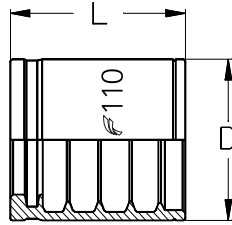
Part Number		D	L
	in	mm	mm
190-04	1/4	19.0	23.0
190-06	3/8	23.0	30.0


## 210 No Skive Ferrule for 2SN BN200, BN220



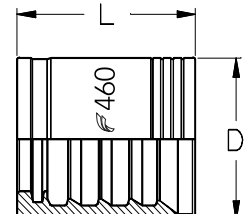
Part Number		D	L
	in	mm	mm
210-03	3/16	20.0	24.0
210-04	1/4	22.0	26.0
210-05	5/16	24.0	27.5
210-06	3/8	26.0	30.0
210-08	1/2	34.0	35.0
210-10	5/8	34.0	35.0
210-12	3/4	38.0	40.0
210-16	1	48.0	50.0
210-20	1 1/4	60.0	57.0
210-24	1 1/2	67.0	62.0
210-32	2	80.0	66.0


## 110 No Skive Ferrule for 1SN, 2SC, BN120, BN250, BN300, BN270T



Part Number		D	L
	in	mm	mm
110-03	3/16	19.0	24.0
110-04	1/4	20.0	27.0
110-05	5/16	22.0	27.5
110-06	3/8	24.5	30.0
110-08	1/2	28.0	32.5
110-10	5/8	32.0	35.0
110-12	3/4	36.0	40.0
110-16	1	45.0	50.0
110-20	1 1/4	54.0	50.0
110-24	1 1/2	62.0	55.0
110-32	2	76.0	60.0
110-40	2 1/2	88.0	90.0
110-48	3	101.0	90.0

## 460/464 Skive Ferrule for 4 Spiral SN300



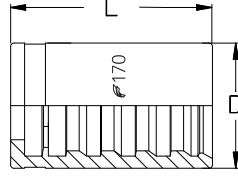
Part Number		D	L
	in	mm	mm
460-06	3/8	26.0	32.5
460-08	1/2	30.0	35.0
460-10	5/8	34.0	38.5
460-12	3/4	38.0	43.5
460-16	1	46.0	54.0
464-20	1 1/4	56.0	61.0
464-24	1 1/2	65.0	68.0
464-32	2	78.0	74.0

# Two Piece

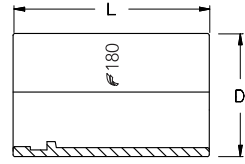
Two Piece

3 Ferrules


## 170 No Skive Ferrule for Thermoplastic 720, 711, 725



## 180 No Skive Ferrule for Teflon TBR



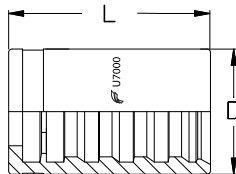
Part Number		D	L
	in	mm	mm
170-03	3/16	16.0	23.6
170-04	1/4	18.0	23.6
170-05	5/16	20.0	24.6
170-06	3/8	22.0	32.0
170-08	1/2	27.0	34.0
170-12	3/4	33.8	40.0

Part Number		D	L
	in	mm	mm
180-03	3/16	12.0	25.5
180-04	1/4	14.0	29.5
180-05	5/16	17.0	32.0
180-06	3/8	19.0	32.0
180-08	1/2	23.0	32.0
180-10	5/8	27.0	37.0
180-12	3/4	30.0	43.0
180-16	1	37.0	48.0
180-20	1 1/4	46.0	59.0

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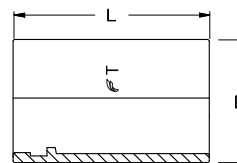


## U7000 No Skive Ferrule for Thermoplastic 720, 711, 725



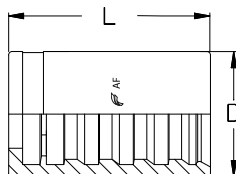
Part Number		D	L
	in	mm	mm
U7000-03	3/16	14.5	25.4
U7000-04	1/4	16.5	30.7
U7000-05	5/16	20.0	30.5
U7000-06	3/8	21.0	32.0
U7000-08	1/2	24.6	36.8
U7000-12	3/4	30.1	44.7

## T No Skive Ferrule Thermoplastic Hose



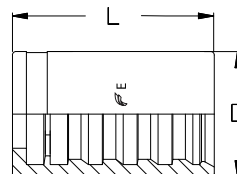
Part Number		D	L
	in	mm	mm
T-04	1/4	12.0	25.5
T-05	5/16	14.0	29.5
T-06	3/8	17.0	32.0
T-08	1/2	19.0	32.0
T-10	5/8	23.0	32.0
T-12	3/4	27.0	37.0
T-16	1	30.0	43.0

## AF No Skive Ferrule for Industrial Hose





Part Number		D	L
	in	mm	mm
AF-04	1/4	21.0	27.9
AF-06	3/8	27.0	30.3
AF-08	1/2	31.0	34.0
AF-12	3/4	40.9	42.1
AF-16	1	48.0	52.0

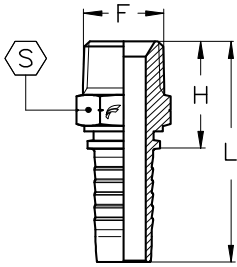
## E No Skive Ferrule for Steel Braid





Part Number		D	L
	in	mm	mm
E-04	1/4	22.5	28.0
E-06	3/8	27.0	31.0
E-08	1/2	31.0	33.0
E-12	3/4	38.5	41.0
E-16	1	48.8	50.0
E-20	1 1/4	60.0	57.5
E-24	1 1/2	67.0	62.0
E-32	2	80.0	67.0

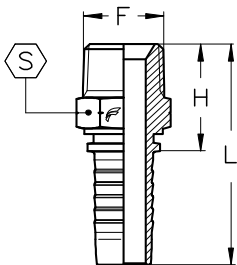
## MP NPT Male

Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W03-02MP	3/16	1/8 - 27	20.6	0.81	45.6	1.79	12	1/2
W03-04MP	3/16	1/4 - 18	26.5	1.04	51.5	2.03	14	9/16
W04-02MP	1/4	1/8 - 27	21.1	0.83	49.1	1.93	12	1/2
W04-04MP	1/4	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
W04-06MP	1/4	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
W04-08MP	1/4	1/2 - 14	34.0	1.34	62.0	2.44	22	7/8
W05-04MP	5/16	1/4 - 18	27.0	1.06	55.0	2.16	14	9/16
W05-06MP	5/16	3/8 - 18	28.6	1.12	56.6	2.23	19	3/4
W06-04MP	3/8	1/4 - 18	27.5	1.08	58.0	2.28	16	5/8
W06-06MP	3/8	3/8 - 18	28.6	1.12	59.1	2.33	19	3/4
W06-08MP	3/8	1/2 - 14	34.0	1.34	64.5	2.54	22	7/8
W08-04MP	1/2	1/4 - 18	30.5	1.20	63.2	2.49	22	7/8
W08-06MP	1/2	3/8 - 18	30.6	1.20	63.6	2.50	22	7/8
W08-08MP	1/2	1/2 - 14	35.0	1.38	68.0	2.68	22	7/8
W08-12MP	1/2	3/4 - 14	36.9	1.45	69.9	2.75	27	1 1/16
W10-08MP	5/8	1/2 - 14	36.2	1.42	72.0	2.83	25	1
W10-12MP	5/8	3/4 - 14	37.1	1.46	72.9	2.87	27	1 1/16
W12-08MP	3/4	1/2 - 14	37.5	1.48	78.0	3.07	27	1 1/16
W12-12MP	3/4	3/4 - 14	37.9	1.49	78.4	3.09	27	1 1/16
W12-16MP	3/4	1 - 11 1/2	45.5	1.79	86.0	3.38	35	1 7/16
W16-12MP	1	3/4 - 14	40.4	1.59	91.4	3.60	32	1 1/4
W16-16MP	1	1 - 11 1/2	47.0	1.85	98.0	3.86	35	1 7/16
W16-20MP	1	1 1/4 - 11 1/2	51.1	2.01	102.1	4.02	46	1 13/16
W20-20MP	1 1/4	1 1/4 - 11 1/2	51.9	2.04	109.6	4.31	46	1 13/16
W24-24MP	1 1/2	1 1/2 - 11 1/2	55.0	2.16	119.5	4.70	50	2
W32-32MP	2	2 - 11 1/2	64.0	2.52	134.0	5.27	65	2 5/16
W40-40MP	2 1/2	2 1/2 - 8	69.0	2.17	150.0	5.91	75	3
W48-48MP	3	3 - 8	79.0	3.11	166.0	6.54	90	3 7/16



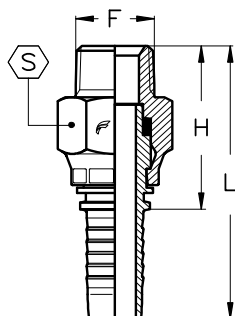
## MPL NPT Male Long

Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-04MPL	1/4	1/4 - 18	36.8	1.45	64.8	2.55	14	9/16
W06-06MPL	3/8	3/8 - 18	38.9	1.53	69.4	2.73	19	3/4



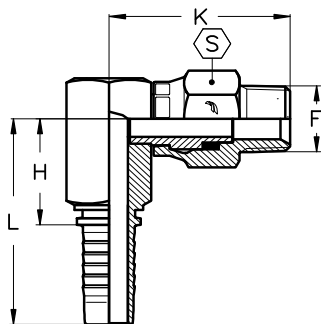
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## MPX NPT Male Swivel



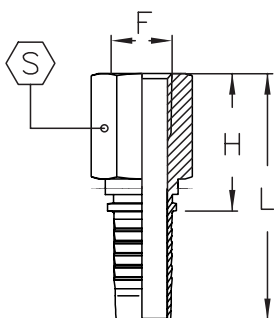
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-02MPX	1/4	1/8 - 18	32.0	1.28	60.0	2.38	13	1/2
W04-04MPX	1/4	1/4 - 18	41.0	1.61	69.0	2.72	17	11/16
W04-06MPX	1/4	3/8 - 18	46.0	1.81	74.0	2.91	22	7/8
W06-04MPX	3/8	1/4 - 18	41.0	1.61	72.0	2.83	17	11/16
W06-06MPX	3/8	3/8 - 18	45.0	1.77	75.0	2.95	22	7/8
W06-08MPX	3/8	1/2 - 14	57.0	2.24	88.0	3.46	27	11/16
W08-06MPX	1/2	3/8 - 18	46.0	1.81	79.0	3.11	22	7/8
W08-08MPX	1/2	1/2 - 14	56.0	2.20	89.0	3.50	27	11/16
W12-12MPX	3/4	3/4 - 14	61.0	2.40	101.0	3.98	34	13/8
W16-16MPX	1	1 - 11 1/2	65.0	2.56	116.0	4.57	38	1 1/2

## MPX90B NPT Male Swivel - 90° Block Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04MPX90B	1/4	1/4 - 18	32.0	1.26	60.0	2.36	39.7	1.56	16	5/8
W06-06MPX90B	3/8	3/8 - 18	32.5	1.28	63.0	2.48	41.0	1.61	19	3/4
W08-08MPX90B	1/2	1/2 - 14	33.0	1.30	66.0	2.60	48.0	1.89	22	7/8
W12-12MPX90B	3/4	3/4 - 14	43.5	1.71	84.0	3.31	64.0	2.52	32	1 1/4

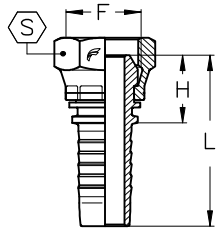
## FP NPT Female Rigid



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-02FP	1/4	1/8 - 27	21.5	0.85	49.5	1.95	16	5/8
W04-04FP	1/4	1/4 - 18	27.1	1.07	55.1	2.17	19	3/4
W04-06FP	1/4	3/8 - 18	28.4	1.12	56.4	2.22	22	7/8
W06-04FP	3/8	1/4 - 18	27.1	1.07	57.6	2.27	19	3/4
W06-06FP	3/8	3/8 - 18	28.4	1.12	58.9	2.32	22	7/8
W06-08FP	3/8	1/2 - 14	34.5	1.36	65.0	2.56	29	1 3/16
W08-08FP	1/2	1/2 - 14	35.5	1.40	68.5	2.70	29	1 3/16
W12-12FP	3/4	3/4 - 14	38.0	1.50	78.5	3.09	32	1 1/4
W16-16FP	1	1 - 11 1/2	45.8	1.80	96.8	3.81	36	1 1/4

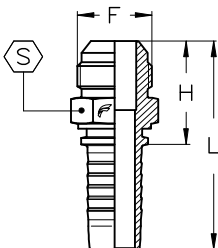
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FPX NPSM 60° Female Swivel



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-04FPX	1/4	1/4 - 18	19.0	0.75	47.0	1.85	17	11/16
W06-06FPX	3/8	3/8 - 18	21.0	0.83	51.0	2.00	22	7/8
W08-08FPX	1/2	1/2 - 14	23.0	0.90	56.0	2.20	25	1
W12-12FPX	3/4	3/4 - 14	27.0	1.06	67.0	2.64	32	1 1/4
W16-16FPX	1	1 - 11 1/2	30.0	1.18	81.0	3.19	38	1 1/2

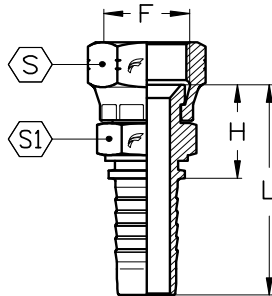
## MJ JIC 37° Male






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W03-04MJ	3/16	7/16 - 20	25.0	0.98	50.0	1.97	12	1/2
W04-04MJ	1/4	7/16 - 20	25.5	1.00	53.5	2.11	12	1/2
W04-05MJ	1/4	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
W04-06MJ	1/4	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
W05-05MJ	5/16	1/2 - 20	25.5	1.00	53.5	2.11	14	9/16
W05-06MJ	5/16	9/16 - 18	26.6	1.05	54.6	2.15	15	5/8
W05-08MJ	5/16	3/4 - 16	29.7	1.17	57.7	2.27	19	3/4
W06-06MJ	3/8	9/16 - 18	26.6	1.05	57.1	2.25	15	5/8
W06-08MJ	3/8	3/4 - 16	29.7	1.17	60.2	2.37	19	3/4
W06-10MJ	3/8	7/8 - 14	34.3	1.35	64.8	2.55	24	1
W08-06MJ	1/2	9/16 - 18	29.7	1.17	62.6	2.46	19	3/4
W08-08MJ	1/2	3/4 - 16	30.7	1.21	63.7	2.51	19	3/4
W08-10MJ	1/2	7/8 - 14	35.3	1.39	68.3	2.69	24	1
W08-12MJ	1/2	1 1/16 - 12	38.9	1.53	71.9	2.83	27	1 1/16
W10-08MJ	5/8	3/4 - 16	33.7	1.33	68.4	2.69	24	1
W10-10MJ	5/8	7/8 - 14	35.5	1.40	71.3	2.81	24	1
W10-12MJ	5/8	1 1/16 - 12	39.1	1.54	74.9	2.95	27	1 1/16
W12-10MJ	3/4	7/8 - 14	37.3	1.47	77.8	3.06	27	1 1/16
W12-12MJ	3/4	1 1/16 - 12	39.9	1.57	80.4	3.16	27	1 1/16
W12-14MJ	3/4	1 3/16 - 12	41.6	1.64	82.1	3.23	32	1 1/4
W12-16MJ	3/4	1 5/16 - 12	42.1	1.66	82.6	3.25	34	1 3/8
W16-16MJ	1	1 5/16 - 12	43.6	1.72	94.6	3.72	34	1 3/8
W16-20MJ	1	1 5/8 - 12	46.8	1.84	97.8	3.85	42	1 11/16
W20-20MJ	1 1/4	1 5/8 - 12	47.6	1.87	105.3	4.14	42	1 11/16
W24-24MJ	1 1/2	1 7/8 - 12	53.0	2.09	117.5	4.62	50	2
W32-32MJ	2	2 1/2 - 12	63.4	2.50	133.4	5.25	65	2 9/16

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FJ JIC 37° Female Swivel

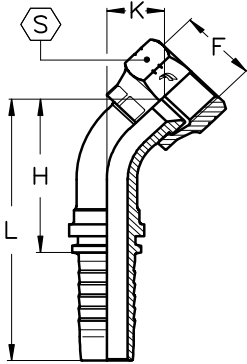


Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
W03-03FJ	3/16	3/8 - 24	19.0	0.75	44.0	1.73	12	1/2	12	1/2
W03-04FJ	3/16	7/16 - 20	19.0	0.75	44.0	1.73	14	9/16	12	1/2
W03-05FJ	3/16	1/2 - 20	45.0	0.59	40.0	1.57	19	3/4	--	--
W04-04FJ	1/4	7/16 - 20	20.5	0.81	48.5	1.91	14	9/16	14	9/16
W04-05FJ	1/4	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
W04-06FJ	1/4	9/16 - 18	22.0	0.87	50.0	1.97	19	3/4	14	9/16
W04-08FJ	1/4	3/4 - 16	15.5	0.61	43.0	1.68	22	7/8	19	3/4
W05-04FJ	5/16	7/16 - 20	21.0	0.83	49.0	1.93	14	9/16	14	9/16
W05-05FJ	5/16	1/2 - 20	21.0	0.83	49.0	1.93	17	11/16	14	9/16
W05-06FJ	5/16	9/16 - 18	22.5	0.88	50.5	1.99	19	3/4	16	5/8
W05-08FJ	5/16	3/4 - 16	24.5	0.97	52.5	2.05	22	7/8	19	3/4
W06-04FJ	3/8	7/16 - 20	21.0	0.83	51.5	2.03	14	9/16	16	5/8
W06-05FJ	3/8	1/2 - 20	21.5	0.85	52.0	2.05	17	11/16	16	5/8
W06-06FJ	3/8	9/16 - 18	22.5	0.88	53.0	2.09	19	3/4	16	5/8
W06-06FJ-01	3/8	9/16 - 18	22.5	0.88	53.0	2.09	18	11/16	16	5/8
W06-08FJ	3/8	3/4 - 16	24.5	0.96	55.0	2.16	22	7/8	19	3/4
W06-10FJ	3/8	7/8 - 14	36.5	1.44	57.0	2.24	27	11/16	22	7/8
W08-06FJ	1/2	9/16 - 18	24.5	0.96	57.5	2.26	19	3/4	19	3/4
W08-08FJ	1/2	3/4 - 16	25.5	1.00	58.5	2.30	22	7/8	19	3/4
W08-10FJ	1/2	7/8 - 14	27.5	1.08	60.5	2.38	27	11/16	22	7/8
W08-12FJ	1/2	1 1/16 - 12	30.3	1.19	63.3	2.49	32	1 1/4	25	1
W10-08FJ	5/8	3/4 - 16	26.7	1.05	62.5	2.46	22	7/8	22	7/8
W10-10FJ	5/8	7/8 - 14	27.7	1.09	63.5	2.50	27	1 1/16	22	7/8
W10-12FJ	5/8	1 1/16 - 12	30.5	1.20	66.3	2.61	32	1 1/4	25	1
W12-10FJ	3/4	7/8 - 14	30.0	1.18	70.5	2.77	27	1 1/16	27	1 1/16
W12-12FJ	3/4	1 1/16 - 12	31.8	1.25	72.3	2.85	32	1 1/4	27	1 1/16
W12-14FJ	3/4	1 3/16 - 12	34.5	1.36	75.0	2.95	36	1 7/16	30	1 3/16
W12-16FJ	3/4	1 5/16 - 12	35.5	1.40	76.0	2.99	38	1 1/2	32	1 1/4
W16-12FJ	1	1 1/16 - 12	34.3	1.35	85.3	3.36	32	1 1/4	32	1 1/4
W16-16FJ	1	1 5/16 - 12	37.0	1.46	88.0	3.46	38	1 1/2	32	1 1/4
W16-20FJ	1	1 5/8 - 12	42.0	1.65	93.0	3.66	50	2	41	1 5/8
W20-20FJ	1 1/4	1 5/8 - 12	42.8	1.68	100.5	3.96	50	2	41	1 5/8
W20-24FJ	1 1/4	1 7/8 - 12	50.0	1.97	92.0	3.62	60	2 1/2	--	--
W24-24FJ	1 1/2	1 7/8 - 12	47.0	1.85	111.5	4.39	55	2 3/16	46	1 13/16
W32-32FJ	2	2 1/2 - 12	55.5	2.18	125.5	4.94	70	2 3/4	60	2 3/8

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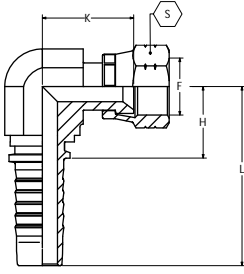
## FJ45 JIC 37° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W03-04FJ45	3/16	7/16 - 20	29.0	1.14	54.0	2.12	10.0	0.39	14	9/16
W04-04FJ45	1/4	7/16 - 20	31.0	1.22	59.0	2.32	10.0	0.39	14	9/16
W04-05FJ45	1/4	1/2 - 20	32.0	1.26	60.0	2.36	11.0	0.43	17	11/16
W04-06FJ45	1/4	9/16 - 18	33.0	1.30	61.0	2.40	12.0	0.47	19	3/4
W05-05FJ45	5/16	1/2 - 20	33.0	1.30	61.0	2.40	11.0	0.43	17	11/16
W05-06FJ45	5/16	9/16 - 18	34.0	1.34	62.0	2.44	12.0	0.47	19	3/4
W06-06FJ45	3/8	9/16 - 18	35.5	1.40	66.0	2.60	12.0	0.47	19	3/4
W06-08FJ45	3/8	3/4 - 16	37.5	1.48	68.0	2.68	14.0	0.55	22	7/8
W08-08FJ45	1/2	3/4 - 16	41.0	1.61	74.0	2.91	14.0	0.57	22	7/8
W08-10FJ45	1/2	7/8 - 14	43.0	1.69	76.0	2.99	16.0	0.63	27	1 1/16
W08-12FJ45	1/2	1 1/16 - 12	45.5	1.79	79.0	3.09	19.0	0.75	32	1 1/4
W10-10FJ45	5/8	7/8 - 14	47.0	1.85	83.0	3.27	16.0	0.63	27	1 1/16
W10-12FJ45	5/8	1 1/16 - 12	50.0	1.97	86.0	3.38	19.0	0.75	32	1 1/4
W12-12FJ45	3/4	1 1/16 - 12	57.0	2.24	97.0	3.82	20.0	0.79	32	1 1/4
W12-14FJ45	3/4	1 3/16 - 12	59.0	2.32	100.0	3.94	22.0	0.87	36	1 7/16
W12-16FJ45	3/4	1 5/16 - 12	61.0	2.40	101.0	3.98	24.0	0.94	38	1 1/2
W16-16FJ45	1	1 5/16 - 12	72.0	2.83	123.0	4.84	24.0	0.94	38	1 1/2
W16-20FJ45	1	1 5/8 - 12	76.0	2.99	127.0	5.00	28.0	1.10	50	2
W20-20FJ45	1 1/4	1 5/8 - 12	85.0	3.35	143.0	5.63	38.0	1.10	50	2
W24-24FJ45	1 1/2	1 7/8 - 12	99.0	3.90	164.0	6.46	46.0	1.26	60	2 3/8
W32-32FJ45	2	2 1/2 - 12	132.0	5.20	202.0	7.95	61.0	1.69	70	2 3/4



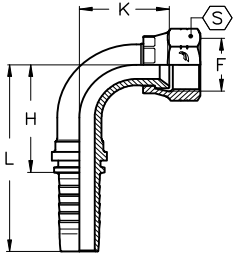
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FJ90B JIC 37° Female Swivel - 90° Block Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04FJ90B	1/4	7/16 - 20	17.3	0.68	43.6	1.72	18.8	0.74	14	9/16
W06-06FJ90B	3/8	9/16 - 18	17.8	0.68	52.1	2.05	21.6	0.85	19	3/4
W08-08FJ90B	1/2	3/4 - 16	21.2	0.83	52.0	2.04	26.2	1.03	22	7/8


## FJ90S JIC 37° Female Swivel - 90° Elbow Short Drop

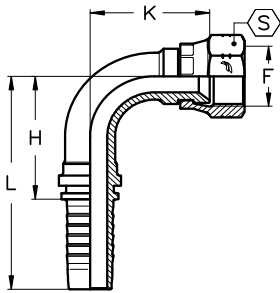


Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04FJ90S	1/4	7/16 - 20	25.5	1.00	53.5	2.11	20.0	0.79	14	9/16
W04-05FJ90S	1/4	1/2 - 20	25.5	1.00	53.5	2.11	21.0	0.83	17	1 1/16
W04-06FJ90S	1/4	9/16 - 18	25.5	1.00	53.5	2.11	23.0	0.90	19	3/4
W06-04FJ90S	3/8	7/16 - 20	25.5	1.00	56.0	2.20	20.0	0.79	14	9/16
W06-06FJ90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	23.0	0.90	19	3/4
W06-08FJ90S	3/8	3/4 - 16	31.0	1.22	61.5	2.42	29.0	1.14	22	7/8
W08-06FJ90S	1/2	9/16 - 18	30.0	1.18	61.5	2.42	23.0	0.90	19	3/4
W08-08FJ90S	1/2	3/4 - 16	37.0	1.46	70.0	2.75	29.0	1.14	22	7/8
W08-10FJ90S	1/2	7/8 - 14	38.0	1.50	71.0	2.79	33.0	1.30	27	1 1/16
W08-12FJ90S	1/2	1 1/16 - 12	40.0	1.57	73.0	2.87	40.0	1.57	32	1 1/4
W10-10FJ90S	5/8	7/8 - 14	43.0	1.69	79.0	3.11	32.0	1.26	27	1 1/16
W10-12FJ90S	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	40.0	1.57	32	1 1/4
W12-10FJ90S	3/4	7/8 - 14	44.0	1.73	84.5	3.33	33.0	1.30	27	1 1/16
W12-12FJ90S	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	43.0	1.69	32	1 1/4
W12-16FJ90S	3/4	1 5/16 - 12	55.0	2.16	95.0	3.74	49.0	1.93	38	1 1/2
W16-16FJ90S	1	1 5/16 - 12	71.0	2.79	122.0	4.80	56.0	2.20	38	1 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FJ90M JIC 37° Female Swivel - 90° Elbow Medium Drop

Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W03-04FJ90M	3/16	7/16 - 20	21.0	0.83	46.0	1.81	21.0	0.83	14	9/16
W04-04FJ90M	1/4	7/16 - 20	25.5	1.00	53.5	2.11	26.0	1.02	14	9/16
W04-05FJ90M	1/4	1/2 - 20	25.5	1.00	53.5	2.11	26.0	1.02	17	11/16
W04-06FJ90M	1/4	9/16 - 18	25.5	1.00	53.5	2.11	27.0	1.06	19	3/4
W05-05FJ90M	5/16	1/2 - 20	28.0	1.10	56.0	2.20	29.0	1.14	17	11/16
W05-06FJ90M	5/16	9/16 - 18	28.0	1.10	56.0	2.20	29.0	1.14	19	3/4
W05-08FJ90M	5/16	3/4 - 16	28.0	1.10	56.0	2.20	27.0	1.06	22	3/4
W06-06FJ90M	3/8	9/16 - 18	31.0	1.22	61.5	2.42	33.0	1.30	19	3/4
W06-08FJ90M	3/8	3/4 - 16	31.0	1.22	61.5	2.42	33.0	1.30	22	7/8
W08-08FJ90M	1/2	3/4 - 16	37.0	1.46	70.0	2.75	39.0	1.53	22	7/8
W08-10FJ90M	1/2	7/8 - 14	37.0	1.46	70.0	2.75	40.0	1.57	27	11/16
W08-12FJ90M	1/2	1 1/16 - 12	37.0	1.46	70.0	2.76	45.0	1.77	32	1 1/4
W10-10FJ90M	5/8	7/8 - 14	45.0	1.77	81.0	3.19	45.0	1.77	27	1 1/16
W10-12FJ90M	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	47.0	1.85	32	1 1/4
W12-10FJ90M	3/4	7/8 - 14	55.0	2.16	95.0	3.74	54.0	2.12	27	1 1/16
W12-12FJ90M	3/4	1 1/16 - 12	55.0	2.16	95.0	3.74	53.0	2.09	32	1 1/4
W12-14FJ90M	3/4	1 3/16 - 12	55.0	2.16	95.0	3.74	54.0	2.12	36	1 7/16
W12-16FJ90M	3/4	1 5/16 - 12	55.0	2.16	95.0	3.74	56.0	2.20	38	1 1/2
W16-16FJ90M	1	1 5/16 - 12	71.0	2.79	122.0	4.80	70.0	2.75	38	1 1/2
W16-20FJ90M	1	1 5/8 - 12	71.0	2.79	122.0	4.80	70.0	2.75	50	2
W20-20FJ90M	1 1/4	1 5/8 - 12	86.0	3.38	143.0	5.63	82.0	3.23	50	2
W20-24FJ90M	1 1/4	1 7/8 - 12	86.0	3.38	143.0	5.63	82.0	3.23	60	2 3/8
W24-24FJ90M	1 1/2	1 7/8 - 12	102.0	4.01	167.0	6.57	96.0	3.78	60	2 3/8
W32-32FJ90M	2	2 1/2 - 12	137.0	5.39	207.0	8.15	134.0	5.27	70	2 3/4

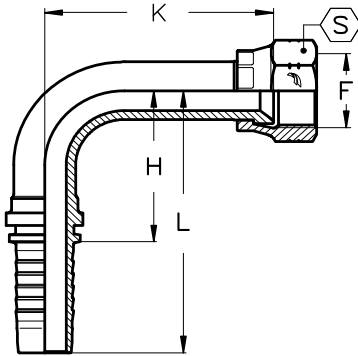


Two Piece

3 W Series - Braided / Four Spiral Hose

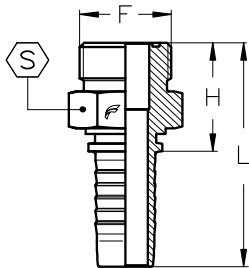


## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop



Part Number	in	F	H		L		K		S	
			mm	in	mm	in	mm	in	mm	in
W04-04FJ90L	¼	7/16 - 20	25.5	1.00	53.5	2.11	46.0	1.81	14	9/16
W04-05FJ90L	¼	½ - 20	25.5	1.00	53.5	2.11	46.0	1.81	17	11/16
W04-06FJ90L	¼	9/16 - 18	25.5	1.00	53.5	2.11	54.0	2.12	19	¾
W06-06FJ90L	3/8	9/16 - 18	31.0	1.22	61.5	2.42	54.0	2.12	19	¾
W06-08FJ90L	3/8	¾ - 16	31.0	1.22	61.5	2.42	64.0	2.52	22	7/8
W08-08FJ90L	½	¾ - 16	38.0	1.50	71.0	2.79	64.0	2.52	22	7/8
W08-10FJ90L	½	7/8 - 14	38.0	1.50	71.0	2.79	70.0	2.75	27	1 1/16
W10-10FJ90L	5/8	7/8 - 14	45.0	1.77	81.0	3.19	70.0	2.75	27	1 1/16
W10-12FJ90L	5/8	1 1/16 - 12	45.0	1.77	81.0	3.19	96.0	3.78	32	1 ¼
W12-12FJ90L	¾	1 1/16 - 12	55.0	2.16	95.0	3.74	96.0	3.78	32	1 ¼
W16-16FJ90L	1	1 5/16 - 12	71.0	2.79	122.0	4.80	114.0	4.49	38	1 ½
W20-20FJ90L	1 ¼	1 5/8 - 12	86.0	3.39	143.0	5.63	129.0	5.08	50	2

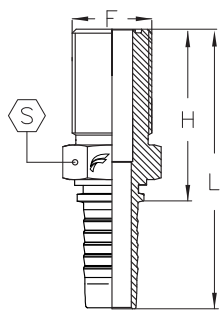
## MF ORFS Male





Part Number	in	F	H		L		S	
			mm	in	mm	in	mm	in
W04-04MF	¼	9/16 - 18	23.5	0.92	51.5	2.02	17	1 1/16
W04-06MF	¼	1 1/16 - 16	25.5	1.00	53.5	2.10	19	¾
W05-06MF	5/16	1 1/16 - 16	25.5	1.00	53.5	2.11	19	¾
W06-06MF	3/8	1 1/16 - 16	25.5	1.00	56.0	2.20	19	¾
W06-08MF	3/8	1 3/16 - 16	28.5	1.12	59.0	2.32	22	7/8
W06-10MF	3/8	1 - 14	33.0	1.29	63.5	2.50	27	1 1/16
W08-08MF	½	1 3/16 - 16	29.5	1.16	62.5	2.46	22	7/8
W08-10MF	½	1 - 14	34.0	1.33	67.0	2.63	27	1 1/16
W08-12MF	½	1 3/16 - 12	37.0	1.45	70.0	2.75	32	1 ¼
W10-10MF	5/8	1 - 14	34.0	1.33	70.0	2.75	27	1 1/16
W10-12MF	5/8	1 3/16 - 12	37.0	1.45	73.0	2.87	32	1 ¼
W12-12MF	¾	1 3/16 - 12	38.0	1.49	78.5	3.09	32	1 ¼
W12-16MF	¾	1 7/16 - 12	42.5	1.67	83.0	3.26	41	1 5/8
W16-16MF	1	1 7/16 - 12	44.0	1.73	95.0	3.74	41	1 5/8
W20-20MF	1 ¼	1 11/16 - 12	46.0	1.81	104.0	4.09	46	1 13/16
W24-24MF	1 ½	2 - 12	50.0	1.97	115.0	4.53	55	2 1/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

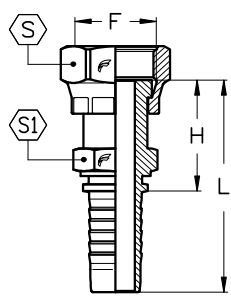
## MFK ORFS Male Bulkhead






Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W06-06MFK*	3/8	1 1/16 - 16	47.0	1.85	77.0	3.03	19	3/4
W08-08MFK*	1/2	1 3/16 - 16	50.8	2.00	83.3	3.28	22	7/8

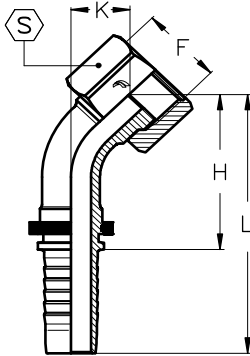
\* Locknut included.



## FF ORFS Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
W04-04FF	1/4	9/16 - 18	26.5	1.04	54.5	2.14	17	1 1/16	14	9/16
W04-06FF	1/4	1 1/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
W04-08FF	1/4	1 3/16 - 16	32.5	1.28	60.5	2.38	24	1	19	3/4
W05-06FF	5/16	1 1/16 - 16	28.5	1.12	56.5	2.22	22	7/8	16	5/8
W06-04FF	3/8	9/16 - 18	26.5	1.04	57.0	2.24	17	1 1/16	16	5/8
W06-06FF	3/8	1 1/16 - 16	28.5	1.12	59.0	2.32	22	7/8	16	5/8
W06-08FF	3/8	1 3/16 - 16	32.5	1.27	63.0	2.48	24	1	19	3/4
W08-06FF	1/2	1 1/16 - 16	30.5	1.20	63.5	2.50	22	7/8	19	3/4
W08-08FF	1/2	1 3/16 - 16	33.5	1.31	66.5	2.61	24	1	19	3/4
W08-10FF	1/2	1 - 14	39.5	1.55	72.5	2.85	30	1 3/16	24	1
W08-12FF	1/2	1 3/16 - 12	43.5	1.71	76.5	3.01	36	1 7/16	27	1 1/16
W10-08FF	5/8	1 3/16 - 16	35.7	1.41	71.5	2.81	24	1	24	1
W10-10FF	5/8	1 - 14	39.5	1.55	75.5	2.97	30	1 3/16	24	1
W10-12FF	5/8	1 3/16 - 12	43.5	1.71	79.5	3.12	36	1 7/16	27	1 1/16
W12-10FF	3/4	1 - 14	41.5	1.63	82.0	3.22	30	1 3/16	27	1 1/16
W12-12FF	3/4	1 3/16 - 12	44.5	1.75	85.0	3.34	36	1 7/16	27	1 1/16
W12-16FF	3/4	1 7/16 - 12	47.5	1.87	88.0	3.46	41	1 5/8	36	1 7/16
W16-12FF	1	1 3/16 - 12	47.0	1.85	98.0	3.85	36	1 7/16	32	1 1/4
W16-16FF	1	1 7/16 - 12	49.0	1.92	100.0	3.93	41	1 5/8	36	1 7/16
W16-20FF	1	1 11/16 - 12	50.5	1.98	102.0	4.01	50	2	41	1 5/8
W20-20FF	1 1/4	1 11/16 - 12	51.0	2.00	109.0	4.29	50	2	41	1 5/8
W20-24FF	1 1/4	2 - 12	54.5	2.15	112.0	4.41	60	2 3/8	50	2
W24-24FF	1 1/2	2 - 12	54.5	2.14	119.0	4.68	60	2 3/8	50	2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



**FF ORFS Female Swivel - 45° Elbow**

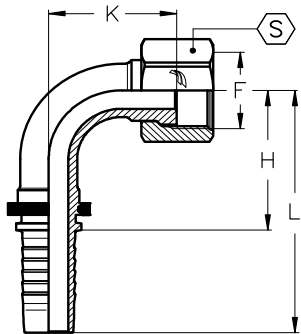
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04FF45	1/4	9/16 - 18	32.5	1.27	60.5	2.38	10.5	0.41	17	1 1/16
W04-06FF45	1/4	1 1/16 - 16	34.5	1.35	62.5	2.46	12.5	0.49	22	7/8
W05-06FF45	5/16	1 1/16 - 16	35.0	1.37	63.0	2.48	12.5	0.49	22	7/8
W06-04FF45	3/8	9/16 - 18	35.0	1.37	65.5	2.59	11.5	0.45	17	1 1/16
W06-06FF45	3/8	1 1/16 - 16	36.0	1.41	66.5	2.61	12.5	0.49	22	7/8
W06-08FF45	3/8	1 3/16 - 16	38.5	1.51	69.0	2.71	15.0	0.59	24	1
W08-06FF45	1/2	1 1/16 - 16	46.5	1.83	79.5	3.12	19.5	0.76	22	7/8
W08-08FF45	1/2	1 3/16 - 16	42.5	1.67	75.5	2.97	15.5	0.61	24	1
W08-10FF45	1/2	1 - 14	45.0	1.77	78.0	3.07	17.5	0.68	30	1 3/16
W08-12FF45	1/2	1 3/16 - 12	47.0	1.85	80.0	3.14	20.5	0.80	36	1 7/16
W10-10FF45	5/8	1 - 14	49.0	1.92	85.0	3.34	18.0	0.70	30	1 3/16
W10-12FF45	5/8	1 3/16 - 12	51.5	2.02	87.5	3.44	20.5	0.80	36	1 7/16
W12-10FF45	3/4	1 - 14	64.0	2.51	104.0	4.09	25.5	1.00	30	1 3/16
W12-12FF45	3/4	1 3/16 - 12	58.0	2.28	99.0	3.89	21.0	0.82	36	1 7/16
W12-16FF45	3/4	1 7/16 - 12	60.5	2.38	101.0	3.97	23.5	0.92	41	1 5/8
W16-16FF45	1	1 7/16 - 12	73.0	2.87	124.0	4.88	24.0	0.94	41	1 5/8
W16-20FF45	1	1 11/16 - 12	75.0	2.95	126.0	4.96	26.5	1.04	50	2
W20-20FF45	1 1/4	1 11/16 - 12	84.0	3.30	142.0	5.59	27.0	1.06	50	2
W24-24FF45	1 1/2	2 - 12	98.0	3.85	163.0	6.41	30.0	1.18	60	2 3/8

3



W Series - Braided / Four Spiral Hose

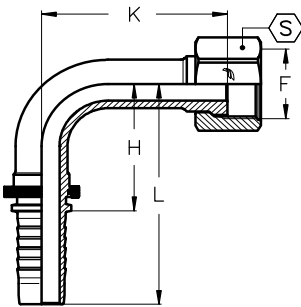
## FF90S ORFS Female Swivel - 90° Elbow Short Drop

Part Number		F	H		L		K			
			mm	in	mm	in	mm	in	mm	in
W04-04FF90S	1/4	9/16 - 18	27.0	1.06	55.0	2.17	21.0	0.83	17	11/16
W04-06FF90S	1/4	1 1/16 - 16	27.0	1.06	55.0	2.17	24.0	0.94	22	7/8
W05-06FF90S	5/16	1 1/16 - 16	29.0	1.14	57.0	2.24	25.0	0.98	22	7/8
W06-04FF90S	3/8	9/16 - 18	30.0	1.18	60.5	2.38	22.0	0.87	17	11/16
W06-06FF90S	3/8	1 1/16 - 16	31.5	1.24	62.0	2.44	24.5	0.96	22	7/8
W06-08FF90S	3/8	1 3/16 - 16	31.0	1.22	61.0	2.40	30.0	1.18	24	1
W08-06FF90S	1/2	1 1/16 - 16	37.0	1.46	70.0	2.76	24.5	0.96	22	7/8
W08-08FF90S	1/2	1 3/16 - 16	39.0	1.54	72.0	2.83	31.0	1.22	24	1
W08-10FF90S	1/2	1 - 14	39.0	1.54	72.0	2.83	34.0	1.34	30	1 3/16
W08-12FF90S	1/2	1 3/16 - 12	39.0	1.54	72.0	2.83	42.0	1.65	36	1 7/16
W10-08FF90S	5/8	1 3/16 - 16	41.0	1.61	75.0	2.95	31.0	1.22	24	1
W10-10FF90S	5/8	1 - 14	45.0	1.77	81.0	3.19	35.0	1.38	30	1 3/16
W10-12FF90S	5/8	1 3/16 - 12	45.0	1.77	81.0	3.19	42.0	1.65	36	1 7/16
W12-10FF90S	3/4	1 - 14	46.5	1.83	83.5	3.29	35.0	1.38	30	1 3/16
W12-12FF90S	3/4	1 3/16 - 12	55.0	2.17	95.0	3.74	45.0	1.77	36	1 7/16
W12-16FF90S	3/4	1 7/16 - 12	55.0	2.17	95.0	3.74	49.0	1.93	41	1 5/8
W16-16FF90S	1	1 7/16 - 12	71.0	2.79	122.0	4.80	55.0	2.17	41	1 5/8
W16-20FF90S	1	1 11/16 - 12	71.0	2.79	122.0	4.80	58.0	2.28	50	2
W20-20FF90S	1 1/4	1 11/16 - 12	86.0	3.39	143.0	5.63	63.0	2.48	50	2
W24-24FF90S	1 1/2	2 - 12	102.0	4.02	167.0	6.57	73.0	2.87	60	2 3/8

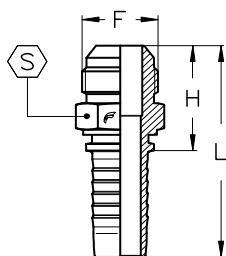


## FF90L ORFS Female Swivel - 90° Elbow Long Drop

Part Number		F	H		L		K			
			mm	in	mm	in	mm	in	mm	in
W04-04FF90L	1/4	9/16 - 18	29.0	1.14	57.0	2.24	46	1.81	17	1 1/16
W04-06FF90L	1/4	1 1/16 - 16	27.0	1.06	55.0	2.16	54	2.12	22	7/8
W06-06FF90L	3/8	1 1/16 - 16	34.0	1.33	64.5	2.53	54	2.12	22	7/8
W06-08FF90L	3/8	1 3/16 - 16	34.0	1.33	64.5	2.53	64	2.51	24	1
W08-08FF90L	1/2	1 3/16 - 16	39.0	1.53	72.0	2.83	64	2.51	24	1
W08-10FF90L	1/2	1 - 14	39.0	1.53	72.0	2.83	70	2.75	30	1 3/16
W10-10FF90L	5/8	1 - 14	45.0	1.77	81.0	3.18	70	2.75	30	1 3/16
W12-12FF90L	3/4	1 3/16 - 12	54.0	2.12	95.0	3.74	96	3.77	36	1 7/16
W16-16FF90L	1	1 7/16 - 12	71.0	2.79	122.0	4.80	114	4.48	41	1 5/8
W20-20FF90L	1 1/4	1 11/16 - 12	83.3	3.28	141.0	5.55	130	5.12	50	2

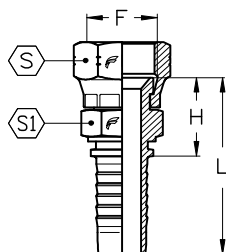


## MA SAE 45° Male



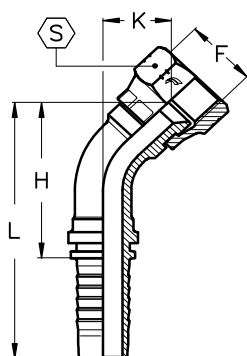
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W05-06MA	5/16	5/8 - 18	28.2	1.11	56.2	2.21	16	5/8
W06-06MA	3/8	5/8 - 18	28.2	1.11	58.7	2.21	16	5/8
W12-12MA	3/4	1 1/16 - 14	43.4	1.71	83.9	3.30	27	1 1/16

## FA SAE 45° Female Swivel



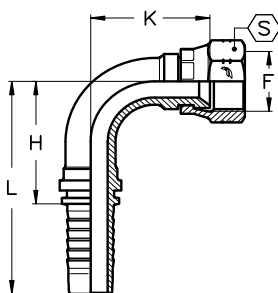
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
W04-06FA	1/4	5/8 - 18	23.0	0.90	51.0	2.02	22	7/8	17	1 1/16
W05-06FA	5/16	5/8 - 18	23.5	0.92	51.5	2.02	22	7/8	16	5/8
W06-06FA	3/8	5/8 - 18	23.5	0.92	54.0	2.12	22	7/8	16	5/8
W10-12FA	5/8	1 1/16 - 14	31.8	1.25	78.0	3.07	32	1 1/4	25	1
W12-12FA	3/4	1 1/16 - 14	31.8	1.25	72.3	3.27	32	1 1/4	27	1

## FA45 SAE 45° Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W05-06FA45	5/16	5/8 - 18	38.0	1.50	66.0	2.60	16.0	0.63	22	7/8
W06-06FA45	3/8	5/8 - 18	39.0	1.53	69.5	2.74	16.0	0.63	22	7/8
W12-12FA45	3/4	1 1/16 - 14	62.0	2.44	103	4.05	25.0	0.98	32	1 1/4



## FA90 SAE 45° Female Swivel - 90° Elbow

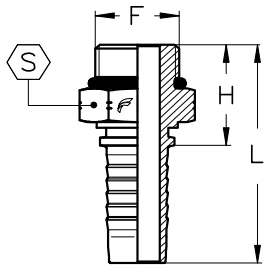


Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W05-06FA90	5/16	5/8 - 18	28.0	1.10	56.0	2.20	29.0	1.14	22	7/8
W06-06FA90	3/8	5/8 - 18	31.0	1.22	61.0	2.40	31.0	1.22	22	7/8
W12-12FA90	3/4	1 1/16 - 14	55.0	2.16	95.0	3.74	51.0	2.01	32	1 1/4



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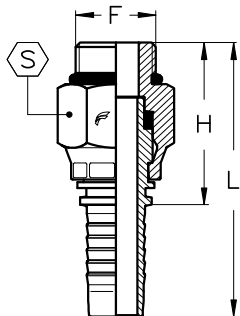
## MOB O-Ring Boss Male

Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-04MOB	1/4	7/16 - 20	21.7	0.85	49.7	1.96	14	9/16
W04-05MOB	1/4	1/2 - 20	22.2	0.87	50.2	1.98	16	5/8
W04-06MOB	1/4	9/16 - 18	23.5	0.92	51.5	2.03	17	11/16
W04-08MOB	1/4	3/4 - 16	26.0	1.02	54.0	2.12	22	7/8
W06-06MOB	3/8	9/16 - 18	23.5	0.92	54.0	2.12	17	11/16
W06-08MOB	3/8	3/4 - 16	26.2	1.03	56.7	2.23	22	7/8
W06-10MOB	3/8	7/8 - 14	28.0	1.10	58.5	2.30	25	1
W08-08MOB	1/2	3/4 - 16	27.2	1.07	60.2	2.37	22	7/8
W08-10MOB	1/2	7/8 - 14	29.7	1.17	62.7	2.47	25	1
W08-12MOB	1/2	1 1/16 - 12	33.6	1.32	66.6	2.62	32	1 1/4
W10-10MOB	5/8	7/8 - 14	29.9	1.18	65.7	2.59	25	1
W10-12MOB	5/8	1 1/16 - 12	33.8	1.33	69.6	2.74	32	1 1/4
W12-12MOB	3/4	1 1/16 - 12	34.6	1.36	75.1	2.96	32	1 1/4
W12-16MOB	3/4	1 5/16 - 12	36.1	1.42	76.6	3.01	38	1 1/2
W16-16MOB	1	1 5/16 - 12	37.6	1.48	88.6	3.49	38	1 1/2



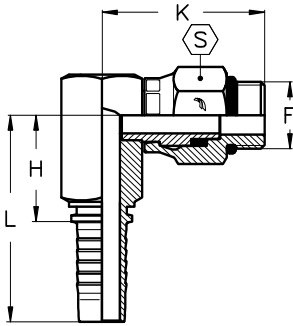
## MOBX O-Ring Boss Male Swivel


Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-04MOBX	1/4	7/16 - 20	37.0	1.46	65.0	2.56	17	11/16
W04-06MOBX	1/4	9/16 - 18	42.0	1.65	70.2	2.76	19	3/4
W06-06MOBX	3/8	9/16 - 18	42.0	1.65	73.0	2.87	19	3/4
W06-08MOBX	3/8	3/4 - 16	47.0	1.85	80.0	3.15	22	7/8
W08-08MOBX	1/2	3/4 - 16	49.0	1.93	82.0	3.23	22	7/8
W08-10MOBX	1/2	7/8 - 14	50.0	1.97	83.0	3.27	26	1 1/16
W10-10MOBX	5/8	7/8 - 14	50.2	1.97	86.0	3.36	26	1 1/16
W12-12MOBX	3/4	1 1/16 - 12	59.0	2.32	99.0	3.90	32	1 1/4



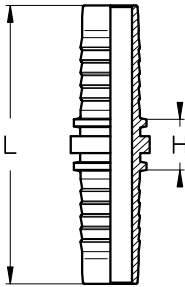
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## MOBX90B O-Ring Boss Male Swivel - 90° Block Elbow



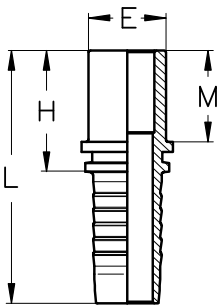
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-06MOBX90B	1/4	9/16 - 18	32.0	1.26	60.0	2.36	47.4	1.87	19	3/4
W06-06MOBX90B	3/8	9/16 - 18	32.0	1.26	63.0	2.36	48.0	1.88	19	3/4
W06-08MOBX90B	3/8	3/4 - 16	33.0	1.36	63.0	2.48	50.0	1.97	22	7/8
W08-08MOBX90B	1/2	3/4 - 16	33.0	1.30	66.0	2.60	51.0	2.00	22	7/8
W08-10MOBX90B	1/2	7/8 - 14	33.0	1.30	66.0	2.60	55.0	2.16	26	1 1/16
W12-12MOBX90B	3/4	1 1/16 - 12	43.0	1.69	84.0	3.31	65.0	2.56	32	1 1/4


## HM Hose Mender



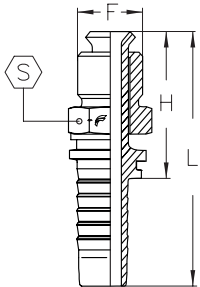
Part Number		H		L	
	in	mm	in	mm	in
W04-04HM	1/4	13.0	0.51	70.0	2.75
W06-06HM	3/8	13.0	0.51	74.0	2.91
W08-08HM	1/2	15.0	0.59	81.0	3.18
W12-12HM	3/4	18.0	0.71	99.0	3.89
W16-16HM	1	21.0	0.83	123.0	4.84


## SP Imperial Standpipe



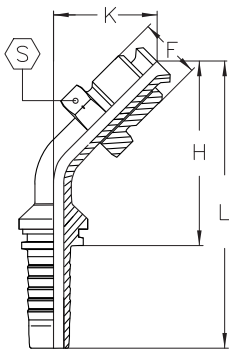
Part Number		E		H		M		L	
	in	mm	in	mm	in	mm	in	mm	in
W04-04SP	1/4	6.3	1/4	30.5	1.20	24.0	0.94	58.5	2.30
W06-06SP	3/8	9.5	3/8	32.0	1.26	26.0	1.02	62.5	2.46
W08-08SP	1/2	12.7	1/2	32.5	1.28	26.0	1.02	65.5	2.58
W12-12SP	3/4	19.0	3/4	44.5	1.75	36.0	1.42	85.0	3.35
W16-16SP	1	25.4	1	49.5	1.95	40.0	1.57	100.0	3.94



## MIX SAE Inverted Flare Male Swivel



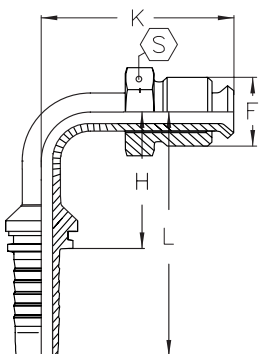
Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-03MIX	1/4	3/8 - 24	38.3	1.51	66.8	2.63	9.5	3/8
W04-04MIX	1/4	7/16 - 24	39.1	1.54	67.8	2.67	11.1	7/16
W04-05MIX	1/4	1/2 - 20	42.2	1.66	70.6	2.78	12.0	1/2
W06-04MIX	3/8	7/16 - 24	39.9	1.57	70.6	2.78	11.1	7/16
W06-05MIX	3/8	1/2 - 20	42.4	1.67	73.1	2.88	12.0	1/2
W06-06MIX	3/8	5/8 - 18	43.7	1.72	74.4	2.93	16.0	5/8
W06-08MIX	3/8	3/4 - 18	48.5	1.91	79.2	3.12	19.0	3/4
W08-08MIX	1/2	3/4 - 18	49.0	1.93	82.3	3.24	19.0	3/4


## MIX45 SAE Inverted Flare Male Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-03MIX45	1/4	3/8 - 24	41.6	1.64	70.1	2.76	13.5	0.53	9.5	3/8
W04-04MIX45	1/4	7/16 - 24	51.8	2.04	80.3	3.16	14.5	0.57	11.1	7/16
W04-05MIX45	1/4	1/2 - 20	52.1	2.05	81.5	3.21	16.5	0.65	12.0	1/2
W06-05MIX45	3/8	1/2 - 20	50.0	1.97	80.5	3.17	16.5	0.65	12.0	1/2
W06-06MIX45	3/8	5/8 - 18	52.6	2.07	83.0	3.27	18.0	0.71	16.0	5/8
W08-08MIX45	1/2	3/4 - 18	64.8	2.55	97.8	3.85	21.6	0.85	19.0	3/4

## MIX90 SAE Inverted Flare Male Swivel - 90° Elbow

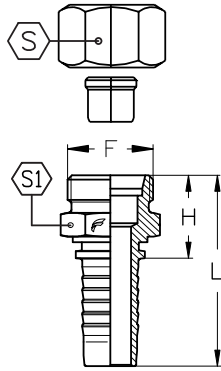


Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-03MIX90	1/4	3/8 - 24	32.5	1.28	61.0	2.40	24.6	0.97	9.5	3/8
W04-04MIX90	1/4	7/16 - 24	40.4	1.59	68.8	2.71	27.9	1.10	11.1	7/16
W04-05MIX90	1/4	1/4 - 20	42.7	1.68	71.1	2.80	32.5	1.28	12.0	1/2
W06-05MIX90	3/8	1/2 - 20	43.4	1.71	73.9	2.91	32.5	1.28	12.0	1/2
W06-06MIX90	3/8	5/8 - 18	48.3	1.90	78.7	3.10	36.8	1.45	16.0	5/8
W06-08MIX90	3/8	3/4 - 18	55.6	2.19	86.1	3.39	45.2	1.78	19.0	3/4
W08-08MIX90	1/2	3/4 - 18	56.1	2.21	89.1	3.51	45.2	1.78	19.0	3/4

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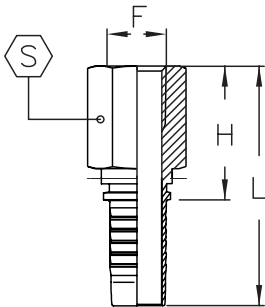


## MRNS SAE Flareless Compression



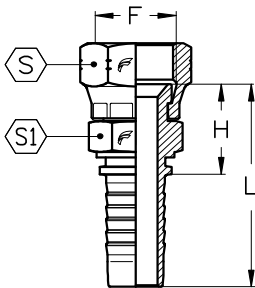
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
W04-04MRNS	1/4	7/16 - 20	24.0	0.94	51.0	2.01	14	9/16	14	9/16
W04-05MRNS	1/4	1/2 - 20	25.3	1.00	53.0	2.09	16	5/8	17	11/16
W06-05MRNS	3/8	1/2 - 20	26.0	1.02	55.6	2.19	16	5/8	17	11/16
W06-06MRNS	3/8	9/16 - 18	26.8	1.05	55.6	2.19	17	11/16	17	11/16
W06-08MRNS	3/8	3/4 - 16	30.0	1.18	58.5	2.30	22	7/8	19	3/4
W08-08MRNS	1/2	3/4 - 16	30.4	1.20	61.3	2.41	22	7/8	19	3/4
W08-10MRNS	1/2	7/8 - 14	32.3	1.27	63.4	2.50	25	1	24	1
W12-12MRNS	3/4	1 1/16 - 12	35.7	1.40	74.7	2.94	32	1 1/4	27	1 1/16
W16-16MRNS	1	1 5/16 - 12	36.7	1.44	87.7	3.45	38	1 1/2	36	1 1/16

## FG Female Grease



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
W04-08FG	1/4	1/2 - 27	23.5	0.92	44.0	1.73	19	3/4
W06-08FG	3/8	1/2 - 27	23.5	0.92	48.0	1.89	19	3/4

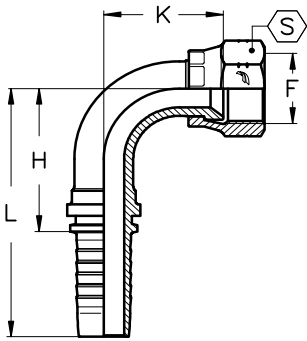
## FJIS JIS Female Swivel (Toyota)



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	
W04-04FJIS	1/4	1/4 - 19	24.0	0.94	52.0	2.05	19	3/4	14	9/16
W06-06FJIS	3/8	3/8 - 19	26.0	1.02	57.0	2.24	22	7/8	17	11/16
W08-08FJIS	1/2	1/2 - 14	30.0	1.18	63.0	2.48	27	1 1/16	22	7/8
W10-10FJIS	5/8	5/8 - 14	35.0	1.38	71.0	2.80	30	1 3/16	30	1 3/16
W12-12FJIS	3/4	3/4 - 14	36.0	1.42	76.0	2.99	32	1 1/4	27	1 1/16
W16-16FJIS	1	1 - 11	40.0	1.57	91.0	3.58	41	1 5/8	32	1 1/4
W20-20FJIS	1 1/4	1 1/4 - 11	46.0	1.81	104.0	4.69	50	2	46	1 13/16
W24-24FJIS	1 1/2	1 1/2 - 11	47.0	1.85	123.0	4.84	70	2 3/4	50	2

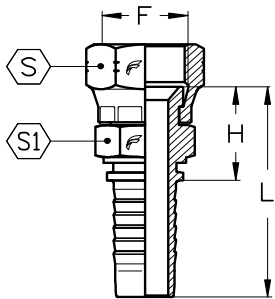
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## FJIS90 JIS Female Swivel (Toyota) - 90° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04FJIS90	1/4	1/4 - 19	27.0	1.06	53.0	2.08	27	1.06	19	3/4
W06-06FJIS90	3/8	3/8 - 19	30.0	1.18	63.0	2.48	29	1.14	22	7/8
W08-08FJIS90	1/2	1/2 - 14	41.0	1.61	70.0	2.75	38	1.49	27	1 1/16
W12-12FJIS90	3/4	3/4 - 14	65.0	2.56	109.0	4.29	57	2.24	32	1 1/4
W16-16FJIS90	1	1 - 11	71.0	2.80	118	4.65	66	2.60	41	1 5/8

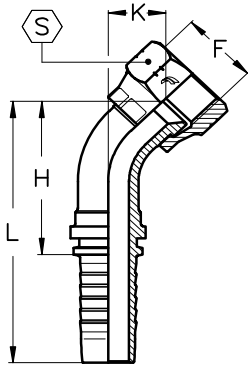
## FK Komatsu Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	mm	in	mm	in	
W04-12FK	1/4	M12 x 1.5								
W04-14FK	1/4	M14 x 1.5	24.0	0.94	52.5	2.06	19	3/4	19	3/4
W04-18FK	1/4	M18 x 1.5	24.0	0.94	52.5	2.06	24	1	19	3/4
W06-14FK	3/8	M14 x 1.5	24.0	0.94	54.5	2.14	19	3/4	19	3/4
W06-16FK	3/8	M16 x 1.5	22.2	0.87	52.7	2.07	22	7/8	19	3/4
W06-18FK	3/8	M18 x 1.5	24.3	0.95	54.8	2.15	24	1	19	3/4
W06-20FK	3/8	M20 x 1.5	29.0	1.14	59.0	2.32	25.4	1	22	7/8
W06-22FK	3/8	M22 x 1.5	29.0	1.14	59.0	2.32	27	1 1/16	22	7/8
W08-18FK	1/2	M18 x 1.5	26.0	1.02	59.0	2.32	24	1	22	7/8
W08-22FK	1/2	M22 x 1.5	26.5	1.04	59.5	2.34	27	1 1/16	27	1 1/16
W08-24FK	1/2	M24 x 1.5	29.9	1.17	62.9	2.47	32	1 1/4	32	1 1/4
W10-24FK	5/8	M24 x 1.5	29.9	1.17	65.9	2.59	32	1 1/4	32	1 1/4
W12-24FK	3/4	M24 x 1.5	31.0	1.22	71.5	2.81	32	1 1/4	32	1 1/4
W12-30FK	3/4	M30 x 1.5	33.0	1.29	74.0	2.91	36	1 1/16	36	1 7/16
W12-33FK	3/4	M33 x 1.5	34.5	1.35	76.5	3.01	41	1 5/8	36	1 7/16
W16-33FK	1	M33 x 1.5	34.5	1.35	89.5	3.52	41	1 5/8	36	1 7/16
W16-36FK	1	M36 x 1.5	39.0	1.53	90.5	3.56	46	1 13/16	41	1 5/8
W20-36FK	1 1/4	M36 x 1.5	40.0	1.57	97.5	3.84	46	1 13/16	41	1 5/8
W24-42FK	1 1/2	M42 x 1.5	42.5	1.67	107.0	4.21	50	2	46	1 3/8

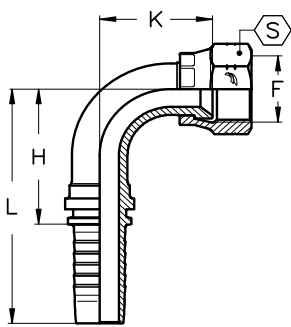
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## FK45 Komatsu Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-14FK45	1/4	M14 x 1.5	34.0	1.33	62.0	2.44	16.0	0.62	19	3/4
W04-18FK45	1/4	M18 x 1.5	33.0	1.29	61.0	2.40	16.0	0.62	24	1
W06-18FK45	3/8	M18 x 1.5	41.0	1.61	71.5	2.81	19.0	0.74	24	1
W08-22FK45	1/2	M22 x 1.5	53.5	2.10	86.5	3.40	25.0	0.98	27	1 1/16
W10-24FK45	5/8	M24 x 1.5	54.0	2.12	89.8	3.53	26.0	1.02	32	1 1/4
W12-30FK45	3/4	M30 x 1.5	59.5	2.34	100.0	3.93	28.0	1.10	36	1 7/16

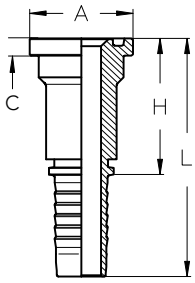
## FK90 Komatsu Female Swivel - 90° Elbow




Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-14FK90	1/4	M14 x 1.5	25.0	0.98	53.0	2.08	28.0	1.10	19	3/4
W04-16FK90	1/4	M16 x 1.5	29.0	1.14	54.0	2.12	29.0	1.14	19	3/4
W04-18FK90	1/4	M18 x 1.5	24.0	0.94	52.0	2.04	30.0	1.18	24	1
W06-18FK90	3/8	M18 x 1.5	31.0	1.22	61.5	2.42	37.0	1.45	24	1
W08-22FK90	1/2	M22 x 1.5	41.0	1.61	74.0	2.91	48.0	1.88	27	1 1/16
W10-24FK90	5/8	M24 x 1.5	42.0	1.65	77.8	3.06	50.0	1.96	32	1 1/4
W12-30FK90	3/4	M30 x 1.5	48.5	1.90	89.0	3.50	57.0	2.24	36	1 7/16

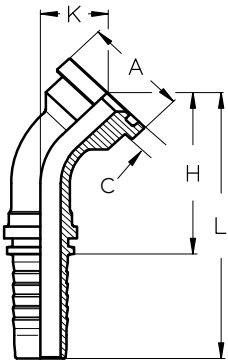
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## FLK Komatsu Flange



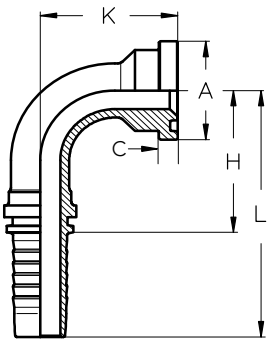
Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
W10-10FLK	5/8	6.0	34.2	1.34	49.3	1.94	85.3	3.36	


## FLK45 Komatsu Flange - 45° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
W10-10FLK45	5/8	6.0	34.2	1.34	70.0	2.75	110	4.33	30.0	1.18	

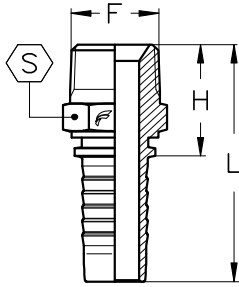
## FLK90 Komatsu Flange - 90° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
W10-10FLK90-044	5/8	6.0	34.2	1.34	49.0	1.93	85.0	3.35	44.0	1.93	

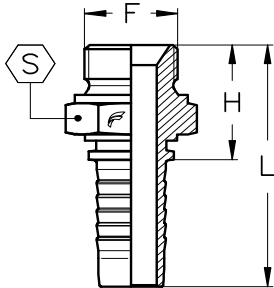
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## MBSPT BSPT Male



Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W04-02MBSPT	1/4	1/8 - 28	21.0	0.83	49.0	1.93	12	1/2
W04-04MBSPT	1/4	1/4 - 19	25.0	0.98	53.0	2.09	15	5/8
W04-06MBSPT	1/4	3/8 - 19	26.0	1.02	54.0	2.12	19	3/4
W06-04MBSPT	3/8	1/4 - 19	26.0	1.02	56.0	2.20	15	5/8
W06-06MBSPT	3/8	3/8 - 19	27.0	1.06	57.0	2.24	19	3/4
W06-08MBSPT	3/8	1/2 - 14	32.0	1.26	63.0	2.48	22	7/8
W08-08MBSPT	1/2	1/2 - 14	33.0	1.30	66.0	2.60	22	7/8
W12-12MBSPT	3/4	3/4 - 14	36.0	1.41	77.0	3.03	27	1 1/16
W16-16MBSPT	1	1 - 11	43.0	1.69	94.0	3.70	36	1 7/16



## MBSPP MBSPP Male

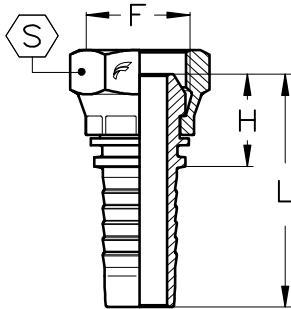


Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W03-02MBSPP	3/16	1/8 - 28	20.0	0.79	45.0	1.77	14	9/16
W03-04MBSPP	3/16	1/4 - 19	24.0	0.94	49.0	1.93	19	3/4
W04-02MBSPP	1/4	1/8 - 28	20.0	0.79	48.0	1.89	14	9/16
W04-04MBSPP	1/4	1/4 - 19	25.0	0.98	53.0	2.09	19	3/4
W04-06MBSPP	1/4	3/8 - 19	27.0	1.06	55.0	2.16	22	7/8
W04-08MBSPP	1/4	1/4 - 19	32.0	1.26	60.0	2.36	27	1 1/16
W05-06MBSPP	5/16	3/8 - 19	27.0	1.06	55.0	2.16	22	7/8
W06-04MBSPP	3/8	1/4 - 19	25.0	0.98	55.0	2.16	19	3/4
W06-06MBSPP	3/8	3/8 - 19	27.0	1.06	58.0	2.28	22	7/8
W06-08MBSPP	3/8	1/2 - 14	32.0	1.26	62.0	2.44	27	1 1/16
W08-06MBSPP	1/2	3/8 - 19	28.0	1.10	61.0	2.40	22	7/8
W08-08MBSPP	1/2	1/2 - 14	33.0	1.30	66.0	2.60	27	1 1/16
W08-10MBSPP	1/2	5/8 - 14	35.0	1.38	68.0	2.68	30	1 3/16
W08-12MBSPP	1/2	3/4 - 14	36.0	1.42	69.0	2.72	32	1 1/4
W10-08MBSPP	5/8	1/2 - 14	33.0	1.30	69.0	2.72	27	1 1/16
W10-10MBSPP	5/8	5/8 - 14	35.0	1.38	71.0	2.79	30	1 3/16
W10-12MBSPP	5/8	3/4 - 14	36.0	1.42	72.0	2.83	32	1 1/4
W12-12MBSPP	3/4	3/4 - 14	37.0	1.46	77.0	3.03	32	1 1/4
W12-16MBSPP	3/4	1 - 11	42.0	1.65	82.0	3.23	41	1 5/8
W16-16MBSPP	1	1 - 11	43.0	1.69	94.0	3.70	41	1 5/8
W16-20MBSPP	1	1 1/4 - 11	46.0	1.81	97.0	3.82	50	2
W20-20MBSPP	1 1/4	1 1/4 - 11	47.0	1.85	105.0	4.13	50	2
W24-24MBSPP	1 1/2	1 1/2 - 11	50.0	1.97	115.0	4.52	55	2 3/16
W32-32MBSPP	2	2 - 11	56.0	2.20	126.0	4.96	70	2 3/4

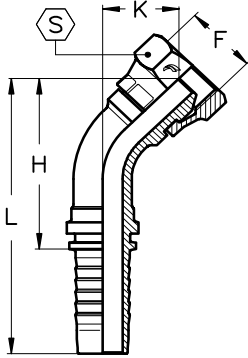
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## FBSPB BSPP Female Swivel

Part Number		F	H		L			
	in		mm	in	mm	in	mm	in
W03-02FBSPB	$\frac{3}{16}$	$\frac{1}{8}$ - 28	16.0	0.63	41.0	1.61	14	$\frac{9}{16}$
W03-04FBSPB	$\frac{3}{16}$	$\frac{1}{4}$ - 19	19.0	0.75	44.0	1.73	19	$\frac{3}{4}$
W04-02FBSPB	$\frac{1}{4}$	$\frac{1}{8}$ - 28	17.0	0.67	45.0	1.77	14	$\frac{9}{16}$
W04-04FBSPB	$\frac{1}{4}$	$\frac{1}{4}$ - 19	19.0	0.75	47.0	1.85	19	$\frac{3}{4}$
W04-06FBSPB	$\frac{1}{4}$	$\frac{3}{8}$ - 19	22.0	0.87	50.0	1.97	22	$\frac{7}{8}$
W05-06FBSPB	$\frac{5}{16}$	$\frac{3}{8}$ - 19	22.0	0.87	50.0	1.97	22	$\frac{7}{8}$
W06-04FBSPB	$\frac{3}{8}$	$\frac{1}{4}$ - 19	19.0	0.75	49.0	1.93	19	$\frac{3}{4}$
W06-06FBSPB	$\frac{3}{8}$	$\frac{3}{8}$ - 19	21.0	0.83	51.0	2.01	22	$\frac{7}{8}$
W06-08FBSPB	$\frac{3}{8}$	$\frac{1}{2}$ - 14	23.0	0.90	54.0	2.12	27	$1\frac{1}{16}$
W08-06FBSPB	$\frac{1}{2}$	$\frac{3}{8}$ - 19	22.0	0.87	56.0	2.20	22	$\frac{7}{8}$
W08-08FBSPB	$\frac{1}{2}$	$\frac{1}{2}$ - 14	23.0	0.90	56.0	2.20	27	$1\frac{1}{16}$
W08-10FBSPB	$\frac{1}{2}$	$\frac{5}{8}$ - 14	24.0	0.94	57.0	2.24	30	$1\frac{3}{16}$
W08-12FBSPB	$\frac{1}{2}$	$\frac{3}{4}$ - 14	27.0	1.06	60.0	2.36	32	$1\frac{1}{4}$
W10-08FBSPB	$\frac{5}{8}$	$\frac{1}{2}$ - 14	23.0	0.91	59.0	2.32	27	$1\frac{1}{16}$
W10-10FBSPB	$\frac{5}{8}$	$\frac{5}{8}$ - 14	23.0	0.90	59.0	2.32	30	$1\frac{3}{16}$
W10-12FBSPB	$\frac{5}{8}$	$\frac{3}{4}$ - 14	27.0	1.06	63.0	2.48	32	$1\frac{1}{4}$
W12-12FBSPB	$\frac{3}{4}$	$\frac{3}{4}$ - 14	27.0	1.06	67.0	2.64	32	$1\frac{1}{4}$
W12-16FBSPB	$\frac{3}{4}$	1 - 11	30.0	1.18	70.0	2.75	41	$1\frac{5}{8}$
W16-12FBSPB	1	$\frac{3}{4}$ - 14	28.0	1.10	79.0	3.11	32	$1\frac{1}{4}$
W16-16FBSPB	1	1 - 11	30.0	1.18	81.0	3.19	41	$1\frac{5}{8}$
W16-20FBSPB	1	$1\frac{1}{4}$ - 11	35.0	1.38	86.0	3.38	50	2
W20-20FBSPB	$1\frac{1}{4}$	$1\frac{1}{4}$ - 11	34.0	1.34	92.0	3.62	50	2
W24-24FBSPB	$1\frac{1}{2}$	$1\frac{1}{2}$ - 11	34.0	1.34	99.0	3.90	55	$2\frac{3}{16}$
W32-32FBSPB	2	2 - 11	37.0	1.46	107.0	4.21	70	$2\frac{3}{4}$
W40-40FBSPB	$2\frac{1}{2}$	$2\frac{1}{2}$ - 11	43.0	1.69	122.0	4.80	85	$3\frac{3}{8}$
W48-48FBSPB	$3\frac{1}{2}$	3 - 11	41.0	1.61	130.0	5.12	100	$3\frac{15}{16}$

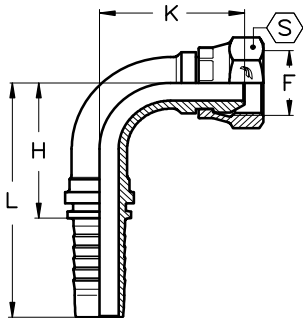




## FBSPP45 BSPP Female Swivel - 45° Elbow



Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W03-02FBSPP45	3/16	1/8 - 28	33.0	1.30	58.0	2.28	14.0	0.55	14	9/16
W04-02FBSPP45	1/4	1/8 - 28	36.0	1.42	64.0	2.52	16.0	0.63	14	9/16
W04-04FBSPP45	1/4	1/4 - 19	37.0	1.46	65.0	2.56	16.0	0.63	19	3/4
W04-06FBSPP45	1/4	3/8 - 19	40.0	1.57	68.0	2.68	19.0	0.75	22	7/8
W06-06FBSPP45	3/8	3/8 - 19	42.0	1.65	73.0	2.87	19.0	0.75	22	7/8
W06-08FBSPP45	3/8	1/2 - 14	44.0	1.73	75.0	2.95	21.0	0.83	27	1 1/16
W08-08FBSPP45	1/2	1/2 - 14	49.0	1.93	82.0	3.23	22.0	0.87	27	1 1/16
W08-10FBSPP45	1/2	5/8 - 14	49.0	1.93	82.0	3.23	22.0	0.87	30	1 3/16
W10-10FBSPP45	5/8	5/8 - 14	54.0	2.12	90.0	3.54	24.0	0.94	30	1 3/16
W10-12FBSPP45	5/8	3/4 - 14	57.0	2.24	93.0	3.66	26.0	1.02	32	1 1/4
W12-12FBSPP45	3/4	3/4 - 14	66.0	2.60	106.0	4.17	28.0	1.10	32	1 1/4
W16-16FBSPP45	1	1 - 11	84.0	3.31	135.0	5.31	36.0	1.42	41	1 5/8
W20-20FBSPP45	1 1/4	1 1/4 - 11	100.0	3.94	157.0	6.18	43.0	1.69	50	2
W24-24FBSPP45	1 1/2	1 1/2 - 11	116.0	4.57	180.0	7.09	49.0	1.93	55	2 3/16
W32-32FBSPP45	2	2 - 11	157.0	6.18	227.0	8.94	69.0	2.72	70	2 3/4

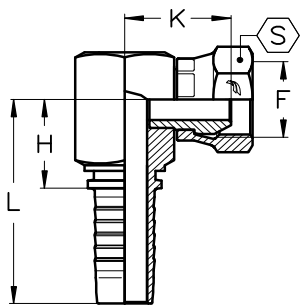
## FBSPP90 BSPP Female Swivel - 90° Elbow




Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W03-02FBSPP90	3/16	1/8 - 28	21.0	0.83	46.0	1.81	23.0	0.91	14	9/16
W04-02FBSPP90	1/4	1/8 - 28	26.0	1.02	54	2.12	28.0	1.10	14	9/16
W04-04FBSPP90	1/4	1/4 - 19	26.0	1.02	54	2.12	28.0	1.10	19	3/4
W04-06FBSPP90	1/4	3/8 - 19	26.0	1.02	54	2.12	32.0	1.26	22	7/8
W06-06FBSPP90	3/8	3/8 - 19	31.0	1.22	61	2.40	35.0	1.38	22	7/8
W06-08FBSPP90	3/8	1/2 - 14	31.0	1.22	61	2.40	38.0	1.50	27	1 1/16
W08-08FBSPP90	1/2	1/2 - 14	37.0	1.46	70	2.75	42.0	1.65	27	1 1/16
W08-10FBSPP90	1/2	5/8 - 14	37.0	1.46	70	2.75	43.0	1.69	30	1 3/16
W10-10FBSPP90	5/8	5/8 - 14	45.0	1.77	80	3.15	46.0	1.81	30	1 3/16
W10-12FBSPP90	5/8	3/4 - 14	45.0	1.77	80	3.15	50.0	1.97	32	1 1/4
W12-12FBSPP90	3/4	3/4 - 14	54.0	2.12	95	3.74	56.0	2.20	32	1 1/4
W16-12FBSPP90	1	3/4 - 14	70.0	2.76	121	4.76	75.0	2.95	32	1 1/4
W16-16FBSPP90	1	1 - 11	70.0	2.76	121	4.76	72.0	2.83	41	1 5/8
W20-20FBSPP90	1 1/4	1 1/4 - 11	84.0	3.31	142	5.59	87.0	3.43	50	2
W24-24FBSPP90	1 1/2	1 1/2 - 11	100.0	3.94	165	6.50	100.0	3.94	55	2 3/16
W32-32FBSPP90	2	2 - 11	134.0	5.28	204	8.03	141.0	5.55	70	2 3/4

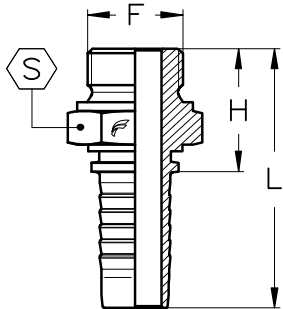
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FBSP90B BSP Female Swivel - 90° Block Elbow



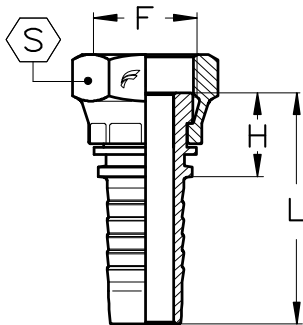
Part Number		F	H		L		K			
	in		mm	in	mm	in	mm	in	mm	in
W04-04FBSP90B	1/4	1/4 - 19	18.0	0.71	46.0	1.81	23.0	0.90	19	3/4
W06-06FBSP90B	3/8	3/8 - 19	21.0	0.83	52.0	2.05	26.0	1.02	22	7/8
W08-08FBSP90B	1/2	1/2 - 14	24.0	0.94	57.0	2.24	28.0	1.10	27	1 1/16
W12-12FBSP90B	3/4	3/4 - 14	31.0	1.22	72.0	2.83	35.0	1.38	32	1 1/4
W16-16FBSP90B	1	1 - 11	38.0	1.50	89.0	3.50	41.0	1.61	41	1 5/8



## MBSPPF BSP Male Flat Face



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
W04-04MBSPPF	1/4	1/4 - 19	27.0	1.06	55.0	2.16	22	7/8
W06-06MBSPPF	3/8	3/8 - 19	27.0	1.06	58.0	2.28	22	7/8
W06-08MBSPPF	3/8	1/2 - 14	32.0	1.26	62.0	2.44	27	1 1/16
W08-08MBSPPF	1/2	1/2 - 14	33.0	1.30	66.0	2.60	27	1 1/16
W12-12MBSPPF	3/4	3/4 - 14	37.0	1.46	77.0	3.03	32	1 1/4
W12-16MBSPPF	3/4	1 - 11	42.0	1.65	84.0	3.23	41	1 5/8
W16-16MBSPPF	1	1 - 11	43.0	1.69	94.0	3.70	41	1 5/8

## FBSPFF BSP Female Flat Face Swivel

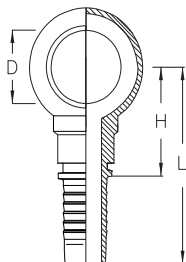



Part Number		F	H		L			
	in		mm	in	mm	in	mm	
W04-04FBSPFF	1/4	1/4 - 19	15	0.59	43	1.69	19	3/4
W04-06FBSPFF	1/4	3/8 - 19	18	0.71	46	1.81	22	7/8
W06-06FBSPFF	3/8	3/8 - 19	17	0.67	47	1.85	22	7/8
W06-08FBSPFF	3/8	1/2 - 14	19	0.75	49	1.93	27	1 1/16
W08-08FBSPFF	1/2	1/2 - 14	19	0.75	52	2.05	27	1 1/16
W08-12FBSPFF	1/2	3/4 - 14	23	0.90	56	2.20	32	1 1/4
W10-10FBSPFF	5/8	5/8 - 14	20	0.79	56	2.20	30	1 3/16
W12-12FBSPFF	3/4	3/4 - 14	22	0.87	63	2.48	32	1 1/4

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

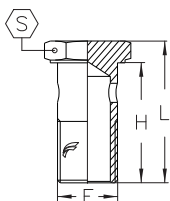


## BJBSP BSP Banjo



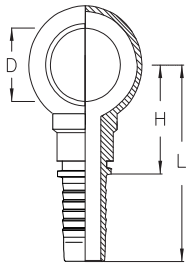
Part Number		Bolt Size	D		H		L		T	
	in		mm	in	mm	in	mm	in	mm	in
W03-02BJBSP	3/16	1/8	10.2	0.40	20.0	0.79	45.0	1.72	10.0	0.39
W04-02BJBSP	1/4	1/8	10.2	0.40	23.0	0.90	51.0	2.01	10.0	0.39
W04-04BJBSP	1/4	1/4	13.3	0.52	23.0	0.90	51.0	2.01	14.0	0.55
W04-06BJBSP	1/4	3/8	16.8	0.66	26.5	1.04	54.5	2.14	17.5	0.69
W06-04BJBSP	3/8	1/4	13.3	0.52	24.0	0.94	54.5	2.14	14.0	0.55
W06-06BJBSP	3/8	3/8	16.8	0.66	24.0	0.94	54.5	2.14	17.5	0.69
W06-08BJBSP	3/8	1/2	21.0	0.83	32.0	1.26	62.5	2.46	23.0	0.90
W08-06BJBSP	1/2	3/8	16.8	0.66	26.5	1.04	59.5	2.34	17.5	0.69
W08-08BJBSP	1/2	1/2	21.0	0.83	28.5	1.12	61.5	2.42	23.0	0.90
W12-12BJBSP	3/4	3/4	26.5	1.04	37.5	1.48	78.0	3.07	29.5	1.16
W16-16BJBSP	1	1	33.5	1.32	49.0	1.93	100.0	3.94	37.5	1.48


## BJBSPBT BSP Banjo Bolt



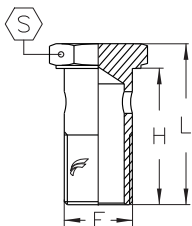
Part Number	F	H		L			
		mm	in	mm	in	mm	in
02BJBSPBT	1/8 - 28	26.0	1.02	21.5	0.85	14	9/16
04BJBSPBT	1/4 - 19	34.3	1.35	29.5	1.16	19	3/4
06BJBSPBT	3/8 - 19	40.5	1.59	34.0	1.34	22	7/8
08BJBSPBT	1/2 - 14	46.0	1.81	36.0	1.42	27	1 1/16
10BJBSPBT	5/8 - 14	55.0	2.16	45.5	1.79	30	1 3/16
12BJBSPBT	3/4 - 14	56.0	2.20	48.0	1.89	32	1 1/4
16BJBSPBT	1 - 11	69.0	2.72	59.0	2.32	41	1 5/8


## BJM Metric Banjo



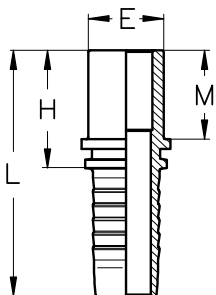
Part Number		Bolt Size	D		H		L		T	
	in		mm	in	mm	in	mm	in	mm	in
W03-10BJM	$\frac{3}{16}$	M10	10.2	0.40	20.0	0.79	45.0	1.77	10.0	$\frac{7}{16}$
W04-10BJM	$\frac{1}{4}$	M10	10.2	0.40	23.0	0.91	51.0	2.01	10.0	$\frac{7}{16}$
W04-12BJM	$\frac{1}{4}$	M12	12.1	0.48	23.0	0.90	51.0	2.01	12.0	$\frac{1}{2}$
W04-14BJM	$\frac{1}{4}$	M14	14.2	0.56	23.0	0.90	51.0	2.01	14.0	$\frac{9}{16}$
W06-12BJM	$\frac{3}{8}$	M12	12.1	0.48	20.2	0.79	49.8	1.96	12.0	$\frac{1}{2}$
W06-14BJM	$\frac{3}{8}$	M14	14.2	0.56	24.0	0.94	54.5	2.14	14.0	$\frac{9}{16}$
W06-16BJM	$\frac{3}{8}$	M16	16.2	0.64	24.0	0.94	54.5	2.14	17.5	$\frac{11}{16}$
W06-18BJM	$\frac{3}{8}$	M18	18.2	0.72	27.0	1.06	57.5	2.26	20.5	$\frac{13}{16}$
W08-18BJM	$\frac{1}{2}$	M18	18.2	0.72	28.1	1.11	61.1	2.40	20.5	$\frac{13}{16}$
W08-20BJM	$\frac{1}{2}$	M20	20.2	0.80	28.5	1.12	61.5	2.42	23.0	$\frac{7}{8}$
W08-22BJM	$\frac{1}{2}$	M22	22.2	0.87	28.5	1.12	61.5	2.42	22.5	$\frac{57}{64}$
W10-22BJM	$\frac{5}{8}$	M22	22.2	0.87	27.2	1.07	63.0	2.48	22.5	$\frac{57}{64}$
W12-26BJM	$\frac{3}{4}$	M26	26.5	1.04	41.5	1.63	78.0	3.07	29.5	$\frac{15}{32}$

## BJMBT Metric Banjo Bolt



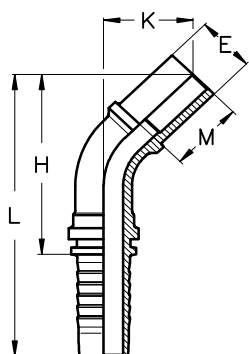
Part Number	F	H		L			
		mm	in	mm	in	mm	in
10BJMBT	M10 x 1.0	21.5	0.85	26.0	1.02	14	$\frac{9}{16}$
12BJMBT	M12 x 1.5	25.5	1.00	31.0	1.22	17	$\frac{11}{16}$
14BJMBT	M14 x 1.5	30.5	1.20	37.5	1.48	19	$\frac{3}{4}$
16BJMBT	M16 x 1.5	32.5	1.28	40.0	1.57	22	$\frac{7}{8}$
18BJMBT	M18 x 1.5	36.5	1.44	44.0	1.73	24	<b>1</b>
20BJMBT	M20 x 1.5	39.5	1.55	48.0	1.89	27	$\frac{11}{16}$
22BJMBT	M22 x 1.5	41.5	1.63	50.0	1.97	28	$\frac{11}{8}$
26BJMBT	M26 x 1.5	48.5	1.91	58.0	2.28	32	$\frac{11}{4}$

## SPML Metric Standpipe L/S



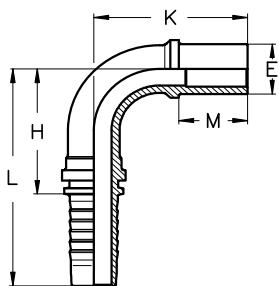
Part Number		E		H		M		L	
	in	mm	in	mm	in	mm	in	mm	in
W04-06SPML	1/4	6	0.24	27.5	1.08	21	0.83	55.0	2.16
W04-08SPML	1/4	8	0.31	29.5	1.16	23	0.90	58.0	2.28
W04-10SPML	1/4	10	0.39	31.5	1.24	25	0.98	60.0	2.36
W06-10SPML	3/8	10	0.39	28.5	1.12	22	0.87	59.0	2.32
W06-12SPML	3/8	12	0.48	31.5	1.24	25	0.98	62.0	2.44
W08-12SPML	1/2	12	0.48	32.5	1.28	25	0.98	65.5	2.58
W08-15SPML	1/2	15	0.59	31.5	1.24	24	0.94	64.5	2.54
W08-16SPML	1/2	16	0.63	36.5	1.44	29	1.14	69.5	2.74

## SPML45 Metric Standpipe L/S - 45° Elbow



Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
W04-06SPML45	1/4	6	0.24	48.0	1.89	21	0.83	77.0	3.03	24.0	0.94
W04-08SPML45	1/4	8	0.31	48.0	1.89	23	0.90	76.5	3.01	24.0	0.94
W04-10SPML45	1/4	10	0.39	49.5	1.95	25	0.98	78.0	3.07	25.5	1.00
W06-10SPML45	3/8	10	0.39	62.0	2.44	22	0.87	92.5	3.64	27.5	1.08
W06-12SPML45	3/8	12	0.48	62.5	2.46	25	0.98	93.0	3.66	28.5	1.12
W08-15SPML45	1/2	15	0.59	70.5	2.77	24	0.94	103.5	4.07	31.0	1.22
W08-16SPML45	1/2	16	0.63	74.0	2.91	29	1.14	107.0	4.21	34.5	1.36



## SPML90 Metric Standpipe L/S - 90° Elbow

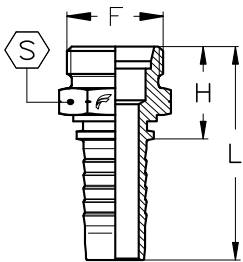


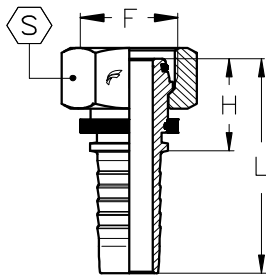
Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
W04-06SPML90	1/4	6	0.24	24	0.94	21	0.83	52	2.05	39.0	1.53
W04-08SPML90	1/4	8	0.31	24	0.94	23	0.90	52	2.05	39.0	1.53
W04-10SPML90	1/4	10	0.39	24	0.94	25	0.98	52	2.05	41.0	1.61
W06-10SPML90	3/8	10	0.39	34	1.34	22	0.87	64	2.52	48.0	1.89
W06-12SPML90	3/8	12	0.48	34	1.34	25	0.98	64	2.52	49.0	1.93
W08-15SPML90	1/2	15	0.59	41	1.61	24	0.94	74	2.91	53.5	2.11
W08-16SPML90	1/2	16	0.63	41	1.61	29	1.14	74	2.91	58.5	2.30



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## MML Metric 24° Male Light - (CEL)

Part Number		F	Tube	H		L			
	in			mm	in	mm	mm	in	
W03-12MML	3/16	M12 x 1.5	L6	21.0	0.83	46.0	1.81	12	1/2
W03-14MML	3/16	M14 x 1.5	L8	21.0	0.83	46.0	1.81	14	9/16
W04-12MML	1/4	M12 x 1.5	L6	21.0	0.83	49.0	1.93	12	1/2
W04-14MML	1/4	M14 x 1.5	L8	21.0	0.83	49.0	1.93	14	9/16
W04-16MML	1/4	M16 x 1.5	L10	23.0	0.90	51.0	2.01	17	11/16
W04-18MML	1/4	M18 x 1.5	L12	23.0	0.90	51.0	2.01	19	3/4
W05-16MML	5/16	M16 x 1.5	L10	23.0	0.90	51.0	2.01	17	11/16
W05-18MML	5/16	M18 x 1.5	L12	23.0	0.90	51.0	2.01	19	3/4
W06-16MML	3/8	M16 x 1.5	L10	23.0	0.90	53.0	2.09	17	11/16
W06-18MML	3/8	M18 x 1.5	L12	23.0	0.90	53.0	2.09	19	3/4
W06-22MML	3/8	M22 x 1.5	L15	25.0	0.98	56.0	2.20	22	7/8
W08-18MML	1/2	M18 x 1.5	L12	25.0	0.98	58.0	2.28	19	3/4
W08-22MML	1/2	M22 x 1.5	L15	26.0	1.02	59.0	2.32	22	7/8
W08-26MML	1/2	M26 x 1.5	L18	28.0	1.10	61.0	2.40	27	1 1/16
W10-26MML	5/8	M26 x 1.5	L18	28.0	1.10	64.0	2.52	27	1 1/16
W10-30MML	5/8	M30 x 2.0	L22	30.0	1.18	66.0	2.60	30	1 3/16
W12-26MML	3/4	M26 x 1.5	L18	29.0	1.14	70.0	2.75	27	1 1/16
W12-30MML	3/4	M30 x 2.0	L22	31.0	1.22	72.0	2.83	30	1 3/16
W16-36MML	1	M36 x 2.0	L28	35.0	1.38	86.0	3.38	36	1 7/16
W20-45MML	1 1/4	M45 x 2.0	L35	40.0	1.57	97.0	3.82	46	1 3/16
W24-52MML	1 1/2	M54 x 2.0	L42	42.0	1.65	106.0	4.17	55	2 3/16

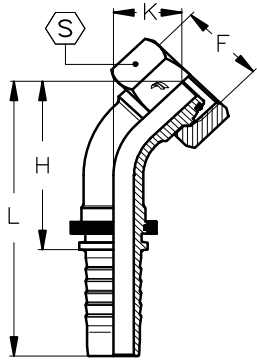




**FML Metric 24° Female Light - (DKOL)**

Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	in
W03-12FML	$\frac{3}{16}$	M12 x 1.5	L6	21.0	0.83	46.0	1.81	14	$\frac{9}{16}$
W03-14FML	$\frac{3}{16}$	M14 x 1.5	L8	21.0	0.83	46.0	1.81	17	$\frac{11}{16}$
W04-12FML	$\frac{1}{4}$	M12 x 1.5	L6	23.0	0.90	51.0	2.01	17	$\frac{11}{16}$
W04-14FML	$\frac{1}{4}$	M14 x 1.5	L8	22.0	0.87	50.0	1.97	17	$\frac{11}{16}$
W04-16FML	$\frac{1}{4}$	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	$\frac{3}{4}$
W04-18FML	$\frac{1}{4}$	M18 x 1.5	L12	24.0	0.94	52.0	2.05	22	$\frac{7}{8}$
W05-16FML	$\frac{5}{16}$	M16 x 1.5	L10	24.0	0.94	52.0	2.05	19	$\frac{3}{4}$
W05-18FML	$\frac{5}{16}$	M18 x 1.5	L12	24.0	0.94	52.0	2.05	22	$\frac{7}{8}$
W06-16FML	$\frac{3}{8}$	M16 x 1.5	L10	23.0	0.90	54.0	2.12	19	$\frac{3}{4}$
W06-18FML	$\frac{3}{8}$	M18 x 1.5	L12	24.0	0.94	54.0	2.12	22	$\frac{7}{8}$
W06-22FML	$\frac{3}{8}$	M22 x 1.5	L15	24.0	0.94	54.0	2.12	27	$\frac{11}{16}$
W08-22FML	$\frac{1}{2}$	M22 x 1.5	L15	24.0	0.94	57.0	2.24	27	$\frac{11}{16}$
W08-26FML	$\frac{1}{2}$	M26 x 1.5	L18	26.0	1.02	59.0	2.32	32	$\frac{11}{4}$
W10-26FML	$\frac{5}{8}$	M26 x 1.5	L18	27.0	1.06	62.0	2.44	32	$\frac{11}{4}$
W10-30FML	$\frac{5}{8}$	M30 x 2.0	L22	28.0	1.10	64.0	2.52	36	$\frac{17}{16}$
W12-26FML	$\frac{3}{4}$	M26 x 1.5	L18	34.0	1.34	75.0	2.95	32	$\frac{11}{4}$
W12-30FML	$\frac{3}{4}$	M30 x 2.0	L22	31.0	1.22	71.0	2.79	36	$\frac{17}{16}$
W16-36FML	<b>1</b>	M36 x 2.0	L28	32.0	1.26	83.0	3.27	41	$\frac{15}{8}$
W20-45FML	<b>1 1/4</b>	M45 x 2.0	L35	36.0	1.42	102.0	3.70	50	<b>2</b>
W24-52FML	<b>1 1/2</b>	M52 x 2.0	L42	37.0	1.46	183.0	4.02	60	$\frac{23}{8}$

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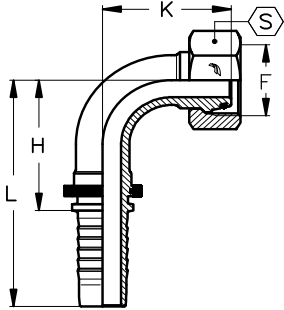
## FML45 Metric 24° Female Light - 45° Elbow (DKOL)





Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
W03-12FML45	$\frac{3}{16}$	M12 x 1.5	L6	34.0	1.34	59.0	2.32	14.0	0.55	14	$\frac{9}{16}$
W03-14FML45	$\frac{3}{16}$	M14 x 1.5	L8	35.0	1.38	60.0	2.36	14.0	0.55	17	$\frac{11}{16}$
W04-12FML45	$\frac{1}{4}$	M12 x 1.5	L6	35.0	1.38	63.0	2.48	14.0	0.55	17	$\frac{11}{16}$
W04-14FML45	$\frac{1}{4}$	M14 x 1.5	L8	36.0	1.42	64.0	2.52	14.0	0.55	17	$\frac{11}{16}$
W04-16FML45	$\frac{1}{4}$	M16 x 1.5	L10	38.0	1.50	66.0	2.60	16.0	0.63	19	$\frac{3}{4}$
W04-18FML45	$\frac{1}{4}$	M18 x 1.5	L12	39.0	1.53	67.0	2.64	17.0	0.67	22	$\frac{7}{8}$
W05-16FML45	$\frac{5}{16}$	M16 x 1.5	L10	39.0	1.53	67.0	2.64	17.0	0.67	19	$\frac{3}{4}$
W05-18FML45	$\frac{5}{16}$	M18 x 1.5	L12	39.0	1.53	67.0	2.64	18.0	0.71	22	$\frac{7}{8}$
W06-16FML45	$\frac{3}{8}$	M16 x 1.5	L10	39.0	1.53	69.0	2.72	16.0	0.63	19	$\frac{3}{4}$
W06-18FML45	$\frac{3}{8}$	M18 x 1.5	L12	40.0	1.57	71.0	2.79	18.0	0.71	22	$\frac{7}{8}$
W06-22FML45	$\frac{3}{8}$	M22 x 1.5	L15	42.0	1.65	72.0	2.83	19.0	0.75	27	$\frac{11}{16}$
W08-22FML45	$\frac{1}{2}$	M22 x 1.5	L15	46.0	1.81	79.0	3.11	19.0	0.75	27	$\frac{11}{16}$
W08-26FML45	$\frac{1}{2}$	M26 x 1.5	L18	47.0	1.85	80.0	3.15	21.0	0.83	32	$\frac{11}{4}$
W10-26FML45	$\frac{5}{8}$	M26 x 1.5	L18	53.0	2.09	89.0	3.50	22.0	0.87	32	$\frac{11}{4}$
W10-30FML45	$\frac{5}{8}$	M30 x 2.0	L22	54.0	2.12	90.0	3.54	23.0	0.90	36	$\frac{17}{16}$
W12-26FML45	$\frac{3}{4}$	M26 x 1.5	L18	66.0	2.60	107.0	4.21	29.0	1.14	32	$\frac{11}{4}$
W12-30FML45	$\frac{3}{4}$	M30 x 2.0	L22	62.0	2.44	103.0	4.05	25.0	0.98	36	$\frac{17}{16}$
W16-36FML45	<b>1</b>	M36 x 2.0	L28	80.0	3.15	131.0	5.16	31.0	1.22	41	$\frac{15}{8}$
W20-45FML45	<b>1 1/4</b>	M45 x 2.0	L35	96.0	3.78	154.0	6.06	40.0	1.57	50	<b>2</b>
W24-52FML45	<b>1 1/2</b>	M52 x 2.0	L42	115.4	4.53	179.0	7.05	48.0	1.89	60	<b>2 3/8</b>

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FML90 Metric 24° Female Light - 90° Elbow (DKOL)

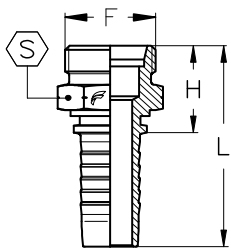


Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
W03-12FML90	3/16	M12 x 1.5	L6	27.0	1.06	52.0	2.05	28.0	1.10	14	9/16
W03-14FML90	3/16	M14 x 1.5	L8	27.0	1.06	52.0	2.05	28.0	1.10	17	11/16
W04-12FML90	1/4	M12 x 1.5	L6	26.0	1.02	53.0	2.09	26.0	1.02	17	11/16
W04-14FML90	1/4	M14 x 1.5	L8	29.0	1.14	57.0	2.24	29.0	1.14	17	11/16
W04-16FML90	1/4	M16 x 1.5	L10	29.0	1.14	57.0	2.24	30.0	1.18	19	3/4
W04-18FML90	1/4	M18 x 1.5	L12	29.0	1.14	57.0	2.24	32.0	1.26	22	7/8
W05-16FML90	5/16	M16 x 1.5	L10	31.0	1.22	59.0	2.32	33.0	1.30	19	3/4
W05-18FML90	5/16	M18 x 1.5	L12	28.0	1.10	56.0	2.20	32.0	1.26	22	7/8
W06-16FML90	3/8	M16 x 1.5	L10	31.0	1.22	61.0	2.40	31.0	1.22	19	3/4
W06-18FML90	3/8	M18 x 1.5	L12	31.0	1.22	61.0	2.40	33.0	1.30	22	7/8
W06-22FML90	3/8	M22 x 1.5	L15	31.0	1.22	61.0	2.40	35.0	1.38	27	11/16
W08-22FML90	1/2	M22 x 1.5	L15	37.0	1.46	70.0	2.75	38.0	1.50	27	11/16
W08-26FML90	1/2	M26 x 1.5	L18	37.0	1.46	70.0	2.75	40.0	1.57	32	1 1/4
W10-26FML90	5/8	M26 x 1.5	L18	44.0	1.73	80.0	3.15	45.0	1.77	32	1 1/4
W10-30FML90	5/8	M30 x 2.0	L22	44.0	1.73	80.0	3.15	47.0	1.85	36	1 7/16
W12-30FML90	3/4	M30 x 2.0	L22	54.0	2.12	94.0	3.70	52.0	2.05	36	1 7/16
W16-36FML90	1	M36 x 2.0	L28	70.0	2.75	121.0	4.76	66.0	2.60	41	1 5/8
W20-45FML90	1 1/4	M45 x 2.0	L35	84.0	3.31	141.0	5.55	83.0	3.27	50	2
W24-52FML90	1 1/2	M52 x 2.0	L42	100.0	3.94	164.0	6.46	100.0	3.94	60	2 3/8

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## MMS Metric 24° Male Heavy - (CES)

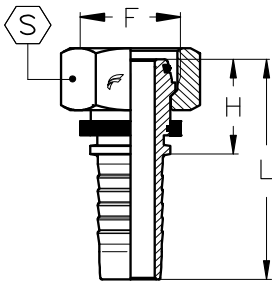
Part Number		F	Tube	H		L			
	in			mm	in	mm	mm	in	
W03-14MMS	3/16	M12 x 1.5	S6	23.0	0.91	48.0	1.89	14	9/16
W03-16MMS	3/16	M14 x 1.5	S8	23.0	0.91	48.0	1.89	17	1 1/16
W04-14MMS	1/4	M14 x 1.5	S6	23.0	0.90	51.0	2.01	14	9/16
W04-16MMS	1/4	M16 x 1.5	S8	23.0	0.90	51.0	2.01	17	1 1/16
W04-18MMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	3/4
W04-20MMS	1/4	M20 x 1.5	S12	25.0	0.98	53.0	2.09	22	7/8
W05-18MMS	5/16	M18 x 1.5	S10	24.0	0.94	52.0	2.05	19	3/4
W05-20MMS	5/16	M20 x 1.5	S12	25.0	0.98	53.0	2.09	22	7/8
W06-18MMS	3/8	M18 x 1.5	S10	24.0	0.94	55.0	2.16	19	3/4
W06-20MMS	3/8	M20 x 1.5	S12	25.0	0.98	56.0	2.20	22	7/8
W06-22MMS	3/8	M22 x 1.5	S14	27.0	1.06	58.0	2.28	22	7/8
W06-24MMS	3/8	M24 x 1.5	S16	31.0	1.22	58.0	2.28	24	1
W08-22MMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	22	7/8
W08-24MMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	24	1
W10-30MMS	5/8	M30 x 2.0	S20	32.0	1.26	68.0	2.68	30	1 3/16
W12-30MMS	3/4	M30 x 2.0	S20	33.0	1.30	74.0	2.91	30	1 3/16
W12-36MMS	3/4	M36 x 2.0	S25	37.0	1.46	78.0	3.07	36	1 7/16
W16-36MMS	1	M36 x 2.0	S25	39.0	1.53	90.0	3.54	36	1 7/16
W20-42MMS	1 1/4	M42 x 2.0	S30	44.0	1.73	101.0	3.98	46	1 13/16
W20-52MMS	1 1/4	M52 x 2.0	S38	48.0	1.89	105.0	4.13	55	2 3/16
W24-52MMS	1 1/2	M52 x 2.0	S38	48.0	1.89	112.0	4.41	55	2 3/16







## FMS Metric 24° Female Heavy - (DKOS)

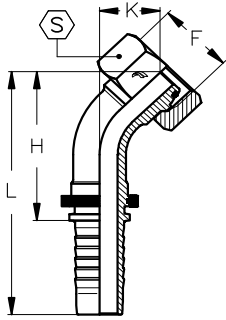
Part Number		F	Tube	H		L			
	in			mm	in	mm	mm	in	
W03-14FMS	3/16	M14 x 1.5	S6	21.0	0.83	46.0	1.81	17	1 1/16
W03-16FMS	3/16	M16 x 1.5	S8	21.0	0.83	46.0	1.81	19	3/4
W04-14FMS	1/4	M14 x 1.5	S6	23.0	0.90	51.0	2.01	17	1 1/16
W04-16FMS	1/4	M16 x 1.5	S8	22.0	0.87	50.0	1.97	19	3/4
W04-18FMS	1/4	M18 x 1.5	S10	24.0	0.94	52.0	2.05	22	7/8
W04-20FMS	1/4	M20 x 1.5	S12	24.0	0.94	52.0	2.05	24	1
W05-18FMS	5/16	M18 x 1.5	S10	24.0	0.94	52.0	2.05	22	7/8
W05-20FMS	5/16	M20 x 1.5	S12	24.0	0.94	52.0	2.05	24	1
W06-18FMS	3/8	M18 x 1.5	S10	25.0	0.98	55.0	2.16	22	7/8
W06-20FMS	3/8	M20 x 1.5	S12	24.0	0.94	54.0	2.12	24	1
W06-22FMS	3/8	M22 x 1.5	S14	28.0	1.10	58.0	2.28	27	1 1/16
W06-24FMS	3/8	M24 x 1.5	S16	28.0	1.10	58.0	2.28	30	1 3/16
W08-22FMS	1/2	M22 x 1.5	S14	28.0	1.10	61.0	2.40	27	1 1/16
W08-24FMS	1/2	M24 x 1.5	S16	29.0	1.14	62.0	2.44	30	1 3/16
W10-30FMS	5/8	M30 x 2.0	S20	33.0	1.30	69.0	2.72	36	1 7/16
W12-30FMS	3/4	M30 x 2.0	S20	36.0	1.42	76.0	2.99	36	1 7/16
W12-36FMS	3/4	M36 x 2.0	S25	38.0	1.50	78.0	3.07	46	1 13/16
W16-36FMS	1	M36 x 2.0	S25	40.0	1.57	91.0	3.58	46	1 13/16
W16-42FMS	1	M42 x 2.0	S30	40.0	1.57	91.0	3.58	50	2
W20-42FMS	1 1/4	M42 x 2.0	S30	41.0	1.61	99.0	3.90	50	2
W20-52FMS	1 1/4	M52 x 2.0	S38	45.0	1.77	103.0	4.06	60	2 3/8
W24-52FMS	1 1/2	M52 x 2.0	S38	46.0	1.81	110.0	4.33	60	2 3/8



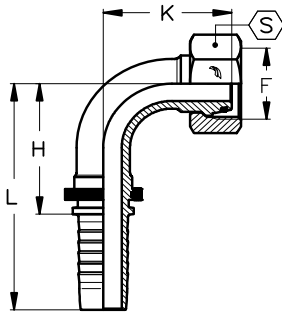
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FMS45 Metric 24° Female Heavy - 45° Elbow (DKOS)

Part Number		F	Tube	H		L		K			
	in			mm	in	mm	in	mm	in	mm	in
W03-14FMS45	3/16	M14 x 1.5	S6	34.0	1.34	59.0	2.32	14.0	0.55	17	1 1/16
W03-16FMS45	3/16	M16 x 1.5	S8	35.0	1.38	60.0	2.36	14.0	0.55	19	3/4
W04-14FMS45	1/4	M14 x 1.5	S6	35.0	1.38	63.0	2.48	14.0	0.55	17	1 1/16
W04-16FMS45	1/4	M16 x 1.5	S8	36.0	1.42	64.0	2.52	14.0	0.55	19	3/4
W04-18FMS45	1/4	M18 x 1.5	S10	38.0	1.50	66.0	2.60	16.0	0.63	22	7/8
W04-20FMS45	1/4	M20 x 1.5	S12	39.0	1.53	67.0	2.64	17.0	0.67	24	1
W05-18FMS45	5/16	M18 x 1.5	S10	39.0	1.53	67.0	2.64	17.0	0.67	22	7/8
W05-20FMS45	5/16	M20 x 1.5	S12	39.0	1.53	67.0	2.64	18.0	0.71	24	1
W06-18FMS45	3/8	M18 x 1.5	S10	40.0	1.57	70.0	2.75	17.0	0.67	22	7/8
W06-20FMS45	3/8	M20 x 1.5	S12	40.0	1.57	71.0	2.79	18.0	0.71	24	1
W06-22FMS45	3/8	M22 x 1.5	S14	42.0	1.65	72.0	2.83	19.0	0.75	27	1 1/16
W08-22FMS45	1/2	M22 x 1.5	S14	46.0	1.81	79.0	3.11	20.0	0.79	27	1 1/16
W08-24FMS45	1/2	M24 x 1.5	S16	47.0	1.85	80.0	3.15	21.0	0.83	30	1 3/16
W10-30FMS45	5/8	M30 x 2.0	S20	56.0	2.20	92.0	3.62	25.0	0.98	36	1 7/16
W12-30FMS45	3/4	M30 x 2.0	S20	64.0	2.52	105.0	4.13	27.0	1.06	36	1 7/16
W12-36FMS45	3/4	M36 x 2.0	S25	64.0	2.52	105.0	4.13	28.0	1.10	46	1 13/16
W16-36FMS45	1	M36 x 2.0	S25	82.0	3.23	133.0	5.24	34.0	1.34	41	1 13/16
W16-42FMS45	1	M42 x 2.0	S30	80.0	3.15	131.0	5.16	31.0	1.22	50	2
W20-42FMS45	1 1/4	M42 x 2.0	S30	96.0	3.78	154.0	6.06	41.0	1.61	50	2
W20-52FMS45	1 1/4	M52 x 2.0	S38	94.0	3.70	152.0	5.98	38.0	1.50	60	2 3/8
W24-52FMS45	1 1/2	M52 x 2.0	S38	115.0	4.53	180.0	7.09	49.0	1.93	60	2 3/8



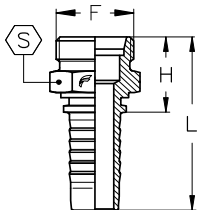
## FMS90 Metric 24° Female Heavy - 90° Elbow (DKOS)





Part Number		F	Tube	H		L		K			
	in			mm	in	mm	mm	in	mm	in	
W03-14FMS90	3/16	M14 x 1.5	S6	27.0	1.06	52.0	2.05	28.0	1.10	17	11/16
W03-16FMS90	3/16	M16 x 1.5	S8	27.0	1.06	52.0	2.05	28.0	1.10	19	3/4
W04-14FMS90	1/4	M14 x 1.5	S6	25.0	0.98	53.0	2.09	26.0	1.02	17	11/16
W04-16FMS90	1/4	M16 x 1.5	S8	29.0	1.41	57.0	2.24	29.0	1.14	19	3/4
W04-18FMS90	1/4	M18 x 1.5	S10	29.0	1.41	57.0	2.24	30.0	1.18	22	7/8
W04-20FMS90	1/4	M20 x 1.5	S12	29.0	1.41	57.0	2.24	32.0	1.26	24	1
W05-18FMS90	5/16	M18 x 1.5	S10	31.0	1.22	59.0	2.32	33.0	1.30	22	7/8
W05-20FMS90	5/16	M20 x 1.5	S12	28.0	1.10	56.0	2.20	32.0	1.26	24	1
W06-18FMS90	3/8	M18 x 1.5	S10	30.0	1.18	61.0	2.40	33.0	1.30	22	7/8
W06-20FMS90	3/8	M20 x 1.5	S12	31.0	1.22	61.0	2.40	33.0	1.30	24	1
W06-22FMS90	3/8	M22 x 1.5	S14	34.0	1.34	64.0	2.52	37.0	1.46	27	1 1/16
W08-22FMS90	1/2	M22 x 1.5	S14	39.0	1.53	71.0	2.79	41.0	1.61	27	1 1/16
W08-24FMS90	1/2	M24 x 1.5	S16	39.0	1.53	71.0	2.79	42.0	1.65	30	1 3/16
W10-30FMS90	5/8	M30 x 2.0	S20	44.0	1.73	80.0	3.15	49.0	1.93	36	1 7/16
W12-30FMS90	3/4	M30 x 2.0	S20	54.0	2.12	94.0	3.70	55.0	2.16	36	1 7/16
W12-36FMS90	3/4	M36 x 2.0	S25	54.0	2.12	94.0	3.70	57.0	2.24	46	1 13/16
W16-36FMS90	1	M36 x 2.0	S25	70.0	2.75	121.0	4.76	70.0	2.75	46	1 13/16
W16-42FMS90	1	M42 x 2.0	S30	70.0	2.75	121.0	4.76	66.0	2.60	50	2
W20-42FMS90	1 1/4	M42 x 2.0	S30	84.0	3.31	141.0	5.55	84.0	3.31	50	2
W20-52FMS90	1 1/4	M52 x 2.0	S38	84.0	3.31	141.0	5.55	80.0	3.15	60	2 3/8
W24-52FMS90	1 1/2	M52 x 2.0	S38	100.0	3.94	164.0	5.55	101.0	3.98	60	2 3/8

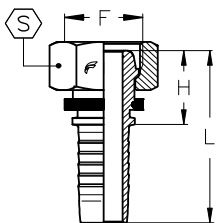
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## MGAZ French Metric Male GAZ



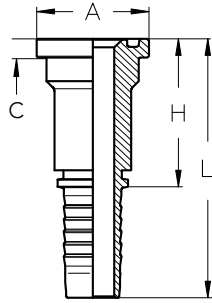
Part Number		T	Tube	H		L			
	in			mm	in	mm	in	mm	in
W06-20MGAZ	3/8	M20 x 1.5	13.25	26.7	1.05	57.2	2.25	22	7/8
W08-24MGAZ	1/2	M24 x 1.5	16.75	30.7	1.20	63.7	2.50	27	1 1/16
W10-30MGAZ	5/8	M30 x 1.5	21.25	31.2	1.22	67.2	2.64	32	1 1/4
W12-30MGAZ	3/4	M30 x 1.5	21.25	31.7	1.24	73.2	2.88	32	1 1/4
W12-36MGAZ	3/4	M36 x 1.5	26.75	31.7	1.24	73.2	2.88	36	1 7/16
W16-45MGAZ	1	M45 x 1.5	33.50	37.2	1.46	92.2	3.62	46	1 13/16

## FGAZ French Metric Female GAZ



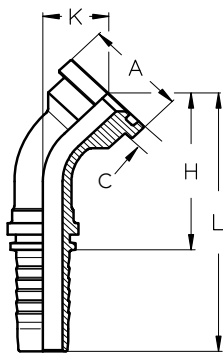
Part Number		T	Tube	H		L			
	in			mm	in	mm	in	mm	in
W06-20FGAZ	3/8	M20 x 1.5	13.25	23.8	0.93	54.3	2.13	24	1
W06-24FGAZ	3/8	M24 x 1.5	16.75	25.0	0.98	58.0	2.28	30	1 3/16
W08-24FGAZ	1/2	M24 x 1.5	16.75	27.3	1.07	60.3	2.37	30	1 3/16
W10-30FGAZ	5/8	M30 x 1.5	21.25	30	1.18	66	2.59	36	1 7/16
W12-30FGAZ	3/4	M30 x 1.5	21.25	30.6	1.20	71.6	2.81	36	1 7/16
W12-36FGAZ	3/4	M36 x 1.5	26.75	33.6	1.32	74.5	2.93	41	1 5/8
W16-45FGAZ	1	M45 x 1.5	33.50	33.9	1.33	88.9	3.50	50	2

## FL Code 61 Flange



Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
W08-08FL	1/2	6.7	30.2	1.19	47.0	1.85	80.0	3.15	
W08-12FL	1/2	6.7	38.1	1.50	47.0	1.85	80.0	3.15	
W10-12FL	5/8	6.7	38.1	1.50	48.0	1.89	84.0	3.30	
W12-08FL	3/4	6.7	30.2	1.18	49.5	1.95	90.0	3.54	
W12-12FL	3/4	6.7	38.1	1.50	54.0	2.13	94.5	3.72	
W12-16FL	3/4	8.0	44.5	1.75	54.0	2.13	94.5	3.72	
W16-12FL	1	6.7	38.1	1.50	55.0	2.20	106.0	4.17	
W16-16FL	1	8.0	44.5	1.75	55.0	2.17	106.0	4.17	
W16-20FL	1	8.0	50.8	2.00	55.0	2.17	106.0	4.17	
W20-16FL	1 1/4	8.0	44.5	1.75	62.0	2.44	120.0	4.72	
W20-20FL	1 1/4	8.0	50.8	2.00	62.0	2.44	120.0	4.72	
W20-24FL	1 1/4	8.0	60.3	2.37	62.0	2.44	120.0	4.72	
W24-24FL	1 1/2	8.0	60.4	2.38	67.5	2.66	132.0	5.20	
W24-32FL	1 1/2	9.5	71.4	2.81	67.5	2.66	132.0	5.20	
W32-32FL	2	9.5	71.4	2.81	70.0	2.76	140.0	5.50	
W40-40FL	2 1/2	9.5	84.1	3.31	76.0	2.99	157.0	6.18	
W48-48FL	3	9.5	101.6	4.00	68.0	2.68	156.0	6.14	

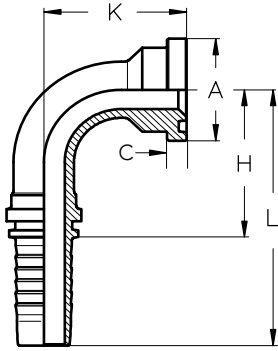
## FL45 Code 61 Flange - 45° Elbow




Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
W08-08FL45	1/2	6.7	30.2	1.19	47.0	1.85	80.0	3.15	20.0	0.79	
W08-12FL45	1/2	6.7	38.1	1.50	51.0	2.00	84.0	3.31	24.0	0.94	
W10-12FL45	5/8	6.7	38.1	1.50	55.0	2.17	91.0	3.58	24.0	0.94	
W12-08FL45	3/4	6.7	30.2	1.19	64.0	2.52	104.0	4.09	26.0	1.02	
W12-12FL45	3/4	6.7	38.1	1.50	62.0	2.44	102.0	4.02	25.0	0.98	
W12-16FL45	3/4	6.7	44.5	1.75	64.0	2.52	104.0	4.09	27.0	1.06	
W16-16FL45	1	8.0	44.5	1.75	77.0	3.03	128.0	5.04	28.0	1.10	
W16-20FL45	1	8.0	50.8	2.00	77.0	3.03	128.0	5.04	28.0	1.10	
W20-20FL45	1 1/4	8.0	50.8	2.00	88.0	3.46	146.0	5.75	32.0	1.26	
W20-24FL45	1 1/4	8.0	60.3	2.37	88.0	3.46	146.0	5.75	32.0	1.26	
W24-24FL45	1 1/2	8.0	60.3	2.37	105.0	4.13	169.0	6.65	37.0	1.46	
W24-32FL45	1 1/2	9.5	71.4	2.81	105.0	4.13	169.0	6.65	37.0	1.46	
W32-32FL45	2	9.5	71.4	2.81	212.0	8.35	142.0	5.59	53.0	2.09	
W40-40FL45	2 1/2	9.5	84.1	3.31	118.0	4.65	198.0	7.80	48.0	1.89	
W48-48FL45	3 1/2	9.5	101.6	4.00	115.0	4.53	207.0	8.15	49.0	1.93	

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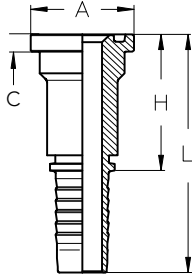
## FL90 Code 61 Flange - 90° Elbow




Part Number		C		A		H		L		K	
		in	mm	mm	in	mm	in	mm	in	mm	in
W08-08FL90-040	1/2	6.7	30.2	1.19	38.0	1.47	71.0	2.80	40.0	1.57	
W08-12FL90-045	1/2	6.7	38.1	1.50	38.0	1.47	71.0	2.80	45.0	1.77	
W10-08FL90-042	5/8	6.7	30.2	1.19	45.0	1.77	81.0	3.19	42.0	1.65	
W10-12FL90-047	5/8	6.7	38.1	1.50	45.0	1.77	81.0	3.19	47.0	1.85	
W12-08FL90-054	3/4	6.7	30.2	1.19	55.0	2.17	95.0	3.74	54.0	2.13	
W12-12FL90-051	3/4	6.7	38.1	1.50	55.0	2.17	95.0	3.74	51.0	2.00	
W12-16FL90-054	3/4	8.0	44.5	1.75	55.0	2.17	95.0	3.74	54.0	2.13	
W16-16FL90-061	1	8.0	44.5	1.75	70.0	2.76	121.0	4.76	61.0	2.40	
W16-20FL90-061	1	8.0	50.8	2.00	70.0	2.76	121.0	4.76	61.0	2.40	
W20-16FL90-078	1 1/4	8.0	44.5	1.75	85.0	3.35	142.0	5.59	78.0	3.07	
W20-20FL90-070	1 1/4	8.0	50.8	2.00	85.0	3.35	142.0	5.59	70.0	2.76	
W20-24FL90-070	1 1/4	8.0	60.3	2.37	85.0	3.35	142.0	5.59	70.0	2.76	
W24-24FL90-083	1 1/2	8.0	60.4	2.38	105.0	4.13	170.0	6.69	83.0	3.27	
W24-32FL90-083	1 1/2	9.5	71.4	2.81	105.0	4.13	170.0	6.69	83.0	3.27	
W32-32FL90-122	2	9.5	71.4	2.81	140.0	5.51	210.0	8.27	122.0	4.72	
W40-40FL90-122	2 1/2	9.5	84.1	3.31	110.0	4.33	191.0	7.52	115.0	4.53	
W48-48FL90-122	3	9.5	101.6	4.00	122.0	4.80	210.0	8.27	195.0	7.77	

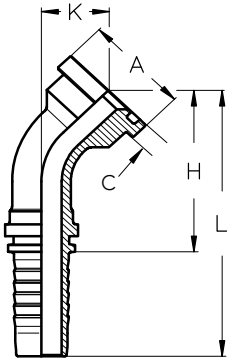
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## FLH Code 62 Flange



Part Number		C		A		H		L	
	in	mm	mm	in	mm	in	mm	in	
W08-08FLH	1/2	7.8	31.8	1.25	47.0	1.85	80.0	3.15	
W08-12FLH	1/2	8.8	41.3	1.63	47.0	1.85	80.0	3.15	
W10-12FLH	5/8	8.8	41.3	1.63	48.0	1.89	84.0	3.31	
W12-12FLH	3/4	8.8	41.3	1.63	58.0	2.28	98.5	3.88	
W12-16FLH	3/4	9.5	47.6	1.87	58.0	2.28	98.5	3.88	
W16-16FLH	1	9.5	47.6	1.87	64.0	2.52	115.0	4.53	
W16-20FLH	1	10.3	54.0	2.13	64.0	2.52	115.0	4.53	
W20-20FLH	1 1/4	10.3	54.0	2.13	67.5	2.66	125.0	4.92	
W20-24FLH	1 1/4	12.6	63.5	2.50	67.5	2.66	125.0	4.92	
W24-24FLH	1 1/2	12.6	63.5	2.50	79.5	3.13	144.0	5.67	
W24-32FLH	1 1/2	12.6	79.4	3.13	79.5	3.13	144.0	5.67	
W32-32FLH	2	12.6	79.4	3.13	95.0	3.74	165.0	6.50	

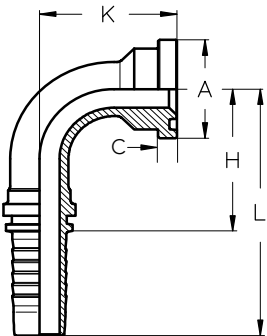
## FLH45 Code 62 Flange - 45° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
W08-08FLH45	1/2	7.8	31.8	1.25	47.0	1.85	80.0	3.15	20.0	0.79	
W08-12FLH45	1/2	8.8	41.3	1.63	53.0	2.09	86.0	3.39	26.0	1.02	
W10-12FLH45	5/8	8.8	41.3	1.63	57.0	2.24	93.0	3.66	26.0	1.02	
W12-12FLH45	3/4	8.8	41.3	1.63	64.0	2.52	104.0	4.09	26.0	1.02	
W12-16FLH45	3/4	9.5	47.6	1.87	68.0	2.68	108.0	4.25	31.0	1.22	
W16-16FLH45	1	9.5	47.6	1.87	80.0	3.15	131.0	5.16	32.0	1.26	
W16-20FLH45	1	10.3	54.0	2.13	85.0	3.35	136.0	5.35	37.0	1.46	
W20-20FLH45	1 1/4	10.3	54.0	2.13	93.0	3.66	151.0	5.94	37.0	1.46	
W20-24FLH45	1 1/4	12.6	63.5	2.50	99.0	3.90	157.0	6.18	43.0	1.69	
W24-24FLH45	1 1/2	12.6	63.5	2.50	111.0	4.37	175.0	6.89	44.0	1.73	
W24-32FLH45	1 1/2	12.6	79.4	3.13	122.0	4.80	184.0	7.32	55.0	2.17	
W32-32FLH45	2	12.6	79.4	3.13	147.0	5.79	217.0	8.54	58.0	2.28	

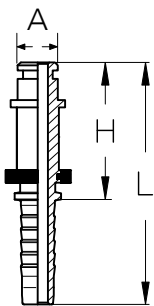
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## FLH90 Code 62 Flange - 90° Elbow



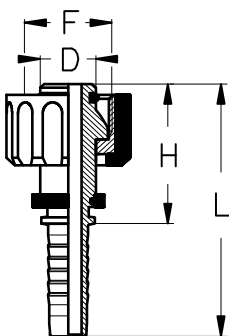
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
W08-08FLH90-040	1/2	7.8	31.8	1.25	38.0	1.50	71.0	2.80	40.0	1.57	
W08-12FLH90-047	1/2	8.8	41.3	1.63	38.0	1.50	71.0	2.80	47.0	1.85	
W10-12FLH90-050	5/8	8.8	41.3	1.63	45.0	1.77	81.0	3.19	50.0	1.97	
W12-12FLH90-054	3/4	8.8	41.3	1.63	55.0	2.17	95.0	3.74	54.0	2.13	
W12-16FLH90-060	3/4	9.5	47.6	1.87	55.0	2.17	95.0	3.74	60.0	2.36	
W16-16FLH90-066	1	9.5	47.6	1.87	70.0	2.76	121.0	4.76	66.0	2.60	
W16-20FLH90-073	1	10.3	54.0	2.13	70.0	2.76	121.0	4.76	73.0	2.87	
W20-20FLH90-078	1 1/4	10.3	54.0	2.13	85.0	3.35	142.0	5.59	78.0	3.07	
W20-24FLH90-086	1 1/4	12.6	63.5	2.50	85.0	3.35	142.0	5.59	86.0	3.39	
W24-24FLH90-093	1 1/2	12.6	63.5	2.50	105.0	4.13	170.0	6.69	93.0	3.66	
W24-32FLH90-109	1 1/2	12.6	79.4	3.13	105.0	4.13	1.70	6.69	109.0	4.29	
W32-32FLH90-125	2	12.6	79.4	3.13	140.0	5.51	210.0	8.27	125.0	4.92	

## MPWK Pressure Wash Gun End - K



Part Number		A		H		L	
	in	mm	in	mm	in	mm	in
W04-22MPWK	1/4	11.0	0.43	36.0	1.42	64.0	2.52
W05-22MPWK	5/16	11.0	0.43	36.0	1.42	64.0	2.52

## FPWK Metric Pressure Wash Swivel - K

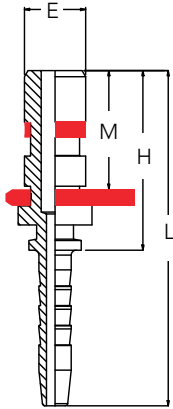


Part Number		F	H		L		D	
	in		mm	in	mm	in	mm	
W04-22FPWK	1/4	M22 x 1.5	35.0	1.38	63.0	2.48	14	0.55
W05-22FPWK	5/16	M22 x 1.5	38.0	1.50	66.0	2.60	14	0.55
W06-22FPWK	3/8	M22 x 1.5	38.0	1.50	68.0	2.68	14	0.55

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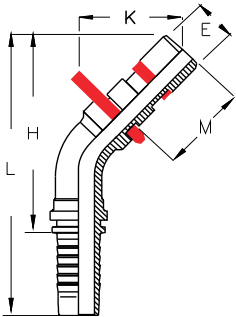


## 14710 WEO Male



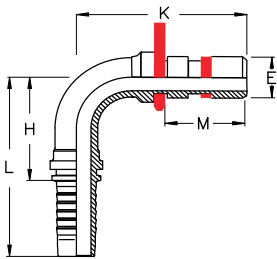
Part Number		E		H		M		L	
	in	mm	in	mm	in	mm	in	mm	in
147100404	1/4	10.0	0.39	33.0	1.30	19.0	0.75	58.0	2.28
147100604	1/4	13.0	0.51	33.0	1.30	22.0	0.87	61.0	2.40
147100606	3/8	13.0	0.51	33.0	1.30	22.0	0.87	63.0	2.48
147100806	3/8	16.0	0.63	33.0	1.30	22.0	0.87	63.0	2.48
147100808	1/2	16.0	0.63	33.0	1.30	22.0	0.87	64.0	2.52
147101208	1/2	23.0	0.91	42.5	1.67	31.0	1.22	73.5	2.90
147101212	3/4	23.0	0.91	43.0	1.70	31.0	1.22	82.0	3.23

## 14712 WEO Male - 45° Elbow



Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
147120404	1/4	10.0	0.39	51.0	2.01	19.0	0.75	79.0	3.11	28.0	1.10
147120604	1/4	13.0	0.51	55.0	2.17	22.0	0.87	83.0	3.27	32.0	1.26
147120606	3/8	13.0	0.51	59.0	2.32	22.0	0.87	89.0	3.50	33.0	1.30
147120806	3/8	16.0	0.63	60.0	2.36	22.0	0.87	90.0	3.54	34.0	1.34
147120808	1/2	16.0	0.68	66.0	2.60	22.0	0.87	97.0	3.82	36.0	1.42
147121208	1/2	23.0	0.91	73.0	2.87	31.0	1.22	104.0	4.09	44.0	1.73
147121212	3/4	23.0	0.91	103.0	4.06	31.0	1.22	142.0	5.59	55.0	2.17

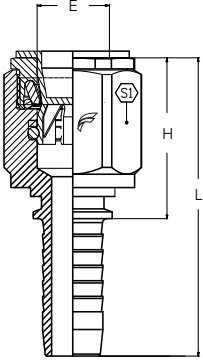
## 14714 WEO Male - 90° Elbow



Part Number		E		H		M		L		K	
	in	mm	in	mm	in	mm	in	mm	in	mm	in
147140404	1/4	10.0	0.39	34.0	1.34	19.0	0.75	62.0	2.44	51.1	2.00
147140604	1/4	13.0	0.51	34.0	1.34	22.0	0.87	62.0	2.44	56.0	2.20
147140606	3/8	13.0	0.51	39.0	1.54	22.0	0.87	69.0	2.71	60.0	2.36
147140806	3/8	16.0	0.63	39.0	1.54	22.0	0.87	69.0	2.71	61.0	2.40
147140808	1/2	16.0	0.63	48.0	1.89	22.0	0.87	79.0	3.11	69.0	2.72
147141208	1/2	23.0	0.91	48.0	1.89	31.0	1.22	79.0	3.11	79.0	3.11
147141212	3/4	23.0	0.91	75.0	2.95	31.0	1.22	114.0	4.49	104.0	4.09

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

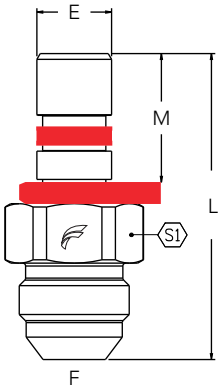
## 14817 WEO Female



Part Number	E		H		L		S		
	in	mm	in	mm	in	mm	in	mm	
148170404	1/4	10.0	0.39	32.0	1.26	62.0	2.44	20	13/16
148170606	3/8	13.0	0.51	36.0	1.42	66.0	2.60	24	15/16
148170808	1/2	16.0	0.63	38.0	1.50	67.0	2.64	28	1/8
148171212	3/4	23.0	0.91	48.0	1.89	87.0	3.42	36	17/16

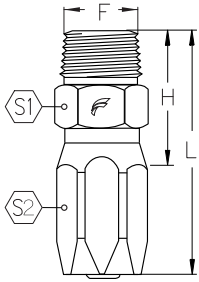
### 3




## 14727 WEO Male - MJIC



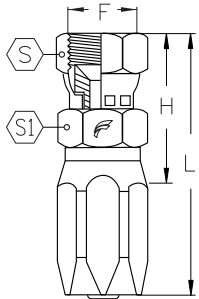
Part Number	E		F	M		L		S	
	mm	in	in	mm	in	mm	in	mm	in
147270407	10.0	0.39	7/16 - 18	19.0	0.75	42.0	1.65	13	7/16
147270609	13.0	0.51	9/16 - 18	22.0	0.87	47.0	1.85	16	5/8
147270612	13.0	0.51	3/4 - 16	22.0	0.87	53.0	2.09	22	7/8
147270809	16.0	0.63	9/16 - 18	22.0	0.87	47.0	1.85	20	13/16
147270812	16.0	0.63	3/4 - 16	22.0	0.87	52.0	2.05	20	13/16
147270813	16.0	0.63	7/8 - 14	22.0	0.87	55.0	2.17	24	13/16
147270817	16.0	0.63	1 1/16 - 12	22.0	0.87	62.0	2.44	30	13/16
147271217	23.0	0.91	1 1/16 - 12	31.0	1.22	68.0	2.68	30	13/16




## MP NPT Male



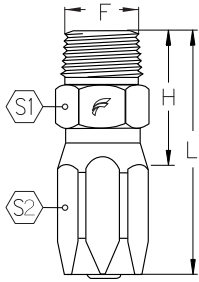
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
1R04-04MP	1/4	1/4 - 18	30.0	1.18	54.6	2.15	14	9/16	19	3/4
1R06-06MP	3/8	3/8 - 18	31.7	1.25	58.7	2.31	17	1 1/16	22	7/8
1R08-08MP	1/2	1/2 - 14	38.3	1.51	69.9	2.75	22	7/8	27	1 1/16




## FJ JIC 37° Female Swivel



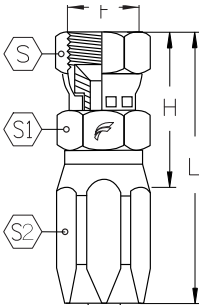
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
1R04-04FJ	1/4	7/16 - 20	30.7	1.21	55.4	2.18	14	9/16	19	3/4
1R06-06FJ	3/8	9/16 - 18	35.3	1.39	62.2	2.45	17	1 1/16	22	7/8
1R08-08FJ	1/2	3/4 - 16	39.9	1.57	71.4	2.81	22	7/8	27	1 1/16




## MP NPT Male



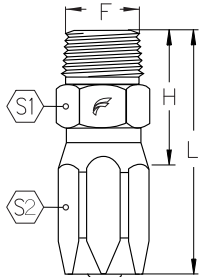
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
2R04-04MP	1/4	1/4 - 18	34.0	1.34	65.0	2.56	14	9/16	20	13/16
2R06-06MP	3/8	3/8 - 18	33.3	1.31	70.6	2.78	17	1 1/16	24	1
2R08-08MP	1/2	1/2 - 14	39.6	1.56	79.2	3.12	22	7/8	28	1 1/8
2R12-12MP	3/4	3/4 - 14	44.4	1.75	92.7	3.65	27	1 1/16	38	1 1/2

## FJ JIC 37° Female Swivel



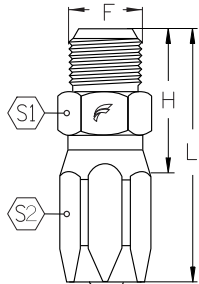
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
2R04-04FJ	1/4	7/16 - 20	34.8	1.37	66.5	2.62	14	9/16	20	13/16
2R06-06FJ	3/8	9/16 - 18	38.1	1.50	74.9	2.95	17	1 1/16	24	1
2R08-08FJ	1/2	3/4 - 16	42.4	1.67	82.0	3.23	22	7/8	28	1 1/8
2R12-12FJ	3/4	1 1/16 - 12	50.8	2.00	98.8	3.89	32	1 1/4	38	1 1/2

## MP NPT Male



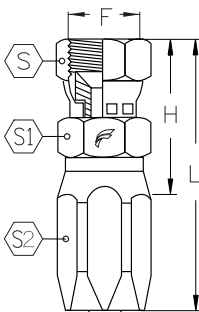
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R04-02MP	3/16	1/8 - 27	23.4	0.92	42.4	1.67	14	9/16	15	5/8
5R04-04MP	3/16	1/4 - 18	27.9	1.10	47.0	1.85	14	9/16	15	5/8
5R05-04MP	1/4	1/4 - 18	30.0	1.18	49.8	1.96	14	9/16	17	1 1/16
5R06-04MP	5/16	1/4 - 18	31.2	1.23	55.1	2.17	14	9/16	20	1 3/16
5R06-06MP	5/16	3/8 - 18	32.0	1.26	55.9	2.20	17	1 1/16	20	1 3/16
5R08-06MP	13/32	3/8 - 18	33.5	1.32	63.0	2.48	17	1 1/16	24	1
5R08-08MP	13/32	1/2 - 14	39.6	1.56	68.8	2.71	22	7/8	24	1
5R10-08MP	1/2	1/2 - 14	40.4	1.59	72.4	2.85	22	7/8	28	1 1/8
5R12-12MP	5/8	3/4 - 14	42.4	1.67	81.3	3.20	27	1 1/16	32	1 1/4
5R16-16MP	7/8	1 - 11 1/2	43.4	1.71	75.7	2.98	34	1 3/8	35	1 7/16
5R20-20MP	1 1/4	1 1/4 - 11 1/2	46.5	1.83	81.0	3.19	44	1 3/4	44	1 3/4
5R24-24MP	1 1/2	1 1/2 - 11 1/2	48.8	1.92	85.3	3.36	51	2	51	2
5R32-32MP	2	2 - 11 1/2	52.3	2.06	99.3	3.91	63	2 1/2	63	2 1/2

## MJ JIC 37° Male



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R04-04MJ	3/16	7/16 - 20	27.7	1.09	46.7	1.84	12	1/2	16	5/8
5R05-05MJ	1/4	1/2 - 20	29.7	1.17	49.5	1.95	14	9/16	17	1 1/16
5R06-06MJ	5/16	9/16 - 18	30.7	1.21	53.8	2.12	16	5/8	20	1 3/16
5R08-08MJ	13/32	3/4 - 16	33.3	1.31	65.0	2.56	20	13/16	24	1
5R10-10MJ	1/2	3/8 - 14	40.4	1.59	76.2	3.00	22	15/16	28	1 1/8

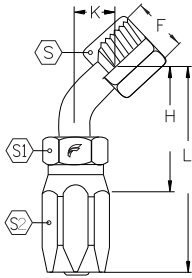
## FJ JIC 37° Female Swivel






Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R04-04FJ	3/16	7/16 - 20	30.0	1.18	49.0	1.93	15	5/8	14	9/16
5R05-05FJ	1/4	1/2 - 20	32.8	1.29	52.6	2.07	16	5/8	17	1 1/16
5R06-06FJ	5/16	9/16 - 18	35.6	1.40	58.7	2.31	17	1 1/16	20	1 3/16
5R08-08FJ	13/32	3/4 - 16	39.9	1.57	72.1	2.84	22	7/8	24	1
5R10-10FJ	1/2	7/8 - 14	42.4	1.67	77.7	3.06	24	1	28	1 1/8
5R12-12FJ	5/8	1 1/16 - 12	48.8	1.92	88.9	3.50	32	1 1/4	32	1 1/4
5R16-16FJ	7/8	1 5/16 - 12	48.8	1.92	80.8	3.18	38	1 1/2	35	1 7/16
5R20-20FJ	1 1/8	1 5/8 - 12	51.6	2.03	85.6	3.37	50	2	43	1 3/4
5R24-24FJ	1 3/8	1 7/8 - 12	56.6	2.23	92.7	3.65	57	2 1/4	50	2
5R32-32FJ	1 13/16	2 1/2 - 12	65.3	2.57	112.5	4.43	73	2 7/8	55	2 1/2

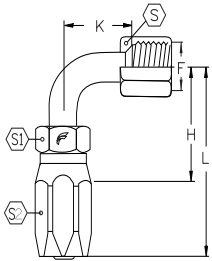
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.




## FJ45 JIC 37° Female Swivel - 45° Elbow



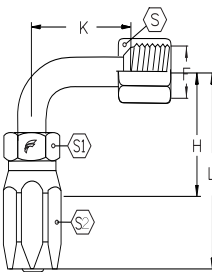
Part Number		F	H		L		K					
	in		mm	in	mm	in	mm	in	mm	in	mm	in
5R04-04FJ45	3/16	7/16 - 20	27.9	1.10	46.7	1.84	8.1	0.32	14	9/16	14	9/16
5R05-05FJ45	1/4	1/2 - 20	32.5	1.28	26.9	1.06	8.9	0.35	15	5/8	14	9/16
5R06-06FJ45	5/16	9/16 - 18	33.5	1.32	56.6	2.23	9.9	0.39	17	11/16	14	9/16
5R08-08FJ45	13/32	3/4 - 16	46.7	1.84	75.7	2.98	13.7	0.54	22	7/8	17	11/16
5R10-10FJ45	1/2	7/8 - 14	49.5	1.95	82.0	3.23	15.7	0.62	25	1	22	7/8
5R12-12FJ45	5/8	1 1/16 - 12	56.1	2.21	96.0	3.78	19.3	0.76	32	1 1/4	28	1 1/8
5R16-16FJ45	7/8	1 5/16 - 12	56.6	2.23	90.4	3.56	22.6	0.89	38	1 1/2	34	1 3/8




## FJ90 JIC 90° Female Swivel - 90° Elbow



Part Number		F	H		L		K					
	in		mm	in	mm	in	mm	in	mm	in	mm	in
5R04-04FJ90	3/16	7/16 - 20	25.4	1.00	44.4	1.75	17.3	0.68	14	9/16	14	9/16
5R05-05FJ90	1/4	1/2 - 20	30.0	1.18	49.8	1.96	19.3	0.76	15	5/8	14	9/16
5R06-06FJ90	5/16	9/16 - 18	31.2	1.23	53.8	2.12	21.3	0.84	17	11/16	17	11/16
5R08-08FJ90	13/32	3/4 - 16	40.6	1.60	69.8	2.75	27.7	1.09	22	7/8	26	1 1/16
5R10-10FJ90	7/8	7/8 - 14	41.9	1.65	74.4	2.93	31.2	1.23	25	1	22	7/8
5R12-12FJ90	5/8	1 1/16 - 12	55.1	2.17	95.2	3.75	50	1.81	32	1 1/4	31	1 1/4
5R16-16FJ90	7/8	1 5/16 - 12	57.9	2.28	89.9	3.54	54.3	2.14	38	1 1/2	38	1 1/2

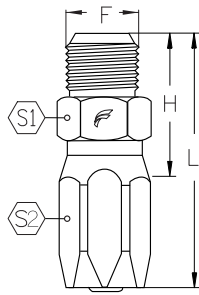
## FJ90L JIC 37° Female Swivel - 90° Elbow Long Drop






Part Number		F	H		L		K					
	in		mm	in	mm	in	mm	in	mm	in	mm	in
5R04-04FJ90L	3/16	7/16 - 20	25.4	1.00	44.4	1.75	45.5	1.79	14	9/16	14	9/16
5R05-05FJ90L	1/4	1/2 - 20	30.0	1.18	49.8	1.96	45.2	1.78	15	5/8	14	9/16
5R06-06FJ90L	5/16	9/16 - 18	31.2	1.23	53.8	2.12	55.4	2.18	17	11/16	17	11/16
5R08-08FJ90L	13/32	3/4 - 16	40.6	1.60	69.8	2.75	61.7	2.43	22	7/8	22	7/8
5R10-10FJ90L	1/2	7/8 - 14	41.9	1.65	74.4	2.93	65.0	2.56	25	1	26	1 1/16
5R12-12FJ90L	5/8	1 1/16 - 12	55.1	2.17	95.2	3.75	94.7	3.73	32	1 1/4	31	1 1/4
5R16-16FJ90L	7/8	1 5/16 - 12	57.9	2.28	89.9	3.54	109.7	4.32	38	1 1/2	38	1 1/2

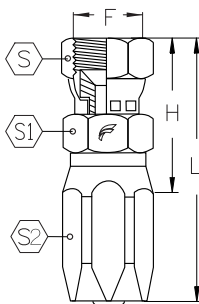
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.




## MA SAE 45° Male



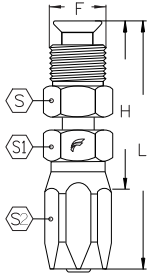
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R06-06MA	5/16	9/16 - 18	32.5	1.28	55.4	2.18	20	1 3/16	17	1 1/16
5R12-12MA	5/8	1 1/16 - 14	49.0	1.93	88.9	3.50	32	1 1/4	28	1 1/8




## FA SAE 45° Female Swivel



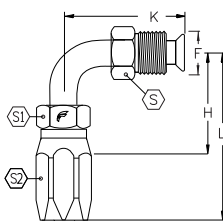
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R06-06FA	5/16	9/16 - 18	36.3	1.43	57.6	2.27	20	1 3/16	19	3/4
5R12-12FA	5/8	1 1/16 - 14	48.8	1.92	88.9	3.50	32	1 1/4	32	1 1/4




## MIX SAE Inverted Male Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R06-06MIX	5/16	9/16 - 18	46.0	1.81	68.8	2.71	12	1/2	20	1 3/16

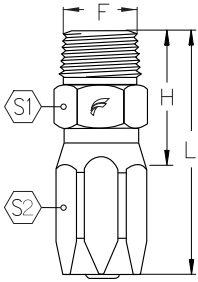
## MIX90 SAE Inverted Male Swivel - 90° Elbow






Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
5R06-06MIX90	5/16	9/16 - 18	45.3	1.78	67	2.63	12	1/2	20	1 3/16

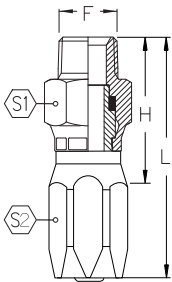
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.




## MP NPT Male



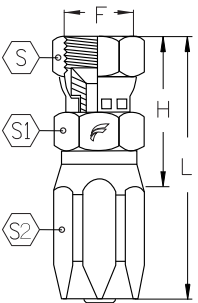
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
7R02-02MP	1/8	1/8 - 27	23.4	0.92	41.7	1.63	12	1/2	12	1/2




## MP NPT Male Swivel



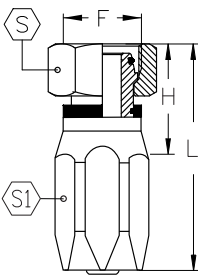
Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
7R02-02MPX	1/8	1/8 - 27	39.0	1.54	56.9	2.24	12	1/2	12	1/2



## FJ JIC 37° Female Swivel



Part Number		F	H		L					
	in		mm	in	mm	in	mm	in	mm	in
7R02-04FJ	1/8	7/16 - 20	22.4	0.88	40.7	1.60	14	9/16	12	1/2

## FMLL Metric 24° Female X-Light Metric (DKOL)




Part Number		F	Tube	H		L			
	in			mm	in	mm	in	mm	
7R02-10FMLL	1/8	M10 x 1.0	LL6	18.3	0.72	45.0	1.75	14	9/16

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.




## MP NPT Male



Part Number		F
	in	
PL04-02MP	1/4	1/8 - 27
PL04-04MP	1/4	1/4 - 18
PL04-06MP	1/4	3/8 - 18
PL05-02MP	5/16	1/8 - 27
PL05-04MP	5/16	1/4 - 18
PL06-02MP	3/8	1/8 - 27
PL06-04MP	3/8	1/4 - 18
PL06-06MP	3/8	3/8 - 18
PL06-08MP	3/8	1/2 - 14
PL08-04MP	1/2	1/4 - 18
PL08-06MP	1/2	3/8 - 18
PL08-08MP	1/2	1/2 - 14
PL08-12MP	1/2	3/4 - 14
PL10-08MP	5/8	1/2 - 14
PL10-12MP	5/8	3/4 - 14
PL12-08MP	3/4	1/2 - 14
PL12-12MP	3/4	3/4 - 14
PL16-16MP	1	1 - 11 1/2




## FJ JIC 37° Female Swivel

Part Number		F
	in	
PL04-04FJ	1/4	7/16 - 20
PL04-05FJ	1/4	1/2 - 20
PL05-06FJ	5/16	9/16 - 18
PL06-06FJ	3/8	9/16 - 18
PL06-08FJ	3/8	3/4 - 16
PL08-08FJ	1/2	3/4 - 16
PL08-10FJ	1/2	7/8 - 14
PL10-10FJ	5/8	7/8 - 14
PL12-12FJ	3/4	1 1/16 - 12
PL16-16FJ	1	1 5/16 - 12




## MJ MJ Male JIC

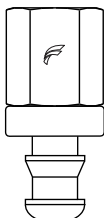
Part Number		F
	in	
PL04-04MJ	1/4	7/16 - 20
PL04-05MJ	1/4	1/2 - 20
PL06-06MJ	3/8	9/16 - 18
PL08-08MJ	1/2	3/4 - 16
PL12-12MJ	3/4	1 1/16 - 16


## FPX NPT Female Swivel



Part Number		F
	in	
PL04-04FPX	1/4	1/4 - 18
PL06-06FPX	3/8	3/8 - 18
PL08-08FPX	1/2	1/2 - 14

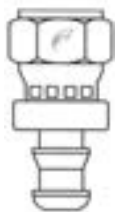
## FP NPT Female




Part Number		F
	in	
PL04-04FP	1/4	1/4 - 18
PL06-06FP	3/8	3/8 - 18
PL08-08FP	1/2	1/2 - 14

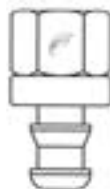
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.


## FA SAE 45° Female Swivel



Part Number		F
	in	
PL06-06FA	3/8	5/8 - 18
PL12-12FA	3/4	1 1/16 - 14


## FIX SAE Inverted Flare Female Rigid



Part Number		F
	in	
PL04-03FIX	1/4	3/8 - 24
PL04-04FIX	1/4	7/16 - 24
PL04-05FIX	1/4	1/2 - 20
PL06-06FIX	3/8	5/8 - 18
PL08-08FIX	1/2	3/4 - 18


## MA SAE 45° Male



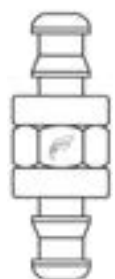
Part Number		F
	in	
PL06-06MA	3/8	5/8 - 18


## MIX SAE Inverted Flare Male Swivel



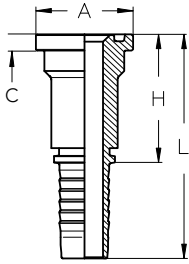
Part Number		F
	in	
PL04-03MIX	1/4	3/8 - 24
PL04-04MIX	1/4	7/16 - 24
PL04-05MIX	1/4	1/2 - 20
PL06-06MIX	3/8	5/8 - 18
PL08-08MIX	1/2	3/4 - 18


## HM Hose Mender



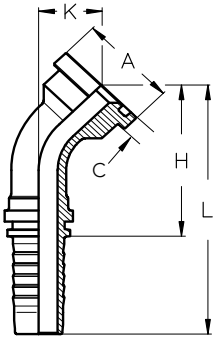
Part Number	
	in
PL04-04HM	1/4
PL05-05HM	5/16
PL06-06HM	3/8
PL08-08HM	1/2
PL10-10HM	5/8
PL12-12HM	3/4


## FL Code 61 Flange



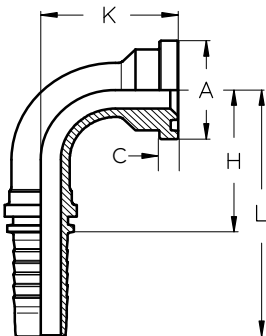
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
H40-40FL	2½	9.5	84.1	3.31							
H40-48FL	2½	9.5	101.6	4.00							
H48-48FL	3	9.5	101.6	4.00							
H48-56FL	3	11.2	114.3	4.50							
H56-56FL	3½	11.2	114.3	4.50							
H64-64FL	4	11.2	127.0	5.00							


## FL45 SAE Code 61 Flange - 45° Elbow



Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
H40-40FL45	2½	9.5	84.1	3.31							
H40-48FL45	2½	9.5	101.6	4.00							
H48-48FL45	3	9.5	101.6	4.00							
H56-56FL45	3½	11.2	114.3	4.50							
H64-64FL45	4	11.2	127.0	5.00							

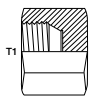
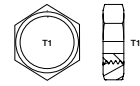
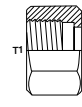

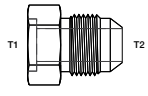
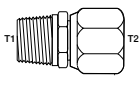
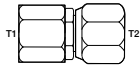
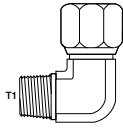
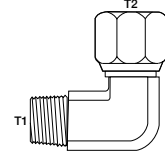
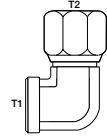
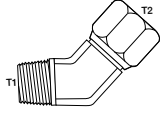
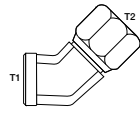
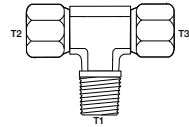
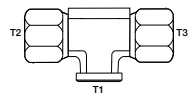
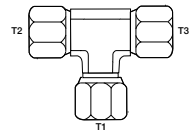
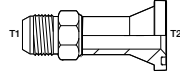
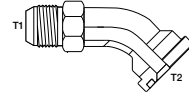
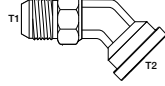
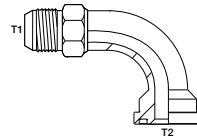
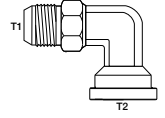
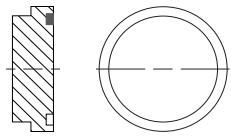
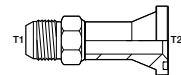
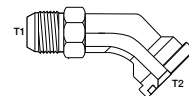
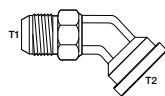
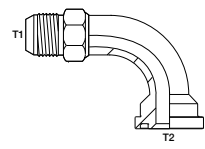
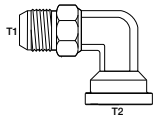
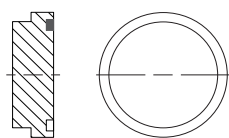
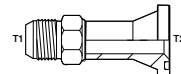


## FL90 SAE Code 61 Flange - 90° Elbow




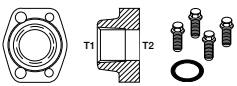
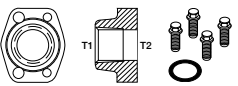
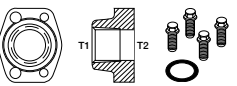
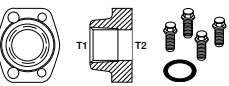
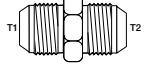
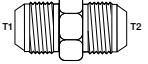
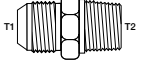
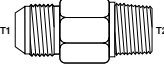

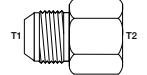
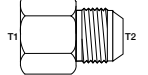
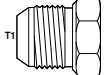
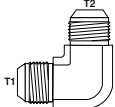
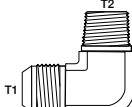
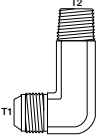
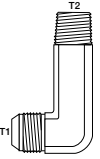
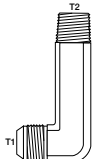
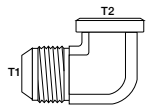
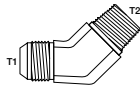
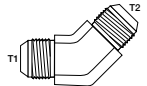
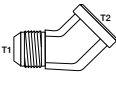
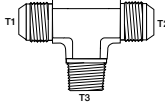
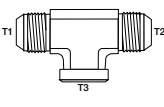
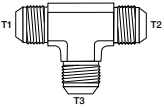
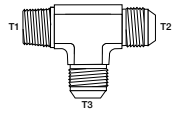
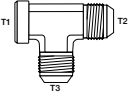
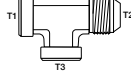
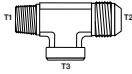
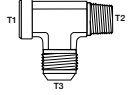
Part Number		C		A		H		L		K	
	in	mm	mm	in	mm	in	mm	in	mm	in	
H40-40FL90	2½	9.5	84.1	3.31							
H40-48FL90	2½	9.5	101.6	4.00							
H48-48FL90	3	9.5	101.6	4.00							
H56-56FL90	3½	11.2	114.3	4.50							
H64-64FL90	4	11.2	127.0	5.00							

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# Pictorial Index

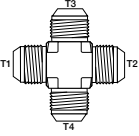
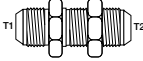
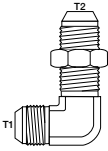
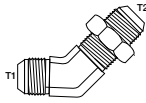
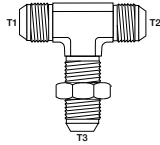
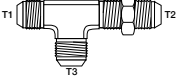
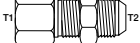
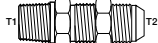
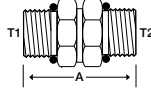
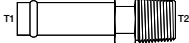
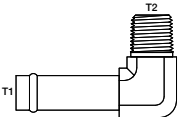
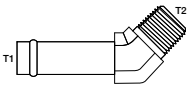
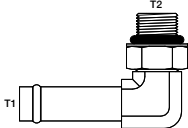
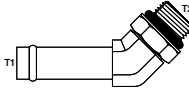
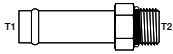
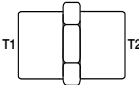

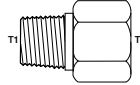




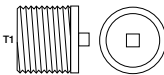
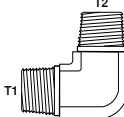
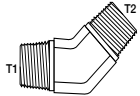
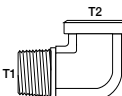
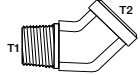
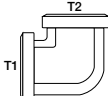
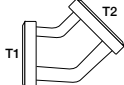
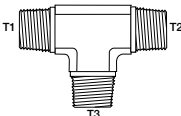
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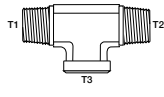
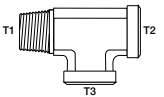
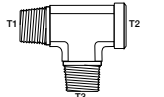
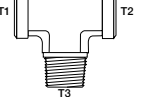
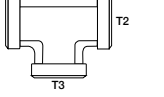
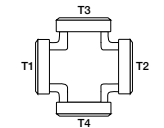
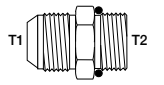
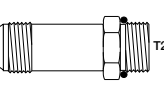
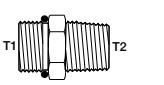
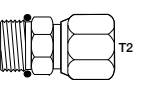
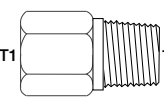
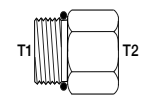
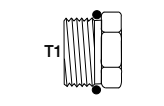
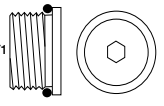
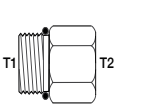
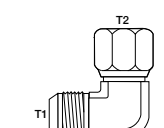
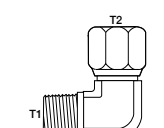
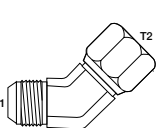
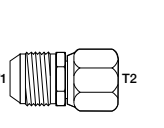
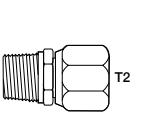
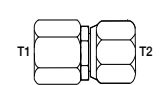
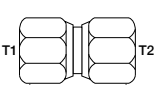
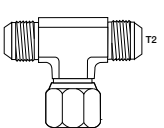
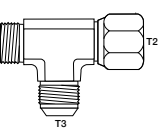
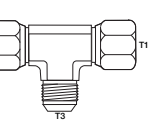
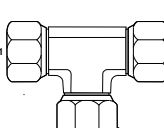
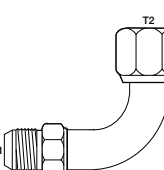
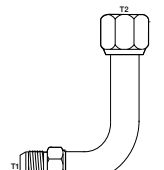
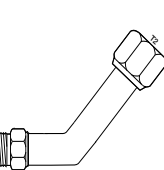
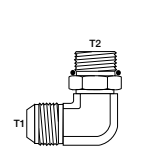
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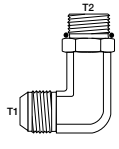
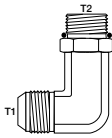
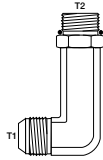
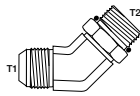
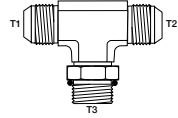
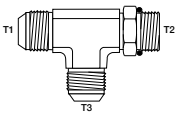
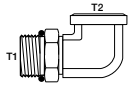
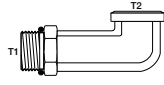
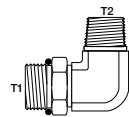
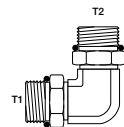
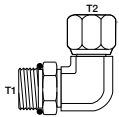
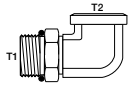
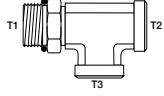
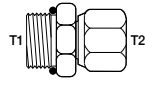
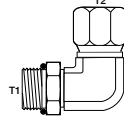
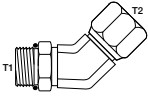
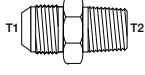
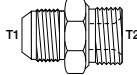
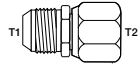
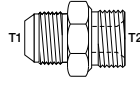
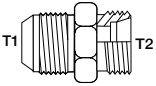
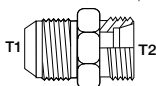
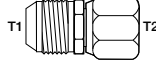
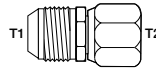
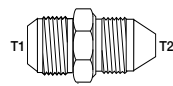
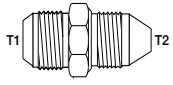
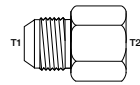
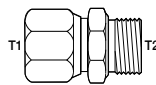
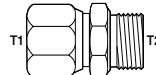
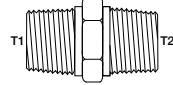
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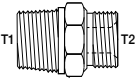
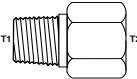
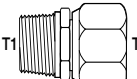
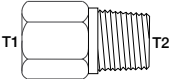
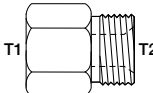
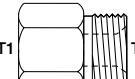
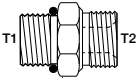
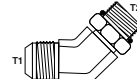
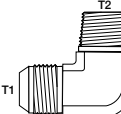
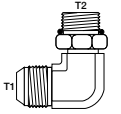
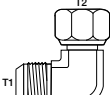
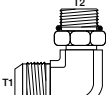
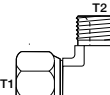
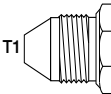
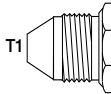


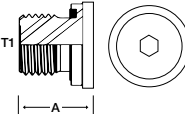

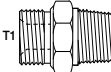
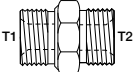
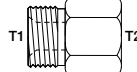
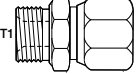

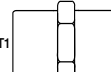
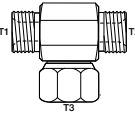
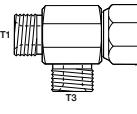
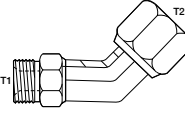
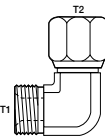
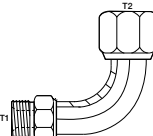
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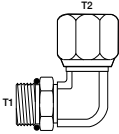
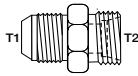
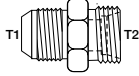
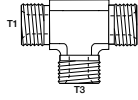
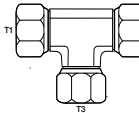
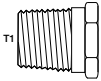

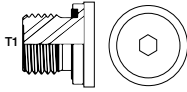
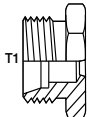
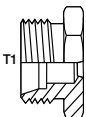
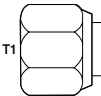
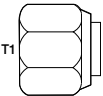
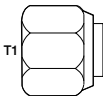



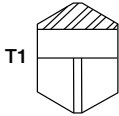
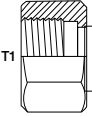
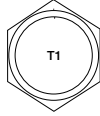
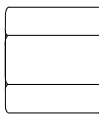
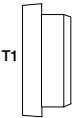
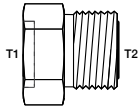
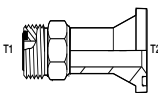
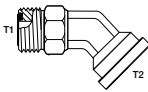
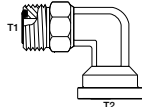
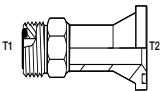
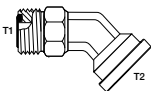
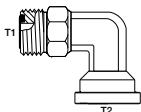
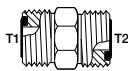
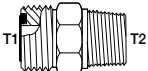
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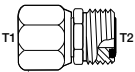
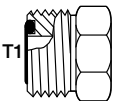
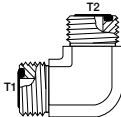
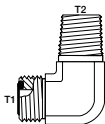
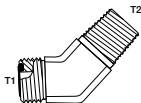
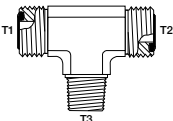
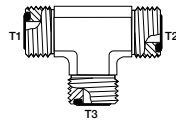
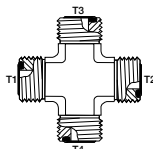
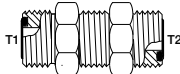
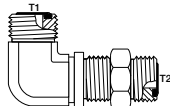
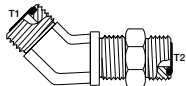
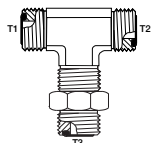
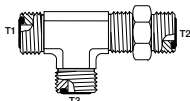
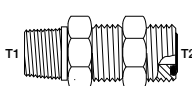
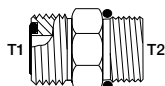
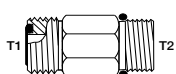

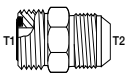
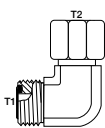
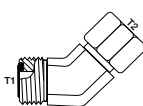
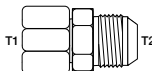
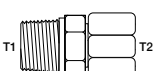
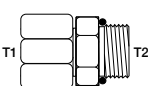
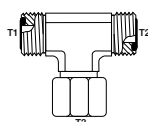
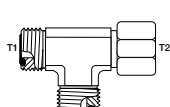
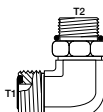
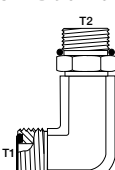
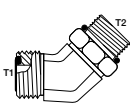
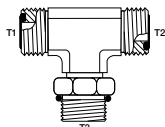
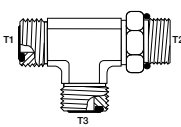
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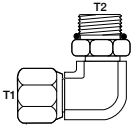
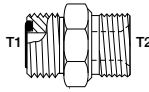
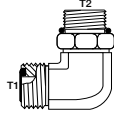
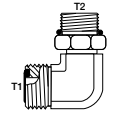
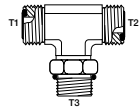
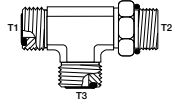
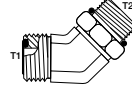
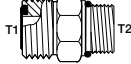
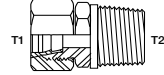
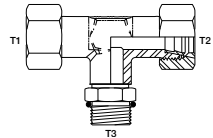
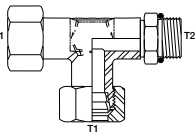
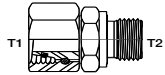
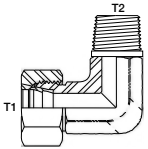
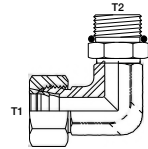
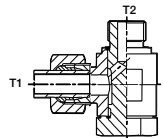
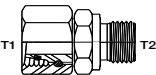
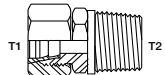
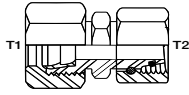
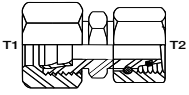
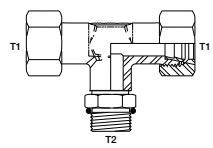
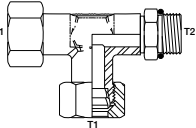
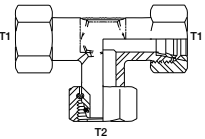
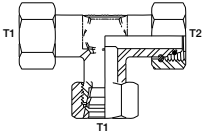
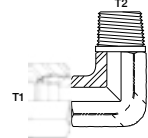
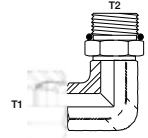
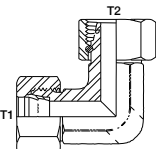
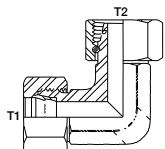
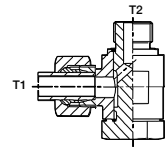
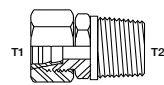
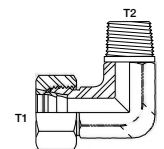
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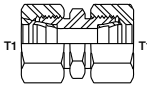
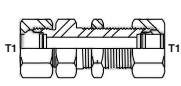
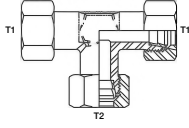
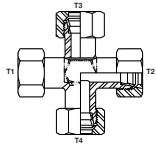
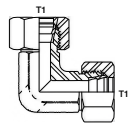
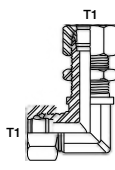

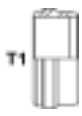
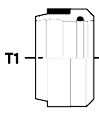
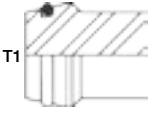
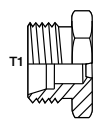
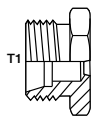
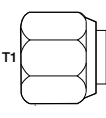
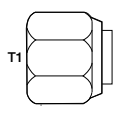
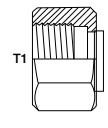
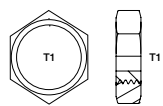
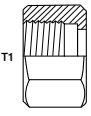
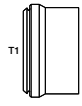
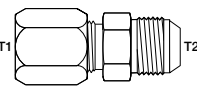
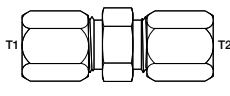
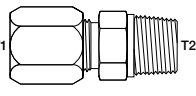
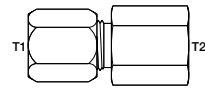
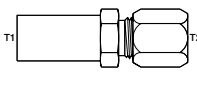
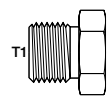
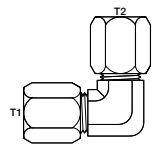
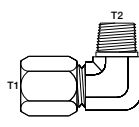
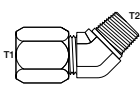
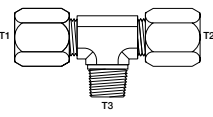
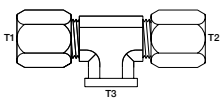
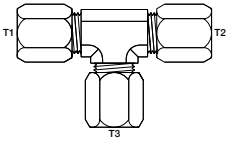
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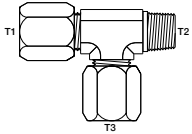
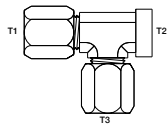
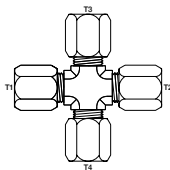
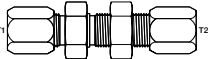
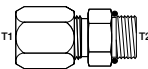
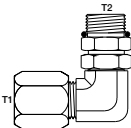
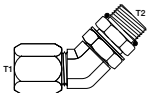
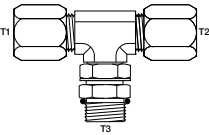
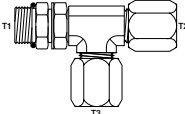
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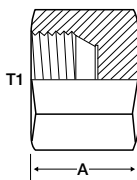
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## 0304C JIC Cap

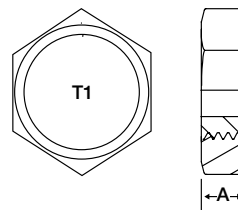
SAE# 070112



Part Number	T1
	FJIC
0304C-02	5/16 - 24
0304C-03	3/8 - 24
0304C-04	7/16 - 20
0304C-05	1/2 - 20
0304C-06	9/16 - 18
0304C-08	3/4 - 16
0304C-10	7/8 - 14
0304C-12	1 1/16 - 12
0304C-14	1 3/16 - 12
0304C-16	1 5/16 - 12
0304C-20	1 5/8 - 12
0304C-24	1 7/8 - 12
0304C-32	2 1/2 - 12

## 0306 JIC Bulkhead Locknut

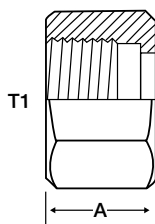
SAE# 51860



Part Number	T1
	FJIC
0306-03	3/8 - 24
0306-04	7/16 - 20
0306-05	1/2 - 20
0306-06	9/16 - 18
0306-08	3/4 - 16
0306-10	7/8 - 14
0306-12	1 1/16 - 12
0306-14	1 3/16 - 12
0306-16	1 5/16 - 12
0306-20	1 5/8 - 12
0306-24	1 7/8 - 1
0306-32	2 1/2 - 12

## 0318 JIC Tube Nut

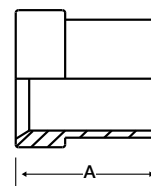
SAE# 070110



Part Number	T1	Tube OD
	FJIC	
0318-02	5/16 - 24	1/8
0318-03	3/8 - 24	3/16
0318-04	7/16 - 20	1/4
0318-05	1/2 - 20	5/16
0318-06	9/16 - 18	3/8
0318-08	3/4 - 16	1/2
0318-10	7/8 - 14	5/8
0318-12	1 1/16 - 12	3/4
0318-14	1 3/16 - 12	3/4
0318-16	1 5/16 - 12	7/8
0318-20	1 5/8 - 12	1
0318-24	1 7/8 - 12	1 1/2
0318-32	2 1/2 - 12	2

## 0319 JIC Tube Sleeve

SAE# 070115

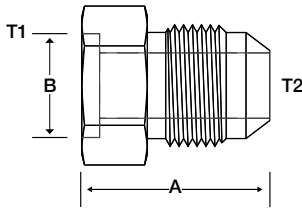


Part Number	Tube OD
0319-02	1/8
0319-03	3/16
0319-04	1/4
0319-05	5/16
0319-06	3/8
0319-08	1/2
0319-10	5/8
0319-12	3/4
0319-14	7/8
0319-16	1
0319-20	1 1/4
0319-24	1 1/2
0319-32	2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# JIC and Pipe

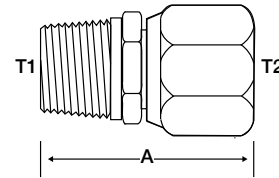
## 0403 BORE - MJ Straight



Part Number	B	T1
	BORE	MJIC
0403-0404	1/4	7/16 - 20
0403-0505	5/16	1/2 - 20
0403-0606	3/8	9/16 - 18
0403-0608	3/8	3/4 - 16
0403-0808	1/2	3/4 - 16
0403-1010	5/8	7/8 - 14
0403-1212	3/4	1 1/16 - 12
0403-1414	7/8	1 3/16 - 12
0403-1616	1	1 5/16 - 12
0403-1620	1	1 5/8 - 12
0403-2016	1 1/4	1 5/16 - 12
0403-2020	1 1/4	1 5/8 - 12
0403-2424	1 1/2	1 7/8 - 12
0403-3232	2	2 1/2 - 12

## 1404 MP - FPX Straight

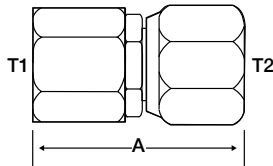
SAE# 140130



Part Number	T1	T2
	MNPT	FNPSM
1404-0204	1/8 - 27	1/4 - 1
1404-0402	1/4 - 18	1/8 - 27
1404-0404	1/4 - 18	1/4 - 18
1404-0406	1/4 - 18	3/8 - 18
1404-0604	3/8 - 18	1/4 - 18
1404-0606	3/8 - 18	3/8 - 18
1404-0608	3/8 - 18	1/2 - 14
1404-0804	1/2 - 14	1/2 - 18
1404-0806	1/2 - 14	3/8 - 18
1404-0808	1/2 - 14	1/2 - 14
1404-0812	1/2 - 14	3/4 - 14
1404-1208	3/4 - 14	1/2 - 14
1404-1212	3/4 - 14	3/4 - 14
1404-1216	3/4 - 14	1 - 11 1/2
1404-1612	1 - 11 1/2	3/4 - 14
1404-1616	1 - 11 1/2	1 - 11 1/2
1404-1620	1 - 11 1/2	1 1/4 - 11 1/2
1404-2016	1 1/4 - 11 1/2	1 - 11 1/2
1404-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1404-2024	1 1/4 - 11 1/2	1 1/2 - 11 1/2
1404-2420	1 1/2 - 11 1/2	1 1/4 - 11 1/2
1404-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
1404-3232	2 - 11 1/2	2 - 11 1/2

## 1405 FP - FPX Straight

SAE# 140131



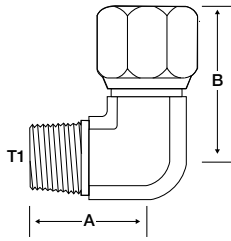
Part Number	T1	T2
	FNPT	FNPSM
1405-0202	1/8 - 27	1/8 - 27
1405-0204	1/8 - 27	1/4 - 18
1405-0404	1/4 - 18	1/4 - 18
1405-0406	1/4 - 18	3/8 - 18
1405-0604	3/8 - 18	1/4 - 18
1405-0606	3/8 - 18	3/8 - 18
1405-0608	3/8 - 18	1/2 - 14
1405-0804	1/2 - 14	1/4 - 18
1405-0806	1/2 - 14	3/8 - 18
1405-0808	1/2 - 14	1/2 - 14
1405-1208	3/4 - 14	1/2 - 14
1405-1212	3/4 - 14	3/4 - 14
1405-1612	1 - 11 1/2	3/4 - 14
1405-1616	1 - 11 1/2	1 - 11 1/2
1405-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1405-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
1405-3232	2 - 11 1/2	2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



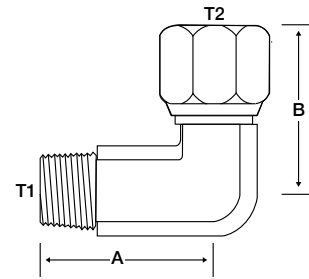
## 1501 MP - FPX 90°

SAE# 140230



Part Number	T1	T2
	MNPT	FNPSM
1501-0202	1/8 - 27	1/8 - 27
1501-0204	1/8 - 27	1/4 - 18
1501-0402	1/4 - 18	1/8 - 27
1501-0404	1/4 - 18	1/4 - 18
1501-0406	1/4 - 18	3/8 - 18
1501-0408	1/4 - 18	1/2 - 14
1501-0604	3/8 - 18	1/4 - 18
1501-0606	3/8 - 18	3/8 - 18
1501-0608	3/8 - 18	1/2 - 14
1501-0804	1/2 - 14	1/4 - 18
1501-0806	1/2 - 14	3/8 - 18
1501-0808	1/2 - 14	1/2 - 14
1501-0812	1/2 - 14	3/4 - 14
1501-1206	3/4 - 14	3/8 - 18
1501-1208	3/4 - 14	1/2 - 14
1501-1212	3/4 - 14	3/4 - 14
1501-1216	3/4 - 14	1 - 11 1/2
1501-1608	1 - 11 1/2	1/2 - 14
1501-1612	1 - 11 1/2	3/4 - 14
1501-1616	1 - 11 1/2	1 - 11 1/2
1501-1620	1 - 11 1/2	1 1/4 - 11 1/2
1501-2016	1 1/4 - 11 1/2	1 - 11 1/2
1501-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1501-2024	1 1/4 - 11 1/2	1 1/2 - 11 1/2
1501-2420	1 1/2 - 11 1/2	1 1/4 - 11 1/2
1501-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
1501-3232	2 - 11 1/2	2 - 11 1/2

## 1501LL MP - FPX 90° X-Long



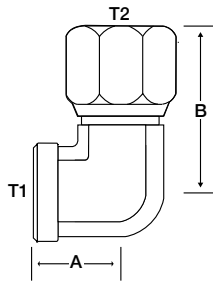
Part Number	T1	T2
	MNPT	FNPSM
1501LL-0202	1/8 - 27	1/8 - 27
1501LL-0404	1/4 - 18	1/4 - 18
1501LL-0606	3/8 - 18	3/8 - 18
1501LL-0808	1/2 - 14	1/2 - 14
1501LL-1212	3/4 - 14	3/4 - 14
1501LL-1616	1 - 11 1/2	1 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# JIC and Pipe

## 1502 FP - FPX 90°

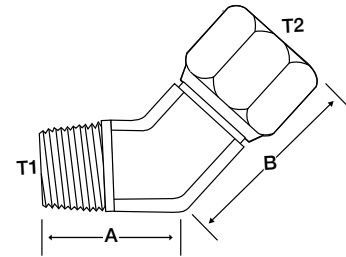
SAE# 140231



Part Number	T1	T2
	FNPT	FNPSM
1502-0202	1/8 - 27	1/8 - 27
1502-0402	1/4 - 18	1/8 - 27
1502-0404	1/4 - 18	1/4 - 18
1502-0406	1/4 - 18	3/8 - 18
1502-0604	3/8 - 18	1/4 - 18
1502-0606	3/8 - 18	3/8 - 18
1502-0608	3/8 - 18	1/2 - 14
1502-0804	3/4 - 16	1/4 - 18
1502-0806	1/2 - 14	3/8 - 18
1502-0808	1/2 - 14	1/2 - 14
1502-0812	1/2 - 14	3/4 - 14
1502-1208	3/4 - 14	1/2 - 14
1502-1212	3/4 - 14	3/4 - 14
1502-1216	3/4 - 14	1 - 11 1/2
1502-1612	1 - 11 1/2	3/4 - 14
1502-1616	1 - 11 1/2	1 - 11 1/2
1502-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1502-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
1502-3232	2 - 11 1/2	2 - 11 1/2

## 1503 MP - FPX 45°

SAE# 140330

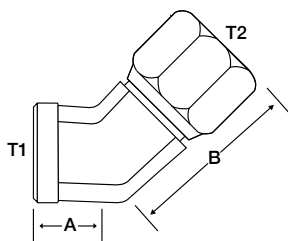


Part Number	T1	T2
	MNPT	FNPSM
1503-0202	1/8 - 27	1/8 - 27
1503-0204	1/8 - 27	1/4 - 18
1503-0404	1/4 - 18	1/4 - 18
1503-0406	1/4 - 18	3/8 - 18
1503-0604	3/8 - 18	1/4 - 18
1503-0606	3/8 - 18	3/8 - 18
1503-0608	3/8 - 18	1/2 - 14
1503-0804	1/2 - 14	1/4 - 18
1503-0806	1/2 - 14	3/8 - 18
1503-0808	1/2 - 14	1/2 - 14
1503-0812	1/2 - 14	3/4 - 14
1503-1208	3/4 - 14	1/2 - 14
1503-1212	3/4 - 14	3/4 - 14
1503-1216	3/4 - 14	1 - 11 1/2
1503-1612	1 - 11 1/2	3/4 - 14
1503-1616	1 - 11 1/2	1 - 11 1/2
1503-1620	1 - 11 1/2	1 1/4 - 11 1/2
1503-2016	1 1/4 - 11 1/2	1 - 11 1/2
1503-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1503-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
1503-3232	2 - 11 1/2	2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

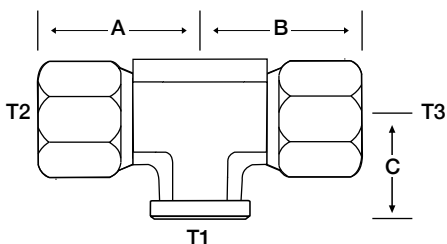
## 1504 FP - FPX 45°

SAE# 140331



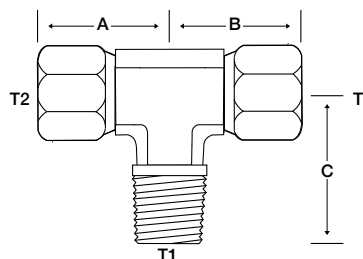
Part Number	T1	T2
	FNPT	FNPSM
1504-0202	1/8 - 27	1/8 - 27
1504-0404	1/4 - 18	1/4 - 18
1504-0604	3/8 - 18	1/4 - 18
1504-0606	3/8 - 18	3/8 - 18
1504-0806	1/2 - 14	3/8 - 18
1504-0808	1/2 - 14	1/2 - 14
1504-1212	3/4 - 14	3/4 - 14
1504-1612	1 - 11 1/2	3/4 - 14
1504-1616	1 - 11 1/2	1 - 11 1/2
1504-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1504-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

## 1602 FP - FPX - FPX - Tee



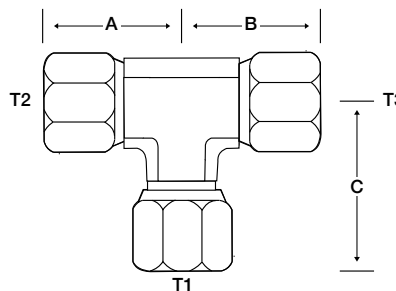
Part Number	T1	T2 / T3
	FNPT	FNPSM
1602-020202	1/8 - 27	1/8 - 27
1602-040404	1/4 - 18	1/4 - 18
1602-060606	3/8 - 18	3/8 - 18
1602-080606	1/2 - 14	3/8 - 18
1602-080808	1/2 - 14	1/2 - 14
1602-120808	3/4 - 14	1/2 - 14
1602-121212	3/4 - 14	3/4 - 14
1602-161616	1 - 11 1/2	1 - 11 1/2
1602-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2

## 1601 MP - FPX - FPX Tee



Part Number	T1	T2 / T3
	MNPT	FNPSM
1601-020202	1/8 - 27	1/8 - 27
1601-040404	1/4 - 18	1/4 - 18
1601-040606	1/4 - 18	3/8 - 18
1601-060404	3/8 - 18	1/4 - 18
1601-060606	3/8 - 18	3/8 - 18
1601-080404	1/2 - 14	1/4 - 18
1601-080606	1/2 - 14	3/8 - 18
1601-080808	1/2 - 14	1/2 - 14
1601-120808	3/4 - 14	1/2 - 14
1601-121212	3/4 - 14	3/4 - 14
1601-121616	3/4 - 14	1 - 11 1/2
1601-161212	1 - 11 1/2	3/4 - 14
1601-161616	1 - 11 1/2	1 - 11 1/2
1601-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
1601-242424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

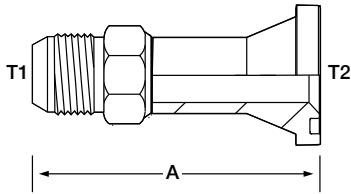
## 1603 FPX - FPX - FPX Tee



Part Number	T1	T2 / T3
	FNPSM	FNPSM
1603-020202	1/8 - 27	1/8 - 27
1603-040404	1/4 - 18	1/4 - 18
1603-060606	3/8 - 18	3/8 - 18
1603-080808	1/2 - 14	3/4 - 14
1603-121212	3/4 - 14	1 - 11 1/2
1603-161616	1 - 11 1/2	1 1/4 - 11 1/2
1603-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2

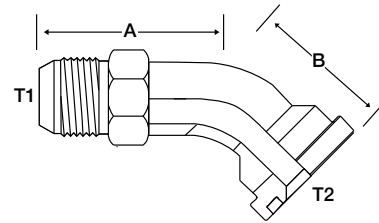
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 1700 MJ - Flange (61)



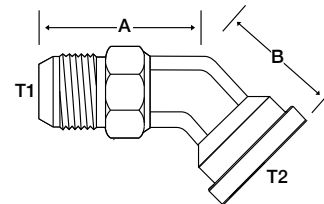
Part Number	T1	T2
	MJIC	Code 61
1700-0808	3/4 - 16	1/2
1700-0812	3/4 - 16	3/4
1700-1212	1 1/16 - 12	3/4
1700-1216	1 1/16 - 12	1
1700-1220	1 1/16 - 12	1 1/4
1700-1612	1 5/16 - 12	3/4
1700-1616	1 5/16 - 12	1
1700-1620	1 5/16 - 12	1 1/4
1700-1624	1 5/16 - 12	1 1/2
1700-2016	1 5/8 - 12	1
1700-2020	1 5/8 - 12	1 1/4
1700-2024	1 5/8 - 12	1 1/2
1700-2032	1 5/8 - 12	2
1700-2420	1 7/8 - 12	1 1/4
1700-2424	1 7/8 - 12	1 1/2
1700-2432	1 7/8 - 12	2
1700-3224	2 1/2 - 12	1 1/2
1700-3232	2 1/2 - 12	2

## 1703 MJ - Flange (61) 45°



Part Number	T1	T2
	MJIC	Code 61
1703-0808	3/4 - 16	1/2
1703-0812	3/4 - 16	3/4
1703-1212	1 1/16 - 12	3/4
1703-1216	1 1/16 - 12	1
1703-1220	1 1/16 - 12	1 1/4
1703-1612	1 5/16 - 12	3/4
1703-1616	1 5/16 - 12	1
1703-1620	1 5/16 - 12	1 1/4
1703-1624	1 5/16 - 12	1 1/2
1703-2012	1 5/8 - 12	3/4
1703-2016	1 5/8 - 12	1
1703-2020	1 5/8 - 12	1 1/4
1703-2024	1 5/8 - 12	1 1/2
1703-2420	1 7/8 - 12	1 1/4
1703-2424	1 7/8 - 12	1 1/2
1703-2432	1 7/8 - 12	2
1703-3232	2 1/2 - 12	2

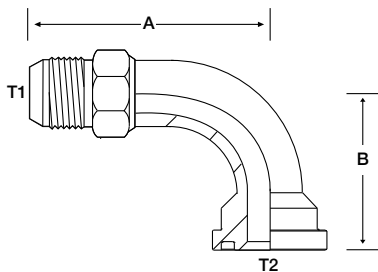
## 1703FG MJ - Flange (61) 45° Forged



Part Number	T1	T2
	MJIC	Code 61
1703-1212FG	1 1/16 - 12	3/4
1703-1616FG	1 5/16 - 12	1
1703-2020FG	1 5/8 - 12	1 1/4
1703-2424FG	1 7/8 - 12	1 1/2
1703-3232FG	2 1/2 - 12	2

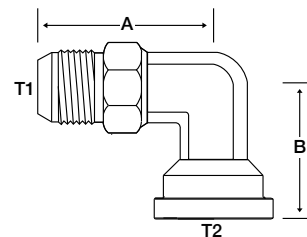
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 1704 MJ - Flange (61) 90°



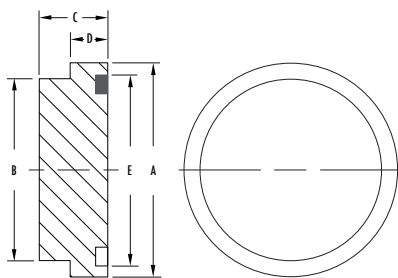
Part Number	T1	T2
	MJIC	Code 61
1704-0808	3/4 - 16	1/2
1704-0812	3/4 - 16	3/4
1704-1212	1 1/16 - 12	3/4
1704-1216	1 1/16 - 12	1
1704-1220	1 1/16 - 12	1 1/4
1704-1612	1 5/16 - 12	3/4
1704-1616	1 5/16 - 12	1
1704-1620	1 5/16 - 12	1 1/4
1704-1624	1 5/16 - 12	1 1/2
1704-2016	1 5/8 - 12	1
1704-2020	1 5/8 - 12	1 1/4
1704-2024	1 5/8 - 12	1 1/2
1704-2420	1 7/8 - 12	1 1/4
1704-2424	1 7/8 - 12	1 1/2
1704-2432	1 7/8 - 12	2
1704-3224	2 1/2 - 12	1 1/2
1704-3232	2 1/2 - 12	2

## 1704FG MJ - Flange (61) 90° Forged



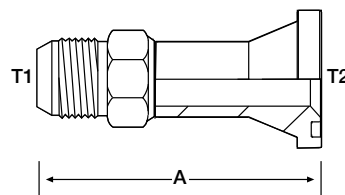
Part Number	T1	T2
	MJIC	Code 61
1704-0812FG	3/4 - 16	3/4
1704-1212FG	1 1/16 - 12	3/4
1704-1216FG	1 1/16 - 12	1
1704-1612FG	1 5/16 - 12	3/4
1704-1616FG	1 5/16 - 12	1
1704-1620FG	1 5/16 - 12	1 1/4
1704-2016FG	1 5/8 - 12	1
1704-2020FG	1 5/8 - 12	1 1/4
1704-2424FG	1 7/8 - 12	1 1/2
1704-2432FG	1 7/8 - 12	2
1704-3224FG	2 1/2 - 12	1 1/2
1704-3232FG	2 1/2 - 12	2

## 1724 Flange (61) Plug



Part Number	A	B	D
1724-08	1.188	.924	.265
1724-12	1.500	1.234	.265
1724-16	1.750	1.484	.315
1724-20	2.000	1.684	.315
1724-24	2.375	1.964	.315
1724-32	2.810	2.434	.375
1724-40	3.312	2.904	.375
1724-48	4.000	3.534	.375

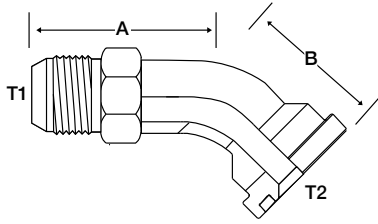
## 1800 MJ - Flange (62)



Part Number	T1	T2
	MJIC	Code 61
1800-0808	3/4 - 16	1/2
1800-1212	1 1/16 - 12	3/4
1800-1216	1 1/16 - 12	1
1800-1612	1 5/16 - 12	3/4
1800-1616	1 5/16 - 12	1
1800-1620	1 5/16 - 12	1 1/4
1800-1624	1 5/16 - 12	1 1/2
1800-2016	1 5/8 - 12	1
1800-2020	1 5/8 - 12	1 1/4
1800-2024	1 5/8 - 12	1 1/2
1800-2420	1 7/8 - 12	1 1/4
1800-2424	1 7/8 - 12	1 1/2
1800-3232	2 1/2 - 12	2

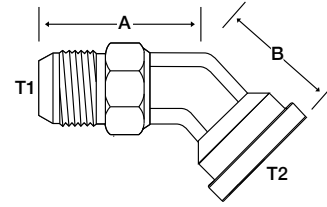
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 1803 MJ - Flange (62) 45°



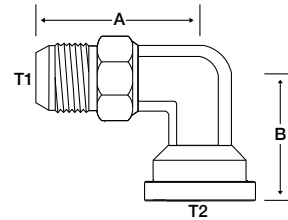
Part Number	T1	T2
	MJIC	Code 62
1803-0808	3/4 - 16	1/2
1803-1212	1 1/16 - 12	3/4
1803-1216	1 1/16 - 12	1
1803-1612	1 5/16 - 12	3/4
1803-1616	1 5/16 - 12	1
1803-1620	1 5/16 - 12	1 1/4
1803-1624	1 5/16 - 12	1 1/2
1803-2016	1 5/8 - 12	1
1803-2020	1 5/8 - 12	1 1/4
1803-2024	1 5/8 - 12	1 1/2
1803-2424	1 7/8 - 12	1 1/2
1803-3232	2 1/2 - 12	2

## 1803FG MJ - Flange (62) 45° Forged

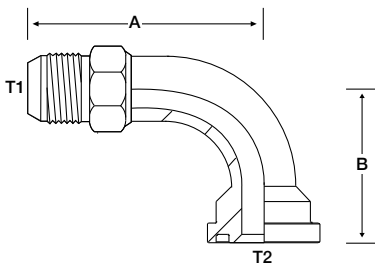


Part Number	T1	T2
	MJIC	Code 62
1803-1212FG	1 1/16 - 12	3/4
1803-1616FG	1 5/16 - 12	1
1803-2020FG	1 5/8 - 12	1 1/4
1803-2424FG	1 7/8 - 12	1 1/2
1803-3232FG	2 1/2 - 12	2

## 1804FG MJ - Flange (62) 90° Forged



## 1804 MJ - Flange (62) 90°

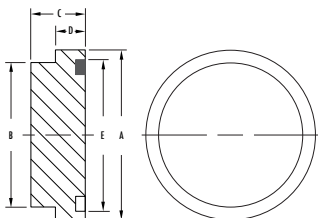


Part Number	T1	T2
	MJIC	Code 62
1804-0808	3/4 - 16	1/2
1804-1212	1 1/16 - 12	3/4
1804-1616	1 5/16 - 12	1
1804-1620	1 5/16 - 12	1 1/4
1804-1624	1 5/16 - 12	1 1/2
1804-2016	1 5/8 - 12	1
1804-2020	1 5/8 - 12	1 1/4
1804-2024	1 5/8 - 12	1 1/2
1804-2416	1 7/8 - 12	1
1804-2420	1 7/8 - 12	1 1/4
1804-2424	1 7/8 - 12	1 1/2
1804-3232	2 1/2 - 12	2

Part Number	T1	T2
	MJIC	Code 62
1804-0808FG	3/4 - 16	1/2
1804-0812FG	3/4 - 16	3/4
1804-1212FG	1 1/16 - 12	3/4
1804-1216FG	1 1/16 - 12	1
1804-1612FG	1 5/16 - 12	3/4
1804-1616FG	1 5/16 - 12	1
1804-1620FG	1 5/16 - 12	1 1/4
1804-2016FG	1 5/8 - 12	1
1804-2020FG	1 5/8 - 12	1 1/4
1804-2024FG	1 5/8 - 12	1 1/2
1804-2420FG	1 7/8 - 12	1 1/4
1804-2424FG	1 7/8 - 12	1 1/2
1804-2432FG	1 7/8 - 12	2
1804-3224FG	2 1/2 - 12	1 1/2
1804-3232FG	2 1/2 - 12	2

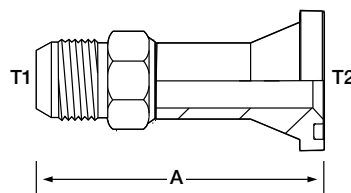
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 1824 Flange (62) Plug



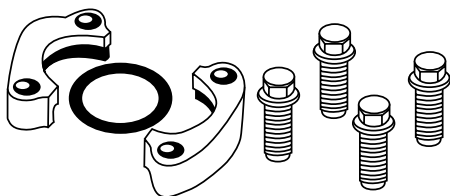
Part Number	A	B	D
1824-12	1.625	1.234	.345
1824-16	1.875	1.484	.375
1824-20	2.125	1.704	.405
1824-24	2.500	1.984	.495
1824-32	3.125	2.604	.495

## 1850 MJ - Flange CAT



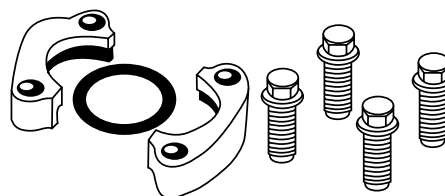
Part Number	T1	T2
	MJIC	CAT
1850-1212	1 <sup>1</sup> / <sub>16</sub> - 12	3/4
1850-1616	1 <sup>5</sup> / <sub>16</sub> - 12	1
1850-2020	1 <sup>5</sup> / <sub>8</sub> - 12	1 <sup>1</sup> / <sub>4</sub>
1850-2424	1 <sup>7</sup> / <sub>8</sub> - 12	1 <sup>1</sup> / <sub>2</sub>

## 1901 Split Flange Kit (61)



Part Number	Size
	Code 61
1901-08-K	1/2
1901-12-K	3/4
1901-16-K	1
1901-20-K	1 <sup>1</sup> / <sub>4</sub>
1901-24-K	1 <sup>1</sup> / <sub>2</sub>
1901-32-K	2
1901-40-K	2 <sup>1</sup> / <sub>2</sub>
1901-48-K	3
1901-56-K	3 <sup>1</sup> / <sub>2</sub>
1901-64-K	4

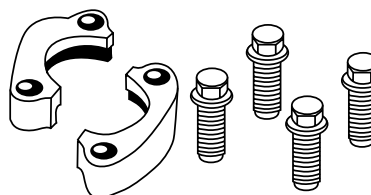
## 1902 Split Flange Kit (62)



Part Number	Size
	Code 62
1902-08-K	1/2
1902-12-K	3/4
1902-16-K	1
1902-20-K	1 <sup>1</sup> / <sub>4</sub>
1902-24-K	1 <sup>1</sup> / <sub>2</sub>
1902-32-K	2

## 1903 Split Flange Kit (Cat)

D-ring not included.

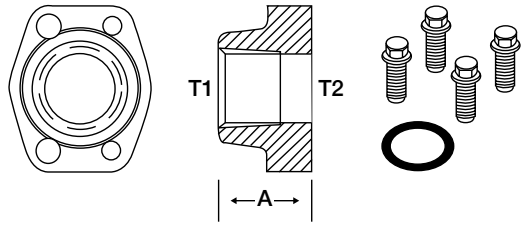


Part Number	Size
	CAT
1903-08-K	1/2
1903-12-K	3/4
1903-16-K	1
1903-20-K	1 <sup>1</sup> / <sub>4</sub>
1903-24-K	1 <sup>1</sup> / <sub>2</sub>
1903-32-K	2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

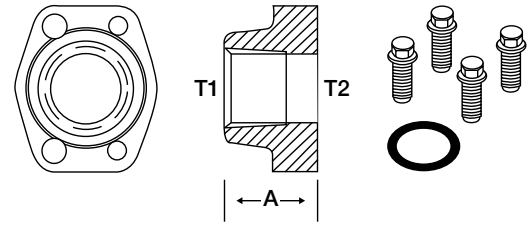
# JIC and Pipe

## 1927-61 FP - Flange Kit (61)



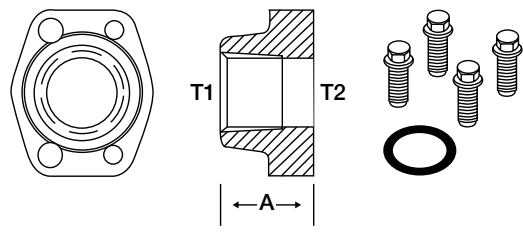
Part Number	T1	T2
	FNPT	Code 61
1927-1212-K	3/4 - 14	3/4
1927-1616-K	1 - 11 1/2	1
1927-2020-K	1 1/4 - 11 1/2	1 1/4
1927-2424-K	1 1/2 - 11 1/2	1 1/2
1927-3232-K	2 - 11 1/2	2
1927-4040-K	2 1/2 - 8	2 1/2
1927-4848-K	3 - 8	3
1927-6464-K	4 - 8	4

## 1928-62 FP - Flange Kit (62)



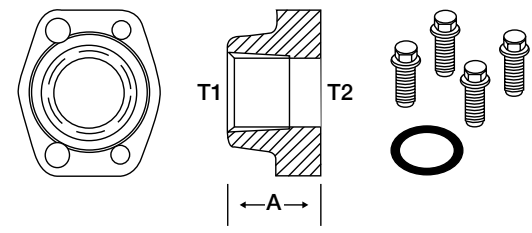
Part Number	T1	T2
	FNPT	Code 62
1928-1212-K	3/4 - 14	3/4
1928-1616-K	1 - 11 1/2	1
1928-2020-K	1 1/4 - 11 1/2	1 1/4
1928-2424-K	1 1/2 - 11 1/2	1 1/2
1928-3232-K	2 - 11 1/2	2
1928-4040-K	2 1/2 - 8	2 1/2
1928-4848-K	3 - 8	3

## 1929-61 FORB - Flange Kit (61)



Part Number	T1	T2
	FORB	Code 61
1929-61-1212-K	1 1/16 - 12	3/4
1929-61-1616-K	1 5/16 - 12	1
1929-61-2020-K	1 5/8 - 12	1 1/4
1929-61-2424-K	1 7/8 - 12	1 1/2
1929-61-3232-K	2 1/2 - 12	2

## 1929-62 FORB - Flange Kit (62)

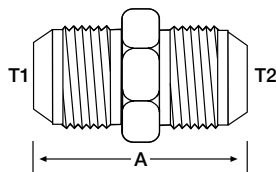


Part Number	T1	T2
	FORB	Code 62
1929-62-1212-K	1 1/16 - 12	3/4
1929-62-1616-K	1 5/16 - 12	1
1929-62-2020-K	1 5/8 - 12	1 1/4
1929-62-2424-K	1 7/8 - 12	1 1/2
1929-62-3232-K	2 1/2 - 12	2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

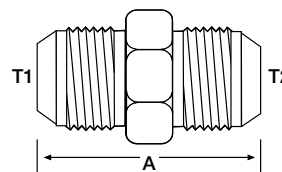


## 2403 MJ - MJ



Part Number	T1	T2
	MJIC	MJIC
2403-0202	5/16 - 24	5/16 - 24
2403-0303	3/8 - 24	3/8 - 24
2403-0402	7/16 - 20	5/16 - 24
2403-0404	7/16 - 20	7/16 - 20
2403-0505	1/2 - 20	1/2 - 20
2403-0604	9/16 - 18	7/16 - 20
2403-0606	9/16 - 18	9/16 - 18
2403-0804	3/4 - 16	7/16 - 20
2403-0806	3/4 - 16	9/16 - 18
2403-0808	3/4 - 16	3/4 - 16
2403-1004	7/8 - 14	7/16 - 20
2403-1006	7/8 - 14	9/16 - 18
2403-1008	7/8 - 14	3/4 - 16
2403-1010	7/8 - 14	7/8 - 14
2403-1208	1 1/16 - 12	3/4 - 16
2403-1210	1 1/16 - 12	7/8 - 14
2403-1212	1 1/16 - 12	1 1/16 - 12
2403-1414	1 1/16 - 12	1 3/16 - 12
2403-1608	1 5/16 - 12	3/4 - 16
2403-1610	1 5/16 - 12	7/8 - 14
2403-1612	1 5/16 - 12	1 1/16 - 12
2403-1616	1 5/16 - 12	1 5/16 - 12
2403-2012	1 5/8 - 12	1 1/16 - 12
2403-2016	1 5/8 - 12	1 5/16 - 12
2403-2020	1 5/8 - 12	1 5/8 - 12
2403-2412	1 7/8 - 12	1 1/16 - 12
2403-2416	1 7/8 - 12	1 5/16 - 12
2403-2420	1 7/8 - 12	1 5/8 - 12
2403-2424	1 7/8 - 12	1 7/8 - 12
2403-3232	2 1/2 - 12	2 1/2 - 12

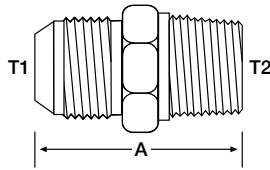
## 2403LH MJ - MJ Large Hex



Part Number	T1	T2
	MJIC	MJIC
2403LH-0404	7/16 - 20	7/16 - 20
2403LH-0606	9/16 - 18	9/16 - 18
2403LH-0808	3/4 - 16	3/4 - 16
2403LH-1212	1 1/16 - 12	1 1/16 - 12
2403LH-1616	1 5/16 - 12	1 5/16 - 12
2403LH-2020	1 5/8 - 12	1 5/8 - 12

## 2404 MJ - MP Straight

SAE# 070102

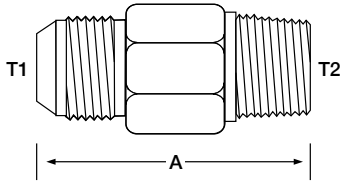


Part Number	T1	T2
	MJIC	MNPT
2404-0202	5/16 - 24	1/8 - 27
2404-0204	5/16 - 24	1/4 - 18
2404-0302	3/8 - 24	1/8 - 27
2404-0402	7/16 - 20	1/8 - 27
2404-0404	7/16 - 20	1/4 - 18
2404-0406	7/16 - 20	3/8 - 18
2404-0408	7/16 - 20	1/2 - 14
2404-0502	1/2 - 20	1/8 - 27
2404-0504	1/2 - 20	1/4 - 18
2404-0506	1/2 - 20	3/8 - 18
2404-0602	9/16 - 18	1/8 - 27
2404-0604	9/16 - 18	1/4 - 18
2404-0606	9/16 - 18	3/8 - 18
2404-0608	9/16 - 18	1/2 - 14
2404-0612	9/16 - 18	3/4 - 14
2404-0802	3/4 - 16	1/8 - 27
2404-0804	3/4 - 16	1/4 - 18
2404-0806	3/4 - 16	3/8 - 18
2404-0808	3/4 - 16	1/2 - 14
2404-0812	3/4 - 16	3/4 - 14
2404-0816	3/4 - 16	1 - 11 1/2
2404-1004	7/8 - 14	1/4 - 18
2404-1006	7/8 - 14	3/8 - 18
2404-1008	7/8 - 14	1/2 - 14
2404-1012	7/8 - 14	3/4 - 14
2404-1206	1 1/16 - 12	3/8 - 18
2404-1208	1 1/16 - 12	1/2 - 14
2404-1212	1 1/16 - 12	3/4 - 14
2404-1216	1 1/16 - 12	1 - 11 1/2
2404-1220	1 1/16 - 12	1 1/4 - 11 1/2
2404-1224	1 1/16 - 12	1 1/2 - 11 1/2
2404-1408	1 3/16 - 12	1/2 - 14
2404-1412	1 3/16 - 12	3/4 - 14
2404-1608	1 5/16 - 12	1/2 - 14

Part Number	T1	T2
	MJIC	MNPT
2404-1612	1 5/16 - 12	3/4 - 14
2404-1616	1 5/16 - 12	1 - 11 1/2
2404-1620	1 5/16 - 12	1 1/4 - 11 1/2
2404-1624	1 5/16 - 12	1 1/2 - 11 1/2
2404-2012	1 5/8 - 12	3/4 - 14
2404-2016	1 5/8 - 12	1 - 11 1/2
2404-2020	1 5/8 - 12	1 1/4 - 11 1/2
2404-2024	1 5/8 - 12	1 1/2 - 11 1/2
2404-2032	1 5/8 - 12	2 - 11 1/2
2404-2416	1 7/8 - 12	1 - 11 1/2
2404-2420	1 7/8 - 12	1 1/4 - 11 1/2
2404-2424	1 7/8 - 12	1 1/2 - 11 1/2
2404-2432	1 7/8 - 12	2 - 11 1/2
2404-3220	2 1/2 - 12	1 1/4 - 11 1/2
2404-3224	2 1/2 - 12	1 1/2 - 11 1/2
2404-3232	2 1/2 - 12	2 - 11 1/2

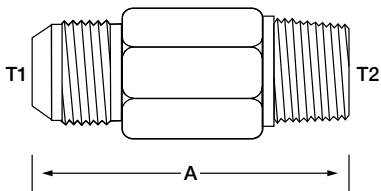
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2404L MJ - MP Long



Part Number	T1	T2
	MJIC	MNPT
2404L-0402	7/16 - 20	1/8 - 27
2404L-0404	7/16 - 20	1/4 - 18
2404L-0502	1/2 - 20	1/8 - 27
2404L-0504	1/2 - 20	1/4 - 18
2404L-0602	9/16 - 18	1/8 - 27
2404L-0604	9/16 - 18	1/4 - 18
2404L-0606	9/16 - 18	3/8 - 18
2404L-0608	9/16 - 18	1/2 - 14
2404L-0804	3/4 - 16	1/4 - 18
2404L-0806	3/4 - 16	3/8 - 18
2404L-0808	3/4 - 16	1/2 - 14
2404L-1008	7/8 - 14	1/2 - 14
2404L-1212	1 1/16 - 12	3/4 - 14
2404L-1612	1 5/16 - 12	3/4 - 14
2404L-1616	1 5/16 - 12	1 - 11 1/2
2404L-2020	1 5/8 - 12	1 1/4 - 11 1/2
2404L-2424	1 7/8 - 12	1 1/2 - 11 1/2
2404L-3232	2 1/2 - 12	2 - 11 1/2

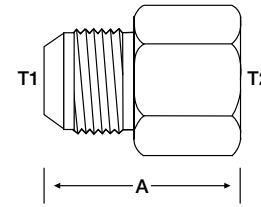
## 2404LL MJ - MP X-Long



Part Number	T1	T2
	MJIC	MNPT
2404LL-0402	7/16 - 20	1/8 - 27
2404LL-0404	7/16 - 20	1/4 - 18
2404LL-0502	1/2 - 20	1/8 - 27
2404LL-0604	9/16 - 18	1/4 - 18
2404LL-0606	9/16 - 18	3/8 - 18
2404LL-0806	3/4 - 16	3/8 - 18
2404LL-0808	3/4 - 16	1/2 - 14
2404LL-1008	7/8 - 14	1/2 - 14
2404LL-1212	1 1/16 - 12	3/4 - 14
2404LL-1616	1 5/16 - 12	1 - 11 1/2

## 2405 MJ - FP Straight

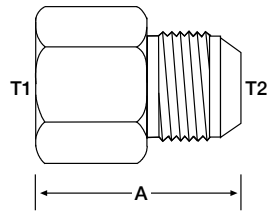
SAE# 070103



Part Number	T1	T2
	MJIC	FNPT
2405-0202	5/16 - 24	1/8 - 27
2405-0302	3/8 - 24	1/8 - 27
2405-0402	7/16 - 20	1/8 - 27
2405-0404	7/16 - 20	1/4 - 18
2405-0406	7/16 - 20	3/8 - 18
2405-0408	7/16 - 20	1/2 - 14
2405-0502	1/2 - 20	1/8 - 27
2405-0504	1/2 - 20	1/4 - 18
2405-0602	9/16 - 18	1/8 - 27
2405-0604	9/16 - 18	1/4 - 18
2405-0606	9/16 - 18	3/8 - 18
2405-0608	9/16 - 18	1/2 - 14
2405-0804	3/4 - 16	1/4 - 18
2405-0806	3/4 - 16	3/8 - 18
2405-0808	3/4 - 16	1/2 - 14
2405-0812	3/4 - 16	3/4 - 14
2405-1006	7/8 - 14	3/8 - 18
2405-1008	7/8 - 14	1/2 - 14
2405-1012	7/8 - 14	3/4 - 14
2405-1016	7/8 - 14	1 - 11 1/2
2405-1208	1 1/16 - 12	1/2 - 14
2405-1212	1 1/16 - 12	3/4 - 14
2405-1216	1 1/16 - 12	1 - 11 1/2
2405-1412	1 3/16 - 12	3/4 - 14
2405-1612	1 5/16 - 12	3/4 - 14
2405-1616	1 5/16 - 12	1 - 11 1/2
2405-1620	1 5/8 - 12	1 1/4 - 11 1/2
2405-2016	1 5/8 - 12	1 - 11 1/2
2405-2020	1 5/8 - 12	1 1/4 - 11 1/2
2405-2024	1 5/8 - 12	1 1/2 - 11 1/2
2405-2420	1 7/8 - 12	1 1/4 - 11 1/2
2405-2424	1 7/8 - 12	1 1/2 - 11 1/2
2405-3232	2 1/2 - 12	2 - 11 1/2

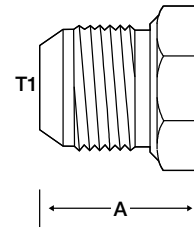
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2406 FJ - MJ Straight



## 2408 MJ Plug

SAE# 070109



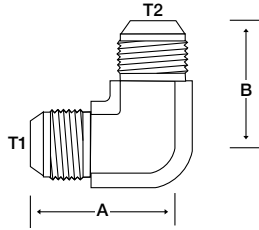
Part Number	T1	T2
	FJIC	MJIC
2406-0402	7/16 - 20	5/16 - 24
2406-0406	7/16 - 20	9/16 - 18
2406-0408	7/16 - 20	3/4 - 16
2406-0604	9/16 - 18	7/16 - 20
2406-0608	9/16 - 18	3/4 - 16
2406-0804	3/4 - 16	7/16 - 20
2406-0806	3/4 - 16	9/16 - 18
2406-0810	3/4 - 16	7/8 - 14
2406-0812	3/4 - 16	1 1/16 - 12
2406-1004	7/8 - 14	7/16 - 20
2406-1006	7/8 - 14	9/16 - 18
2406-1008	7/8 - 14	3/4 - 16
2406-1012	7/8 - 14	1 1/16 - 12
2406-1204	1 1/16 - 12	7/16 - 20
2406-1206	1 1/16 - 12	9/16 - 18
2406-1208	1 1/16 - 12	3/4 - 16
2406-1210	1 1/16 - 12	7/8 - 14
2406-1216	1 1/16 - 12	1 5/16 - 12
2406-1406	1 3/16 - 12	9/16 - 18
2406-1408	1 3/16 - 12	3/4 - 16
2406-1410	1 3/16 - 12	7/8 - 14
2406-1412	1 3/16 - 12	1 1/16 - 12
2406-1604	1 5/16 - 12	7/16 - 20
2406-1606	1 5/16 - 12	9/16 - 18
2406-1608	1 5/16 - 12	3/4 - 16
2406-1610	1 5/16 - 12	7/8 - 14
2406-1612	1 5/16 - 12	1 1/16 - 12
2406-1620	1 5/16 - 12	1 5/8 - 12
2406-1624	1 5/16 - 12	1 7/8 - 12
2406-2012	1 5/8 - 12	1 1/16 - 12
2406-2016	1 5/8 - 12	1 5/16 - 12
2406-2024	1 5/8 - 12	1 7/8 - 12
2406-2416	1 7/8 - 12	1 5/16 - 12
2406-2420	1 7/8 - 12	1 5/8 - 12
2406-2432	1 7/8 - 12	2 1/2 - 12
2406-3224	2 1/2 - 12	1 7/8 - 12

Part Number	T1
	MJIC
2408-02	5/16 - 24
2408-03	3/8 - 24
2408-04	7/16 - 20
2408-05	1/2 - 20
2408-06	9/16 - 18
2408-08	3/4 - 16
2408-10	7/8 - 14
2408-12	1 1/16 - 12
2408-14	1 3/16 - 12
2408-16	1 5/16 - 12
2408-20	1 5/8 - 12
2408-24	1 7/8 - 12
2408-32	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2500 MJ - MJ 90°

SAE# 070201

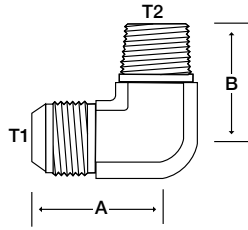


Part Number	T1	T2
	MJIC	MJIC
2500-0202	5/16 - 24	5/16 - 24
2500-0303	3/8 - 24	3/8 - 24
2500-0404	7/16 - 20	7/16 - 20
2500-0504	1/2 - 20	7/16 - 20
2500-0505	1/2 - 20	1/2 - 20
2500-0604	9/16 - 18	7/16 - 20
2500-0605	9/16 - 18	1/2 - 20
2500-0606	9/16 - 18	9/16 - 18
2500-0806	3/4 - 16	9/16 - 18
2500-0808	3/4 - 16	3/4 - 16
2500-1008	7/8 - 14	3/4 - 16
2500-1010	7/8 - 14	7/8 - 14
2500-1208	1 1/16 - 12	3/4 - 16
2500-1210	1 1/16 - 12	7/8 - 14
2500-1212	1 1/16 - 12	1 1/16 - 12
2500-1414	1 3/16 - 12	1 3/16 - 12
2500-1612	1 5/16 - 12	1 1/16 - 12
2500-1616	1 5/16 - 12	1 5/16 - 12
2500-2020	1 5/8 - 12	1 5/8 - 12
2500-2424	1 7/8 - 12	1 7/8 - 12
2500-3232	2 1/2 - 12	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2501 MJ - MP 90°

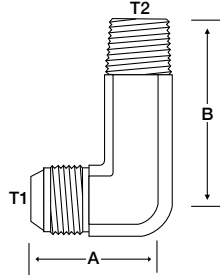
SAE# 51504



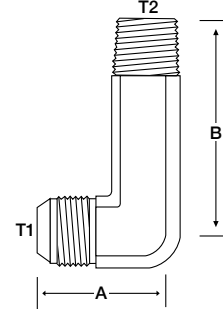
Part Number	T1	T2	Part Number	T1	T2
	MJIC	MNPT		MJIC	MNPT
2501-0202	5/16 - 24	1/8 - 27	2501-1608	1 5/16 - 12	1/2 - 14
2501-0204	5/16 - 24	1/4 - 18	2501-1612	1 5/16 - 12	3/4 - 14
2501-0302	3/8 - 24	1/8 - 27	2501-1616	1 5/16 - 12	1 - 11 1/2
2501-0402	7/16 - 20	1/8 - 27	2501-1620	1 5/16 - 12	1 1/4 - 11 1/2
2501-0404	7/16 - 20	1/4 - 18	2501-1624	1 5/16 - 12	1 1/2 - 11 1/2
2501-0406	7/16 - 20	3/8 - 18	2501-2012	1 5/8 - 12	3/4 - 14
2501-0408	7/16 - 20	1/2 - 14	2501-2016	1 5/8 - 12	1 - 11 1/2
2501-0412	7/16 - 20	3/4 - 14	2501-2020	1 5/8 - 12	1 1/4 - 11 1/2
2501-0502	1/2 - 20	1/8 - 27	2501-2024	1 5/8 - 12	1 1/2 - 11 1/2
2501-0504	1/2 - 20	1/4 - 18	2501-2416	1 7/8 - 12	1 - 11 1/2
2501-0506	1/2 - 20	3/8 - 18	2501-2420	1 7/8 - 12	1 1/4 - 11 1/2
2501-0508	1/2 - 20	1/2 - 14	2501-2424	1 7/8 - 12	1 1/2 - 11 1/2
2501-0602	9/16 - 18	1/8 - 27	2501-2432	1 7/8 - 12	2 - 11 1/2
2501-0604	9/16 - 18	1/4 - 18	2501-3224	2 1/2 - 12	1 1/2 - 11 1/2
2501-0606	9/16 - 18	3/8 - 18	2501-3232	2 1/2 - 12	2 - 11 1/2
2501-0608	9/16 - 18	1/2 - 14			
2501-0612	9/16 - 18	3/4 - 14			
2501-0802	3/4 - 16	1/8 - 27			
2501-0804	3/4 - 16	1/4 - 18			
2501-0806	3/4 - 16	3/8 - 18			
2501-0808	3/4 - 16	1/2 - 14			
2501-0812	3/4 - 16	3/4 - 14			
2501-0816	3/4 - 16	1 - 11 1/2			
2501-1006	7/8 - 14	3/8 - 18			
2501-1008	7/8 - 14	1/2 - 14			
2501-1012	7/8 - 14	3/4 - 14			
2501-1016	7/8 - 14	1/4 - 18			
2501-1206	1 1/16 - 12	3/8 - 18			
2501-1208	1 1/16 - 12	1/2 - 14			
2501-1212	1 1/16 - 12	3/4 - 14			
2501-1216	1 1/16 - 12	1 - 11 1/2			
2501-1412	1 3/16 - 12	3/4 - 14			

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2501L MJ - MP 90° Long



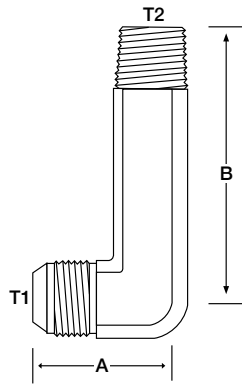
## 2501LL MJ - MP 90° X-Long



Part Number	T1	T2
	MJIC	MNPT
2501L-0402	7/16 - 20	1/8 - 27
2501L-0404	7/16 - 20	1/4 - 18
2501L-0502	1/2 - 20	1/8 - 27
2501L-0504	1/2 - 20	1/4 - 18
2501L-0602	9/16 - 18	1/8 - 27
2501L-0604	9/16 - 18	1/4 - 18
2501L-0606	9/16 - 18	3/8 - 18
2501L-0608	9/16 - 18	1/2 - 14
2501L-0804	3/4 - 16	1/4 - 18
2501L-0806	3/4 - 16	3/8 - 18
2501L-0808	3/4 - 16	1/2 - 14
2501L-0812	3/4 - 16	3/4 - 14
2501L-1008	7/8 - 14	1/2 - 14
2501L-1212	1 1/16 - 12	3/4 - 14
2501L-1216	1 1/16 - 12	1 - 11 1/2
2501L-1412	1 3/16 - 12	3/4 - 14
2501L-1616	1 5/16 - 12	1 - 11 1/2
2501L-2020	1 5/8 - 12	1 1/4 - 11 1/2
2501L-2424	1 7/8 - 12	1 1/2 - 11 1/2

Part Number	T1	T2
	MJIC	MNPT
2501LL-0402	7/16 - 20	1/8 - 27
2501LL-0404	7/16 - 20	1/4 - 18
2501LL-0406	7/16 - 20	3/8 - 18
2501LL-0502	1/2 - 20	1/8 - 27
2501LL-0504	1/2 - 20	1/4 - 18
2501LL-0604	9/16 - 18	1/4 - 18
2501LL-0606	9/16 - 18	3/8 - 18
2501LL-0608	9/16 - 18	1/2 - 14
2501LL-0806	3/4 - 16	3/8 - 18
2501LL-0808	3/4 - 16	1/2 - 14
2501LL-1008	7/8 - 14	1/2 - 14
2501LL-1208	1 1/16 - 12	1/2 - 14
2501LL-1212	1 1/16 - 12	3/4 - 14
2501LL-1412	1 3/16 - 12	3/4 - 14
2501LL-1616	1 5/16 - 12	1 - 11 1/2
2501LL-2020	1 5/8 - 12	1 1/4 - 11 1/2

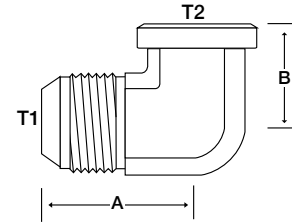
## 2501LLL MJ - MP 90° XX-Long



Part Number	T1	T2
	MJIC	MNPT
2501LLL-0402	7/16 - 20	1/8 - 27
2501LLL-0404	7/16 - 20	1/4 - 18
2501LLL-0502	1/2 - 20	1/8 - 27
2501LLL-0604	9/16 - 18	1/4 - 18
2501LLL-0606	9/16 - 18	3/8 - 18
2501LLL-0806	3/4 - 16	3/8 - 18
2501LLL-0808	3/4 - 16	1/2 - 14
2501LLL-1008	7/8 - 14	1/2 - 14
2501LLL-1212	1 1/16 - 12	3/4 - 14
2501LLL-1616	1 5/16 - 12	1 - 11 1/2

## 2502 MJ - FP 90°

SAE# 070203

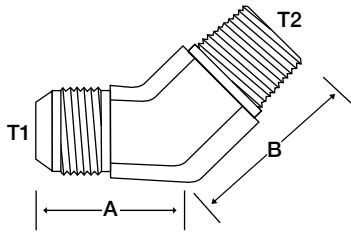


Part Number	T1	T2
	MJIC	FNPT
2502-0202	5/16 - 24	1/8 - 27
2502-0302	3/8 - 24	1/8 - 27
2502-0402	7/16 - 20	1/8 - 27
2502-0404	7/16 - 20	1/4 - 18
2502-0406	7/16 - 20	3/8 - 18
2502-0502	1/2 - 20	1/8 - 27
2502-0504	1/2 - 20	1/4 - 18
2502-0602	9/16 - 18	1/8 - 27
2502-0604	9/16 - 18	1/4 - 18
2502-0606	9/16 - 18	3/8 - 18
2502-0608	9/16 - 18	1/2 - 14
2502-0804	3/4 - 16	1/4 - 18
2502-0806	3/4 - 16	3/8 - 18
2502-0808	3/4 - 16	1/2 - 14
2502-1008	7/8 - 14	1/2 - 14
2502-1208	1 1/16 - 12	1/2 - 14
2502-1212	1 1/16 - 12	3/4 - 14
2502-1412	1 3/16 - 12	3/4 - 14
2502-1612	1 5/16 - 12	3/4 - 14
2502-1616	1 5/16 - 12	1 - 11 1/2
2502-2020	1 5/8 - 12	1 1/4 - 11 1/2
2502-2424	1 7/8 - 12	1 1/2 - 11 1/2
2502-3232	2 1/2 - 12	2 - 11 1/2



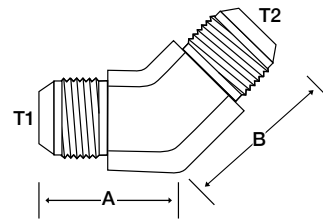
## 2503 MJ - MP 45°

SAE# 070302



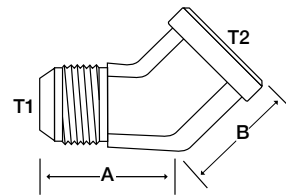
Part Number	T1	T2
	MJIC	MNPT
2503-0202	5/16 - 24	1/8 - 27
2503-0302	3/8 - 24	1/8 - 27
2503-0402	7/16 - 20	1/8 - 27
2503-0404	7/16 - 20	1/4 - 18
2503-0406	7/16 - 20	3/8 - 18
2503-0408	7/16 - 20	1/2 - 14
2503-0502	1/2 - 20	1/8 - 27
2503-0504	1/2 - 20	1/4 - 18
2503-0602	9/16 - 18	1/8 - 27
2503-0604	9/16 - 18	1/4 - 18
2503-0606	9/16 - 18	3/8 - 18
2503-0608	9/16 - 18	1/2 - 14
2503-0612	9/16 - 18	3/4 - 14
2503-0804	3/4 - 16	1/4 - 18
2503-0806	3/4 - 16	3/8 - 18
2503-0808	3/4 - 16	1/2 - 14
2503-0812	3/4 - 16	3/4 - 14
2503-1006	7/8 - 14	3/8 - 18
2503-1008	7/8 - 14	1/2 - 14
2503-1012	7/8 - 14	3/4 - 14
2503-1208	1 1/16 - 12	1/2 - 14
2503-1212	1 1/16 - 12	3/4 - 14
2503-1216	1 1/16 - 12	1 - 11 1/2
2503-1412	1 3/16 - 12	3/4 - 14
2503-1608	1 5/8 - 12	1/2 - 14
2503-1612	1 5/8 - 12	3/4 - 14
2503-1616	1 5/8 - 12	1 - 11 1/2
2503-1620	1 5/8 - 12	1 1/4 - 11 1/2
2503-2016	1 5/8 - 12	1 - 11 1/2
2503-2020	1 5/8 - 12	1 1/4 - 11 1/2
2503-2024	1 5/8 - 12	1 1/2 - 11 1/2
2503-2424	1 7/8 - 12	1 1/2 - 11 1/2
2503-3232	2 1/2 - 12	2 - 11 1/2

## 2504 MJ - MJ 45°



Part Number	T1	T2
	MJIC	MJIC
2504-0404	7/16 - 20	7/16 - 20
2504-0606	9/16 - 18	9/16 - 18
2504-0808	3/4 - 16	3/4 - 16
2504-1010	7/8 - 14	7/8 - 14
2504-1212	1 1/16 - 12	1 1/16 - 12
2504-1616	1 5/16 - 12	1 5/16 - 12

## 2505 MJ - FP 45°

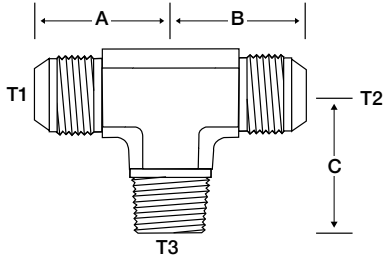


Part Number	T1	T2
	MJIC	FNPT
2505-0404	7/16 - 20	1/4 - 18
2505-0604	9/16 - 18	1/4 - 18
2505-0606	9/16 - 18	3/8 - 18
2505-0806	3/4 - 16	3/8 - 18
2505-0808	3/4 - 16	1/2 - 14
2505-1008	7/8 - 14	1/2 - 14
2505-1212	1 1/16 - 12	3/4 - 14
2505-1616	1 5/16 - 12	1 - 11 1/2

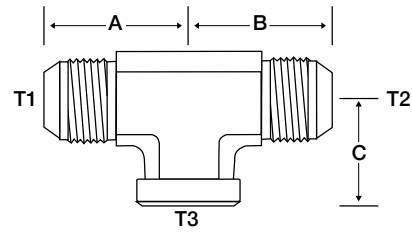
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

**2601 MJ - MJ - MP Tee**

SAE# 070425

**2602 MJ - MJ - FP Tee**

SAE# 070427



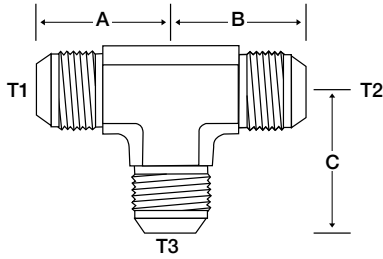
Part Number	T1 / T2	T3
	MJIC	MNPT
2601-030302	3/8 - 24	1/8 - 27
2601-040402	7/16 - 20	1/8 - 27
2601-040404	7/16 - 20	1/4 - 18
2601-040406	7/16 - 20	3/8 - 18
2601-050502	1/2 - 20	1/8 - 27
2601-050504	1/2 - 20	1/4 - 18
2601-060604	9/16 - 18	1/4 - 18
2601-060606	9/16 - 18	3/8 - 18
2601-060608	9/16 - 18	1/2 - 14
2601-080804	3/4 - 16	1/4 - 18
2601-080806	3/4 - 16	3/8 - 18
2601-080808	3/4 - 16	1/2 - 14
2601-101006	7/8 - 14	3/8 - 18
2601-101008	7/8 - 14	1/2 - 14
2601-121208	1 1/16 - 12	1/2 - 14
2601-121212	1 1/16 - 12	3/4 - 14
2601-141412	1 3/16 - 12	3/4 - 14
2601-161612	1 5/16 - 12	3/4 - 14
2601-161616	1 5/16 - 12	1 - 11 1/2
2601-202020	1 5/8 - 12	1 1/4 - 11 1/2
2601-242424	1 7/8 - 12	1 1/2 - 11 1/2
2601-323232	2 1/2 - 12	2 - 11 1/2

Part Number	T1 / T2	T3
	MJIC	FNPT
2602-040402	7/16 - 20	1/8 - 27
2602-040404	7/16 - 20	1/4 - 18
2602-050502	1/2 - 20	1/8 - 27
2602-060604	9/16 - 18	1/4 - 18
2602-060606	9/16 - 18	3/8 - 18
2602-080806	3/4 - 16	3/8 - 18
2602-080808	3/4 - 16	1/2 - 14
2602-101008	7/8 - 14	1/2 - 14
2602-121212	1 1/16 - 12	3/4 - 14
2602-141412	1 3/16 - 12	3/4 - 14
2602-161616	1 5/16 - 12	1 - 11 1/2
2602-202020	1 5/8 - 12	1 1/4 - 11 1/2
2602-242424	1 7/8 - 12	1 1/2 - 11 1/2
2602-323232	2 1/2 - 12	2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

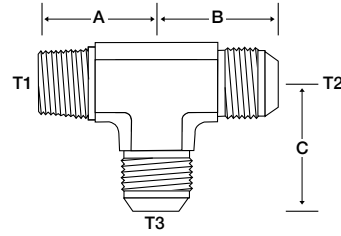
## 2603 MJ - MJ - MJ Tee

SAE# 070401



## 2605 MJ - MP - MJ Tee

SAE# 070424

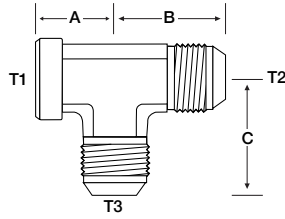


Part Number	T1 / T2	T3
	MJIC	MJIC
2603-020202	5/16 - 24	5/16 - 24
2603-030303	3/8 - 24	3/8 - 24
2603-040404	7/16 - 20	7/16 - 20
2603-040406	7/16 - 20	9/16 - 18
2603-050505	1/2 - 20	1/2 - 20
2603-060604	9/16 - 18	7/16 - 20
2603-060606	9/16 - 18	9/16 - 18
2603-060608	9/16 - 18	3/4 - 16
2603-080808	3/4 - 16	3/4 - 16
2603-080810	3/4 - 16	7/8 - 14
2603-080812	3/4 - 16	1 1/16 - 12
2603-100808	7/8 - 14	3/4 - 16
2603-101008	7/8 - 14	3/4 - 16
2603-101010	7/8 - 14	7/8 - 14
2603-121208	1 1/16 - 12	3/4 - 16
2603-121212	1 1/16 - 12	1 1/16 - 12
2603-121216	1 1/16 - 12	1 5/16 - 12
2603-141414	1 3/16 - 12	1 3/16 - 12
2603-161612	1 5/16 - 12	1 1/16 - 12
2603-161616	1 5/16 - 12	1 5/16 - 12
2603-202020	1 5/8 - 12	1 5/8 - 12
2603-242424	1 7/8 - 12	1 7/8 - 12
2603-323232	2 1/2 - 12	2 1/2 - 12

Part Number	T1 / T3	T2
	MJIC	MNPT
2605-040204	7/16 - 20	1/8 - 27
2605-040404	7/16 - 20	1/4 - 18
2605-050205	1/2 - 20	1/8 - 27
2605-060206	9/16 - 18	1/8 - 27
2605-060404	9/16 - 18	1/4 - 18
2605-060406	9/16 - 18	1/4 - 18
2605-060606	9/16 - 18	3/8 - 18
2605-060806	9/16 - 18	1/2 - 14
2605-080408	3/4 - 16	1/4 - 18
2605-080608	3/4 - 16	3/8 - 18
2605-080808	3/4 - 16	1/2 - 14
2605-100810	7/8 - 14	1/2 - 14
2605-121208	1 1/16 - 12	3/4 - 14
2605-121212	1 1/16 - 12	3/4 - 14
2605-141214	1 3/16 - 12	3/4 - 14
2605-161616	1 5/16 - 12	1 - 11 1/2
2605-202020	1 5/8 - 12	1 1/4 - 11 1/2
2605-242424	1 7/8 - 12	1 1/2 - 11 1/2
2605-323232	2 1/2 - 12	2 - 11 1/2

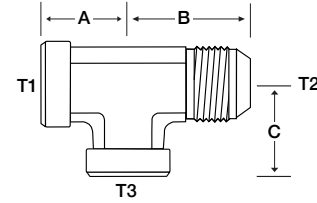
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2606 MJ - FP - MJ Tee



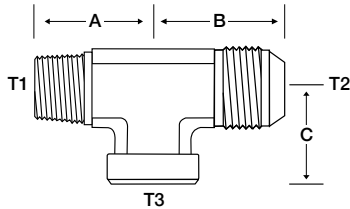
Part Number	T1 / T3	T2
	MJIC	FNPT
2606-040204	7/16 - 20	1/8 - 27
2606-040404	7/16 - 20	1/4 - 18
2606-060406	9/16 - 18	1/4 - 18
2606-060606	9/16 - 18	3/8 - 18
2606-080608	3/4 - 16	3/8 - 18
2606-080808	3/4 - 16	1/2 - 14
2606-100810	7/8 - 14	1/2 - 14
2606-121212	1 1/16 - 12	3/4 - 14
2606-161616	1 5/16 - 12	1 - 11 1/2
2606-202020	1 5/8 - 12	1 1/4 - 11 1/2

## 2609 MJ - FP - FP Tee



Part Number	T1	T2 / T3
	MJIC	FNPT
2609-040202	7/16 - 20	1/8 - 27
2609-040404	7/16 - 20	1/4 - 18
2609-060404	9/16 - 18	1/4 - 18
2609-080606	3/4 - 16	3/8 - 18
2609-080808	3/4 - 16	1/2 - 14
2609-121212	1 1/16 - 12	3/4 - 14
2609-161616	1 5/16 - 12	1 - 11 1/2

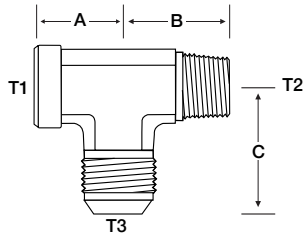
## 2610 MJ - MP - FP Tee



Part Number	T2 / T3	T1
	MNPT / FNPT	MJIC
2610-040404	1/4 - 18	7/16 - 20
2610-060606	3/8 - 18	9/16 - 18
2610-080808	1/2 - 14	3/4 - 16
2610-121212	3/4 - 14	1 1/16 - 12
2610-161616	1 - 11 1/2	1 5/16 - 12

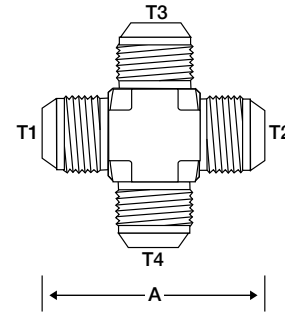
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 2613 MP - FP - MJ Tee



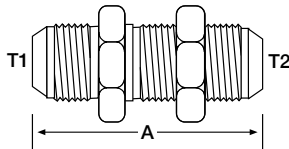
Part Number	T1 / T2	T3
	MNPT / FNPT	MJIC
2613-020204	1/8 - 27	7/16 - 20
2613-040406	1/4 - 18	9/16 - 18
2613-060606	3/8 - 18	9/16 - 18
2613-060608	3/8 - 18	3/4 - 16
2613-121212	3/4 - 14	1 1/16 - 12
2613-161616	1 - 11 1/2	1 5/16 - 12

## 2650 MJ - MJ - MJ - MJ Cross



Part Number	T1 / T2	T3 / T4
	MJIC	MJIC
2650-02020202	5/16 - 24	5/16 - 24
2650-04040404	7/16 - 20	7/16 - 20
2650-05050505	1/2 - 20	1/2 - 20
2650-06060606	9/16 - 18	9/16 - 18
2650-06080608	9/16 - 18	3/4 - 16
2650-08080808	3/4 - 16	3/4 - 16
2650-10101010	7/8 - 14	7/8 - 14
2650-12121212	1 1/16 - 12	1 1/16 - 12
2650-14141414	1 3/16 - 12	1 3/16 - 12
2650-16161616	1 5/16 - 12	1 5/16 - 12
2650-20202020	1 5/8 - 12	1 5/8 - 12
2650-24242424	1 7/8 - 12	1 7/8 - 12

## 2700LN MJ - MJ Bulkhead

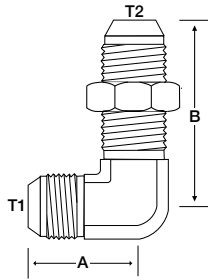


Part Number	T1	T2
	MJIC	MJIC
2700LN-0404	7/16 - 20	7/16 - 20
2700LN-0406	7/16 - 20	9/16 - 18
2700LN-0505	1/2 - 20	1/2 - 20
2700LN-0604	9/16 - 18	7/16 - 20
2700LN-0606	9/16 - 18	9/16 - 18
2700LN-0808	3/4 - 16	3/4 - 16
2700LN-1010	7/8 - 14	7/8 - 14
2700LN-1212	1 1/16 - 12	1 1/16 - 12
2700LN-1414	1 3/16 - 12	1 3/16 - 12
2700LN-1616	1 5/16 - 12	1 5/16 - 12
2700LN-2020	1 5/8 - 12	1 5/8 - 12
2700LN-2424	1 7/8 - 12	1 7/8 - 12
2700LN-3232	2 1/2 - 12	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

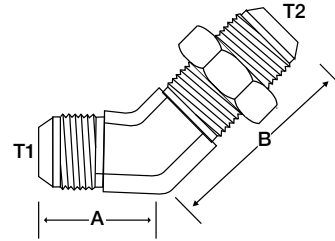
## 2701LN MJ - MJ Bulkhead 90°

SAE# 070701



## 2702LN MJ - MJ Bulkhead 45°

SAE# 070801

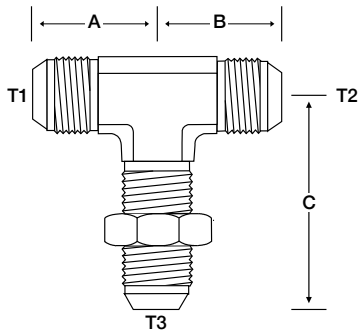


Part Number	T1	T2
	MJIC	MJIC
2701LN-0303	3/8 - 24	3/8 - 24
2701LN-0404	7/16 - 20	7/16 - 20
2701LN-0505	1/2 - 20	1/2 - 20
2701LN-0606	9/16 - 18	9/16 - 18
2701LN-0808	3/4 - 16	3/4 - 16
2701LN-1010	7/8 - 14	7/8 - 14
2701LN-1212	1 1/16 - 12	1 1/16 - 12
2701LN-1616	1 5/16 - 12	1 5/16 - 12
2701LN-2020	1 5/8 - 12	1 5/8 - 12
2701LN-2424	1 7/8 - 12	1 7/8 - 12

Part Number	T1	T1
	MJIC	MJIC
2702LN-0303	3/8 - 24	3/8 - 24
2702LN-0404	7/16 - 20	7/16 - 20
2702LN-0505	1/2 - 20	1/2 - 20
2702LN-0606	9/16 - 18	9/16 - 18
2702LN-0808	3/4 - 16	3/4 - 16
2702LN-1010	7/8 - 14	7/8 - 14
2702LN-1212	1 1/16 - 12	1 1/16 - 12
2702LN-1616	1 5/16 - 12	1 5/16 - 12
2702LN-2020	1 5/8 - 12	1 5/8 - 12
2702LN-2424	1 7/8 - 12	1 7/8 - 12

## 2703LN MJ - MJ - MJ Bulkhead Tee

SAE# 070959

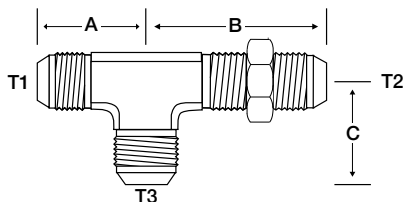


Part Number	T1 / T2	T3
	MJIC	MJIC
2703LN-030303	3/8 - 24	3/8 - 24
2703LN-040404	7/16 - 20	7/16 - 20
2703LN-040406	7/16 - 20	9/16 - 18
2703LN-050505	1/2 - 20	1/2 - 20
2703LN-060606	9/16 - 18	9/16 - 18
2703LN-080808	3/4 - 16	3/4 - 16
2703LN-101010	7/8 - 14	7/8 - 14
2703LN-121212	1 1/16 - 12	1 1/16 - 12
2703LN-161616	1 5/16 - 12	1 5/16 - 12
2703LN-202020	1 5/8 - 12	1 5/8 - 12
2703LN-242424	1 7/8 - 12	1 7/8 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

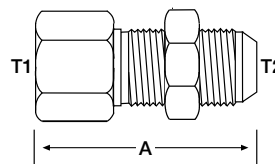
## 2704LN MJ - MJ - MJ Bulkhead Tee

SAE# 070958



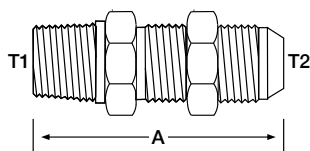
Part Number	T1 / T2 / T3
	MJIC
2704LN-030303	3/8 - 24
2704LN-040404	7/16 - 20
2704LN-050505	1/2 - 20
2704LN-060606	9/16 - 18
2704LN-080808	3/4 - 16
2704LN-101010	7/8 - 14
2704LN-121212	1 1/16 - 12
2704LN-161616	1 5/16 - 12
2704LN-202020	1 5/8 - 12
2704LN-242424	1 7/8 - 12

## 2705LN FP - MJ Bulkhead



Part Number	T1	T2
	FNPT	MJIC
2705LN-0204	1/8 - 27	7/16 - 20
2705LN-0404	1/4 - 18	7/16 - 20
2705LN-0406	1/4 - 18	9/16 - 18
2705LN-0606	3/8 - 18	9/16 - 18
2705LN-0608	3/8 - 18	3/4 - 16
2705LN-0808	1/2 - 14	3/4 - 16
2705LN-0810	1/2 - 14	7/8 - 14
2705LN-1212	3/4 - 14	1 1/16 - 12
2705LN-1616	1 - 11 1/2	1 5/16 - 12
2705LN-2020	1 1/4 - 11 1/2	1 5/8 - 12
2705LN-2424	1 1/2 - 11 1/2	1 7/8 - 12

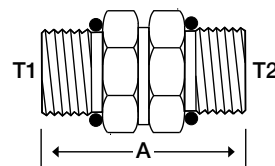
## 2706LN MP - MJ Bulkhead



Part Number	T1	T2
	MNPT	MJIC
2706LN-0204	1/8 - 27	7/16 - 20
2706LN-0404	1/4 - 18	7/16 - 20
2706LN-0406	1/4 - 18	9/16 - 18
2706LN-0606	3/8 - 18	9/16 - 18
2706LN-0608	3/8 - 18	3/4 - 16
2706LN-0808	1/2 - 14	3/4 - 16
2706LN-0810	1/2 - 14	7/8 - 14
2706LN-1212	3/4 - 14	1 1/16 - 12
2706LN-1616	1 - 11 1/2	1 5/16 - 12
2706LN-2020	1 1/4 - 11 1/2	1 5/8 - 12
2706LN-2424	1 1/2 - 11 1/2	1 7/8 - 12

## 3474 MAORB - MORB

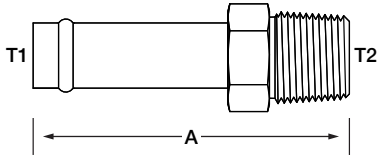
SAE#



Part Number	T1	T2
	MAORB	MAORB
3474-0404	7/16 - 20	7/16 - 20
3474-0604	9/16 - 18	7/16 - 20
3474-0606	9/16 - 18	9/16 - 18
3474-0806	3/4 - 16	9/16 - 18
3474-0808	3/4 - 16	3/4 - 16
3474-1010	7/8 - 14	7/8 - 14
3474-1212	1 1/16 - 12	1 1/16 - 12
3474-1612	1 5/16 - 12	1 1/16 - 12
3474-1616	1 5/16 - 12	1 5/16 - 12
3474-2020	1 5/8 - 12	1 5/8 - 12
3474-2424	1 7/8 - 12	1 7/8 - 12

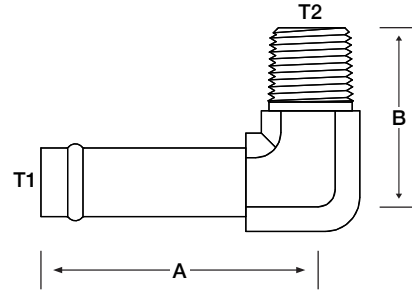
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 4404 HB - MP Straight



Part Number	T1	T2
	HB	MNPT
4404-0402	1/4	1/8 - 27
4404-0404	1/4	1/4 - 18
4404-0602	3/8	1/8 - 27
4404-0604	3/8	1/4 - 18
4404-0606	3/8	3/8 - 18
4404-0804	1/2	1/4 - 18
4404-0806	1/2	3/8 - 18
4404-0808	1/2	1/2 - 14
4404-0812	1/2	3/4 - 14
4404-1006	5/8	3/8 - 18
4404-1008	5/8	1/2 - 14
4404-1208	3/4	1/2 - 14
4404-1212	3/4	3/4 - 14
4404-1612	1	3/4 - 14
4404-1616	1	1 - 11 1/2
4404-2016	1 1/4	1 - 11 1/2
4404-2020	1 1/4	1 1/4 - 11 1/2
4404-2024	1 1/4	1 1/2 - 11 1/2
4404-2420	1 1/2	1 1/4 - 11 1/2
4404-2424	1 1/2	1 1/2 - 11 1/2

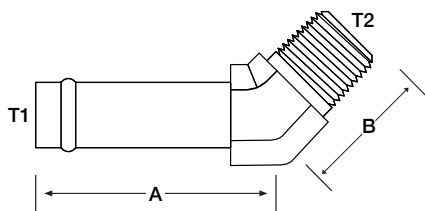
## 4501 HB - MP 90°



Part Number	T1	T2
	HB	MNPT
4501-0402	1/4	1/8 - 27
4501-0404	1/4	1/4 - 18
4501-0604	3/8	1/4 - 18
4501-0606	3/8	3/8 - 18
4501-0806	1/2	3/8 - 18
4501-0808	1/2	1/2 - 14
4501-0812	1/2	3/4 - 14
4501-1008	5/8	1/2 - 14
4501-1012	5/8	3/4 - 14
4501-1208	3/4	1/2 - 14
4501-1212	3/4	3/4 - 14
4501-1216	3/4	1 - 11 1/2
4501-1612	1	3/4 - 14
4501-1616	1	1 - 11 1/2

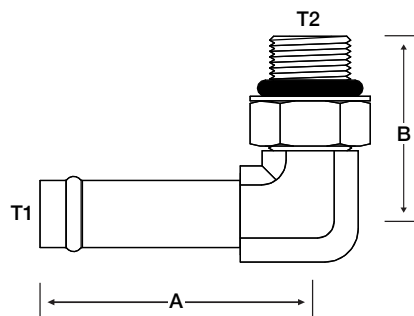


## 4503 HB - MP 45°



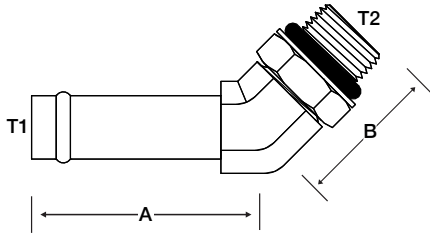
Part Number	T1	T2
	HB	MNPT
4503-0402	1/4	1/8 - 27
4503-0404	1/4	1/4 - 18
4503-0604	3/8	1/4 - 18
4503-0806	1/2	3/8 - 18
4503-0808	1/2	1/2 - 14
4503-1008	5/8	1/2 - 14
4503-1212	3/4	3/4 - 14
4503-1616	1	1 - 11 1/2
4503-2020	1 1/4	1 1/4 - 11 1/2
4503-2424	1 1/2	1 1/2 - 11 1/2

## 4601 HB - MAORB 90°



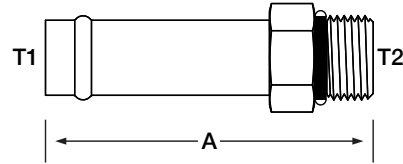
Part Number	T1	T2
	HB	MORB
4601-0404	1/4	7/16 - 20
4601-0406	1/4	9/16 - 18
4601-0604	3/8	7/16 - 20
4601-0606	3/8	9/16 - 18
4601-0608	3/8	3/4 - 16
4601-0806	1/2	9/16 - 18
4601-0808	1/2	3/4 - 16
4601-1008	5/8	3/4 - 16
4601-1010	5/8	7/8 - 14
4601-1012	5/8	1 1/16 - 12
4601-1208	3/4	3/4 - 16
4601-1210	3/4	7/8 - 14
4601-1212	3/4	1 1/16 - 12
4601-1216	3/4	1 5/16 - 12
4601-1610	1	7/8 - 14
4601-1612	1	1 1/16 - 12
4601-1616	1	1 5/16 - 12
4601-1620	1	1 5/8 - 12
4601-2016	1 1/4	1 5/16 - 12
4601-2020	1 1/4	1 5/8 - 12
4601-2424	1 1/2	1 7/8 - 12

## 4603 HB - MAORB 45°



Part Number	T1	T2
	HB	MORB
4603-0404	1/4	7/16 - 20
4603-0606	3/8	9/16 - 18
4603-0808	1/2	3/4 - 16
4603-1010	5/8	7/8 - 14
4603-1012	5/8	1 1/16 - 12
4603-1208	3/4	3/4 - 16
4603-1210	3/4	7/8 - 14
4603-1212	3/4	1 1/16 - 12
4603-1612	1	1 1/16 - 12
4603-1616	1	1 5/16 - 12
4603-2016	1 1/4	1 5/16 - 12
4603-2020	1 1/4	1 5/8 - 12
4603-2420	1 1/2	1 5/8 - 12
4603-2424	1 1/2	1 7/8 - 12

## 4604 HB - MORB

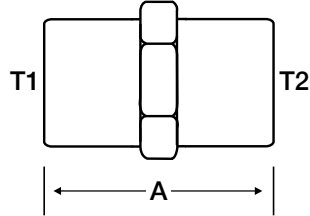


Part Number	T1	T2
	HB	MORB
4604-0404	1/4	7/16 - 20
4604-0604	3/8	7/16 - 20
4604-0606	3/8	9/16 - 18
4604-0806	1/2	9/16 - 18
4604-0808	1/2	3/4 - 16
4604-1008	5/8	3/4 - 16
4604-1010	5/8	7/8 - 14
4604-1208	3/4	3/4 - 16
4604-1210	3/4	7/8 - 14
4604-1212	3/4	1 1/16 - 12
4604-1216	3/4	1 5/16 - 12
4604-1612	1	1 1/16 - 12
4604-1616	1	1 5/16 - 12
4604-1620	1	1 5/8 - 12
4604-2016	1 1/4	1 5/16 - 12
4604-2020	1 1/4	1 5/8 - 12
4604-2024	1 1/4	1 7/8 - 12
4604-2424	1 1/2	1 7/8 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

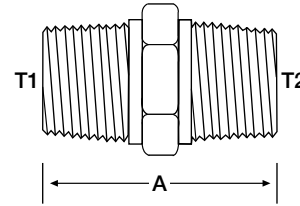
## 5000 FP - FP Straight

SAE# 140138



## 5404 MP - MP Straight

SAE# 140137

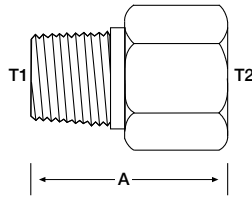


Part Number	T1	T2
	FNPT	FNPT
5000-0202	1/8 - 27	1/8 - 27
5000-0402	1/4 - 18	1/8 - 27
5000-0404	1/4 - 18	1/4 - 18
5000-0604	3/8 - 18	1/4 - 18
5000-0606	3/8 - 18	3/8 - 18
5000-0804	1/2 - 14	1/4 - 18
5000-0806	1/2 - 14	3/8 - 18
5000-0808	1/2 - 14	1/2 - 14
5000-1206	3/4 - 14	3/8 - 18
5000-1208	3/4 - 14	1/2 - 14
5000-1212	3/4 - 14	3/4 - 14
5000-1612	1 - 11 1/2	3/4 - 14
5000-1616	1 - 11 1/2	1 - 11 1/2
5000-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5000-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5000-3232	2 - 11 1/2	2 - 11 1/2

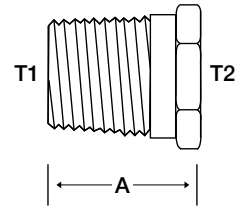
Part Number	T1	T2
	MNPT	MNPT
5404-0202	1/8 - 27	1/8 - 27
5404-0402	1/4 - 18	1/8 - 27
5404-0404	1/4 - 18	1/4 - 18
5404-0602	3/8 - 18	1/8 - 27
5404-0604	3/8 - 18	1/4 - 18
5404-0606	3/8 - 18	3/8 - 18
5404-0804	1/2 - 14	1/4 - 18
5404-0806	1/2 - 14	3/8 - 18
5404-0808	1/2 - 14	1/2 - 14
5404-1206	3/4 - 14	3/8 - 18
5404-1208	3/4 - 14	1/2 - 14
5404-1212	3/4 - 14	3/4 - 14
5404-1606	1 - 11 1/2	3/8 - 18
5404-1608	1 - 11 1/2	1/2 - 14
5404-1612	1 - 11 1/2	3/4 - 14
5404-1616	1 - 11 1/2	1 - 11 1/2
5404-2012	1 1/4 - 11 1/2	3/4 - 14
5404-2016	1 1/4 - 11 1/2	1 - 11 1/2
5404-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5404-2412	1 1/2 - 11 1/2	3/4 - 14
5404-2416	1 1/2 - 11 1/2	1 - 11 1/2
5404-2420	1 1/2 - 11 1/2	1 1/4 - 11 1/2
5404-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5404-3220	2 - 11 1/2	1 1/4 - 11 1/2
5404-3224	2 - 11 1/2	1 1/2 - 11 1/2
5404-3232	2 - 11 1/2	2 - 11 1/2

## 5405 MP - FP Straight

SAE# 140139



## 5406 MP - FP Reducing Bushing

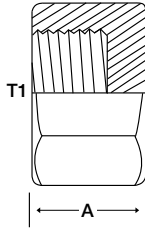


Part Number	T1	T2
	MNPT	FNPT
5405-0202	1/8 - 27	1/8 - 27
5405-0204	1/8 - 27	1/4 - 18
5405-0208	1/8 - 27	1/2 - 14
5405-0404	1/4 - 18	1/4 - 18
5405-0406	1/4 - 18	3/8 - 18
5405-0408	1/4 - 18	1/2 - 14
5405-0604	3/8 - 18	1/4 - 18
5405-0606	3/8 - 18	3/8 - 18
5405-0608	3/8 - 18	1/2 - 14
5405-0612	3/8 - 18	3/4 - 14
5405-0806	1/2 - 14	3/8 - 18
5405-0808	1/2 - 14	1/2 - 14
5405-0812	1/2 - 14	3/4 - 14
5405-0816	1/2 - 14	1 1/2 - 11 1/2
5405-1212	3/4 - 14	3/4 - 14
5405-1216	3/4 - 14	1 - 11 1/2
5405-1616	1 - 11 1/2	1 - 11 1/2
5405-1620	1 - 11 1/2	1 1/4 - 11 1/2
5405-2016	1 1/4 - 11 1/2	1 - 11 1/2
5405-2024	1 1/4 - 11 1/2	1 1/2 - 11 1/2
5405-2432	1 1/2 - 11 1/2	2 1/2 - 11 1/2

Part Number	T1	T2
	MNPT	FNPT
5406-0402	1/4 - 18	1/8 - 27
5406-0602	3/8 - 18	1/8 - 27
5406-0604	3/8 - 18	1/4 - 18
5406-0802	1/2 - 14	1/8 - 27
5406-0804	1/2 - 14	1/4 - 18
5406-0806	1/2 - 14	3/8 - 18
5406-1204	3/4 - 14	1/4 - 18
5406-1206	3/4 - 14	3/8 - 18
5406-1208	3/4 - 14	1/2 - 14
5406-1604	1 - 11 1/2	1/4 - 18
5406-1606	1 - 11 1/2	3/8 - 18
5406-1608	1 - 11 1/2	1/2 - 14
5406-1612	1 - 11 1/2	3/4 - 14
5406-2004	1 1/4 - 11 1/2	1/4 - 18
5406-2006	1 1/4 - 11 1/2	3/8 - 18
5406-2008	1 1/4 - 11 1/2	1/2 - 14
5406-2012	1 1/4 - 11 1/2	3/4 - 14
5406-2016	1 1/4 - 11 1/2	1 1/2 - 11 1/2
5406-2406	1 1/2 - 11 1/2	3/8 - 18
5406-2412	1 1/2 - 11 1/2	3/4 - 14
5406-2416	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5406-2420	1 1/2 - 11 1/2	1 1/4 - 11 1/2
5406-3220	2 1/2 - 11 1/2	1 1/4 - 11 1/2
5406-3224	2 1/2 - 11 1/2	1 1/2 - 11 1/2

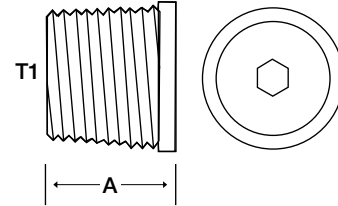
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 5406C FP Pipe Cap



Part Number	T1
	FNPT
5406C-02	1/8 - 27
5406C-04	1/4 - 18
5406C-06	3/8 - 18
5406C-08	1/2 - 14
5406C-12	3/4 - 14
5406C-16	1 - 11 1/2
5406C-20	1 1/4 - 11 1/2
5406C-24	1 1/2 - 11 1/2
5406C-32	2 - 11 1/2

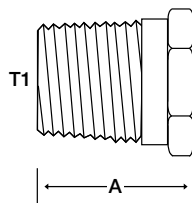
## 5406HP MP Hollow Hex Plug



Part Number	T1
	MNPT
5406HP-02	1/8 - 27
5406HP-04	1/4 - 18
5406HP-06	3/8 - 18
5406HP-08	1/2 - 14
5406HP-12	3/4 - 14
5406HP-16	1 - 11 1/2
5406HP-20	1 1/4 - 11 1/2
5406HP-24	1 1/2 - 11 1/2
5406HP-32	2 - 11 1/2

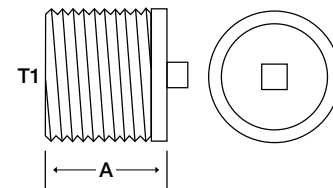
## 5406 MP Pipe Plug

SAE# 130109E



Part Number	T1
	MNPT
5406P-02	1/8 - 27
5406P-04	1/4 - 18
5406P-06	3/8 - 18
5406P-08	1/2 - 14
5406P-12	3/4 - 14
5406P-16	1 - 11 1/2
5406P-20	1 1/4 - 11 1/2
5406P-24	1 1/2 - 11 1/2
5406P-32	2 - 11 1/2

## 5406SHP MP Square Head Plug

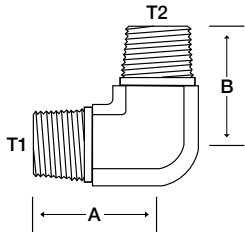


Part Number	T1
	MNPT
5406SHP-02	1/8 - 27
5406SHP-04	1/4 - 18
5406SHP-06	3/8 - 18
5406SHP-08	1/2 - 14
5406SHP-12	3/4 - 14
5406SHP-16	1 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

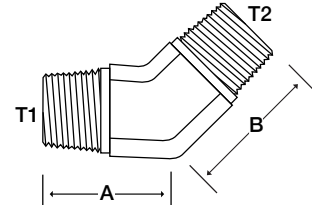
## 5500 MP - MP 90°

SAE# 140237



Part Number	T1	T2
	MNPT	MNPT
5500-0202	1/8 - 27	1/8 - 27
5500-0402	1/4 - 18	1/8 - 27
5500-0404	1/4 - 18	1/4 - 18
5500-0604	3/8 - 18	1/4 - 18
5500-0606	3/8 - 18	3/8 - 18
5500-0804	1/2 - 14	1/4 - 18
5500-0806	1/2 - 14	3/8 - 18
5500-0808	1/2 - 14	1/2 - 14
5500-1208	3/4 - 14	1/2 - 14
5500-1212	3/4 - 14	3/4 - 14
5500-1608	1 - 11 1/2	1/2 - 14
5500-1612	1 - 11 1/2	3/4 - 14
5500-1616	1 - 11 1/2	1 - 11 1/2
5500-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5500-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5500-3232	2 - 11 1/2	2 - 11 1/2

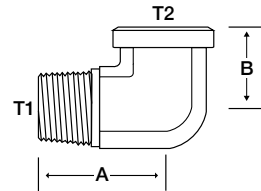
## 5501 MP - MP 45°



Part Number	T1	T2
	MNPT	MNPT
5501-0404	1/4 - 18	1/4 - 18
5501-0606	3/8 - 18	3/8 - 18
5501-0808	1/2 - 14	1/2 - 14
5501-1212	3/4 - 14	3/4 - 14
5501-1616	1 - 11 1/2	1 - 11 1/2
5501-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5501-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

## 5502 MP - FP 90°

SAE# 140239

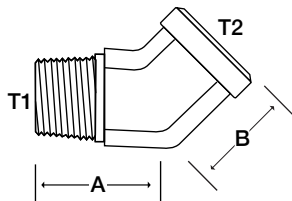


Part Number	T1	T2
	MNPT	FNPT
5502-0202	1/8 - 27	1/8 - 27
5502-0204	1/8 - 27	1/4 - 18
5502-0402	1/4 - 18	1/8 - 27
5502-0404	1/4 - 18	1/4 - 18
5502-0406	1/4 - 18	3/8 - 18
5502-0604	3/8 - 18	1/4 - 18
5502-0606	3/8 - 18	3/8 - 18
5502-0608	3/8 - 18	1/2 - 14
5502-0804	1/2 - 14	1/4 - 18
5502-0806	1/2 - 14	3/8 - 18
5502-0808	1/2 - 14	1/2 - 14
5502-0812	1/2 - 14	3/4 - 14
5502-1208	3/4 - 14	1/2 - 14
5502-1212	3/4 - 14	3/4 - 14
5502-1612	1 - 11 1/2	3/4 - 14
5502-1616	1 - 11 1/2	1 - 11 1/2
5502-2016	1 1/4 - 11 1/2	1 - 11 1/2
5502-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5502-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5502-3232	2 - 11 1/2	2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 5503 MP - FP 45°

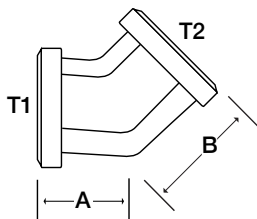
SAE# 140339



Part Number	T1	T2
	MNPT	FNPT
5503-0202	1/8 - 27	1/8 - 27
5503-0404	1/4 - 18	1/4 - 18
5503-0606	3/8 - 18	3/8 - 18
5503-0808	1/2 - 14	1/2 - 14
5503-1212	3/4 - 14	3/4 - 14
5503-1616	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5503-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5503-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

## 5505 FP - FP 45°

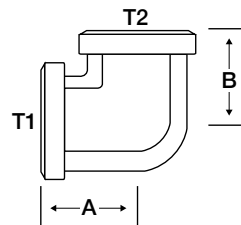
SAE# 140338



Part Number	T1	T2
	FNPT	FNPT
5505-0202	1/8 - 27	1/8 - 27
5505-0404	1/4 - 18	1/4 - 18
5505-0606	3/8 - 18	3/8 - 18
5505-0808	1/2 - 14	1/2 - 14
5505-1212	3/4 - 14	3/4 - 14
5505-1616	1 - 11 1/2	1 - 11 1/2

## 5504 FP - FP 90°

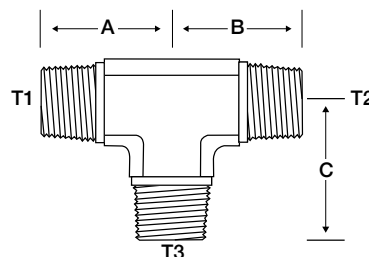
SAE# 140238



Part Number	T1	T2
	FNPT	FNPT
5504-0202	1/8 - 27	1/8 - 27
5504-0402	1/4 - 18	1/8 - 27
5504-0404	1/4 - 18	1/4 - 18
5504-0604	3/8 - 18	1/4 - 18
5504-0606	3/8 - 18	3/8 - 18
5504-0804	1/2 - 14	1/4 - 18
5504-0806	1/2 - 14	3/8 - 18
5504-0808	1/2 - 14	1/2 - 14
5504-1208	3/4 - 14	1/2 - 14
5504-1212	3/4 - 14	3/4 - 14
5504-1612	1 - 11 1/2	3/4 - 14
5504-1616	1 - 11 1/2	1 - 11 1/2
5504-2020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5504-2424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5504-3232	2 - 11 1/2	2 - 11 1/2

## 5600 MP - MP - MP Tee

SAE# 140437

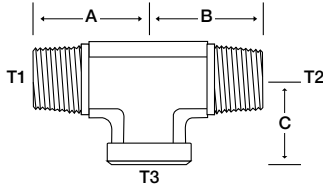


Part Number	T1 / T2 / T3
	MNPT
5600-020202	1/8 - 27
5600-040404	1/4 - 18
5600-060606	3/8 - 18
5600-080808	1/2 - 14
5600-121212	3/4 - 14
5600-161616	1 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

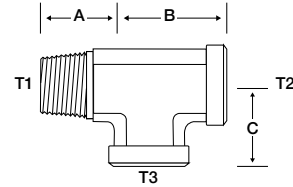
# JIC and Pipe

**5601 MP - MP - FP Tee**  
SAE# 140427



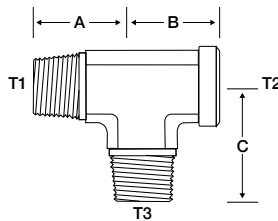
Part Number	T1 / T2	T3
	MNPT	FNPT
5601-020202	1/8 - 27	1/8 - 27
5601-040404	1/4 - 18	1/4 - 18
5601-060606	3/8 - 18	3/8 - 18
5601-080808	1/2 - 14	1/2 - 14
5601-121212	3/4 - 14	3/4 - 14
5601-161616	1 - 11 1/2	1 - 11 1/2
5601-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5601-242424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

**5602 MP - FP - FP Tee**  
SAE# 140424



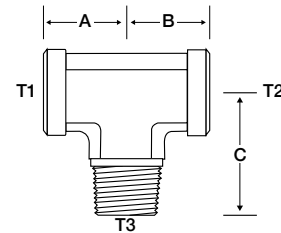
Part Number	T1	T2 / T3
	MNPT	FNPT
5602-020202	1/8 - 27	1/8 - 27
5602-040404	1/4 - 18	1/4 - 18
5602-060606	3/8 - 18	3/8 - 18
5602-080808	1/2 - 14	1/2 - 14
5602-121212	3/4 - 14	3/4 - 14
5602-161616	1 - 11 1/2	1 - 11 1/2
5602-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5602-242424	1 1/2 - 11 1/2	1 1/2 - 11 1/2
5602-323232	2 - 11 1/2	2 - 11 1/2

**5603 MP - FP - MP Tee**  
SAE# 140426



Part Number	T1 / T3	T2
	MNPT	FNPT
5603-020202	1/8 - 27	1/8 - 27
5603-040404	1/4 - 18	1/4 - 18
5603-060606	3/8 - 18	3/8 - 18
5603-080808	1/2 - 14	1/2 - 14
5603-121212	3/4 - 14	3/4 - 14
5603-161616	1 - 11 1/2	1 - 11 1/2
5603-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5603-242424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

**5604 FP - FP - MP Tee**  
SAE# 140425



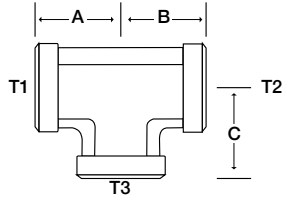
Part Number	T1 / T2	T3
	FNPT	MNPT
5604-020202	1/8 - 27	1/8 - 27
5604-040404	1/4 - 18	1/4 - 18
5604-060606	3/8 - 18	3/8 - 18
5604-080808	1/2 - 14	1/2 - 14
5604-121212	3/4 - 14	3/4 - 14
5604-161616	1 - 11 1/2	1 - 11 1/2
5604-202020	1 1/4 - 11 1/2	1 1/4 - 11 1/2
5604-242424	1 1/2 - 11 1/2	1 1/2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## 5605 FP - FP - FP Tee

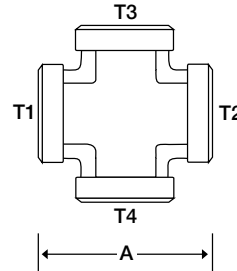
SAE# 140438



Part Number	T1 / T2 / T3
	FNPT
5605-020202	1/8 - 27
5605-040404	1/4 - 18
5605-060606	3/8 - 18
5605-080808	1/2 - 14
5605-121212	3/4 - 14
5605-161616	1 - 11 1/2
5605-202020	1 1/4 - 11 1/2
5605-242424	1 1/2 - 11 1/2
5605-323232	2 - 11 1/2

## 5652 FP - FP - FP - FP Cross

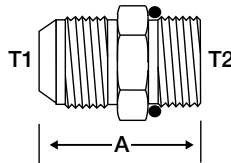
SAE# 140538



Part Number	T1 / T2 / T3 / T4
	FNPT
5652-02020202	1/8 - 27
5652-04040404	1/4 - 18
5652-06060606	3/8 - 18
5652-08080808	1/2 - 14
5652-12121212	3/4 - 14
5652-16161616	1 - 11 1/2
5652-20202020	1 1/4 - 11 1/2
5652-24242424	1 1/2 - 11 1/2
5652-32323232	2 - 11 1/2

## 6400 MJ - MORB Straight

SAE# 070120

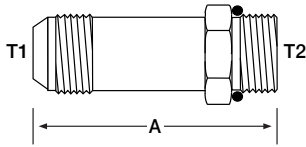


Part Number	T1	T2
	MJIC	MORB
6400-0202	5/16 - 24	5/16 - 24
6400-0303	3/8 - 24	3/8 - 24
6400-0402	7/16 - 20	5/16 - 24
6400-0403	7/16 - 20	3/8 - 24
6400-0404	7/16 - 20	7/16 - 20
6400-0405	7/16 - 20	1/2 - 20
6400-0406	7/16 - 20	9/16 - 18
6400-0408	7/16 - 20	3/4 - 16
6400-0410	7/16 - 20	7/8 - 14
6400-0412	7/16 - 20	1 1/16 - 12
6400-0504	1/2 - 20	7/16 - 20
6400-0505	1/2 - 20	1/2 - 20
6400-0506	1/2 - 20	9/16 - 18
6400-0604	9/16 - 18	7/16 - 20
6400-0605	9/16 - 18	1/2 - 20
6400-0606	9/16 - 18	9/16 - 18
6400-0608	9/16 - 18	3/4 - 16
6400-0610	9/16 - 18	7/8 - 14
6400-0612	9/16 - 18	1 1/16 - 12
6400-0804	3/4 - 16	7/16 - 24
6400-0806	3/4 - 16	9/16 - 18
6400-0808	3/4 - 16	3/4 - 16
6400-0810	3/4 - 16	7/8 - 14
6400-0812	3/4 - 16	1 1/16 - 12
6400-0816	3/4 - 16	1 5/16 - 12
6400-0820	3/4 - 16	1 5/8 - 12
6400-1004	7/8 - 14	7/16 - 20
6400-1006	7/8 - 14	9/16 - 18
6400-1008	7/8 - 14	3/4 - 16
6400-1010	7/8 - 14	7/8 - 14
6400-1012	7/8 - 14	1 1/16 - 12
6400-1016	7/8 - 14	1 5/16 - 12
6400-1206	1 1/16 - 12	9/16 - 18
6400-1208	1 1/16 - 12	3/4 - 16
6400-1210	1 1/16 - 12	7/8 - 14
6400-1212	1 1/16 - 12	1 1/16 - 12

Part Number	T1	T2
	MJIC	MORB
6400-1214	1 1/16 - 12	1 3/16 - 12
6400-1216	1 1/16 - 12	1 5/16 - 12
6400-1216	1 1/16 - 12	1 5/16 - 12
6400-1220	1 1/16 - 12	1 5/8 - 12
6400-1412	1 3/16 - 12	1 1/16 - 12
6400-1414	1 3/16 - 12	1 3/16 - 12
6400-1416	1 3/16 - 12	1 5/16 - 12
6400-1608	1 5/16 - 12	3/4 - 16
6400-1610	1 5/16 - 12	7/8 - 14
6400-1612	1 5/16 - 12	1 1/16 - 12
6400-1614	1 5/16 - 12	1 3/16 - 12
6400-1616	1 5/16 - 12	1 5/16 - 12
6400-1620	1 5/16 - 12	1 5/8 - 12
6400-1624	1 5/16 - 12	1 7/8 - 12
6400-2016	1 5/8 - 12	1 5/16 - 12
6400-2020	1 5/8 - 12	1 5/8 - 12
6400-2024	1 5/8 - 12	1 7/8 - 12
6400-2416	1 7/8 - 12	1 5/16 - 12
6400-2420	1 7/8 - 12	1 5/8 - 12
6400-2424	1 7/8 - 12	1 7/8 - 12
6400-2432	1 7/8 - 12	2 1/2 - 12
6400-3220	2 1/2 - 12	1 5/8 - 12
6400-3224	2 1/2 - 12	1 7/8 - 12
6400-3232	2 1/2 - 12	2 1/2 - 12

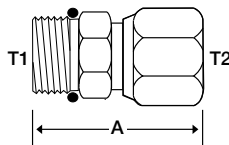
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6400L MJ - MORB Long



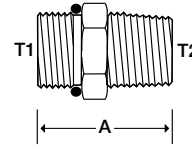
Part Number	T1	T2
	MJIC	MORB
6400L-0404	7/16 - 20	7/16 - 20
6400L-0505	1/2 - 20	1/2 - 20
6400L-0606	9/16 - 18	9/16 - 18
6400L-0608	9/16 - 18	3/4 - 16
6400L-0808	3/4 - 16	3/4 - 16
6400L-1010	7/8 - 14	7/8 - 14
6400L-1212	1 1/16 - 12	1 1/16 - 12
6400L-1616	1 5/16 - 12	1 5/16 - 12
6400L-2020	1 7/8 - 12	1 7/8 - 12

## 6402 MORB - FJX



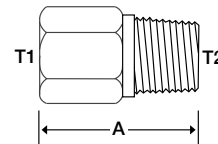
Part Number	T1	T2
	MORB	FJIC
6402-0406	7/16 - 20	9/16 - 18
6402-0606	9/16 - 18	9/16 - 18
6402-0608	9/16 - 18	3/4 - 16
6402-0808	3/4 - 16	3/4 - 16
6402-1010	7/8 - 14	7/8 - 14
6402-1212	1 1/16 - 12	1 1/16 - 12
6402-1616	1 5/16 - 12	1 5/16 - 12
6402-2020	1 7/8 - 12	1 7/8 - 12
6402-2424	1 7/8 - 12	1 7/8 - 12
6402-3232	2 1/2 - 12	2 1/2 - 12

## 6401 MORB - MP



Part Number	T1	T2
	MORB	MNPT
6401-0402	7/16 - 20	1/8 - 27
6401-0404	7/16 - 20	1/4 - 18
6401-0504	1/2 - 20	1/4 - 18
6401-0604	9/16 - 18	1/4 - 18
6401-0606	9/16 - 18	3/8 - 18
6401-0608	9/16 - 18	1/2 - 14
6401-0806	3/4 - 16	3/8 - 18
6401-0808	3/4 - 16	1/2 - 14
6401-0812	3/4 - 16	3/4 - 14
6401-1004	7/8 - 14	1/4 - 18
6401-1006	7/8 - 14	3/8 - 18
6401-1008	7/8 - 14	1/2 - 14
6401-1012	7/8 - 14	3/4 - 14
6401-1206	1 1/16 - 12	3/8 - 18
6401-1208	1 1/16 - 12	1/2 - 14
6401-1212	1 1/16 - 12	3/4 - 14
6401-1612	1 5/16 - 12	3/4 - 14
6401-1616	1 5/16 - 12	1 - 11 1/2
6401-2020	1 7/8 - 12	1 1/4 - 11 1/2
6401-2424	1 7/8 - 12	1 1/2 - 11 1/2
6401-3232	2 1/2 - 12	2 - 11 1/2

## 6404 FORB - MP

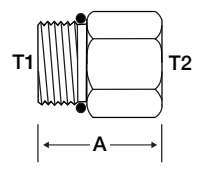


Part Number	T1	T2
	FORB	MNPT
6404-0402	7/16 - 20	1/8 - 27
6404-0404	7/16 - 20	1/4 - 18
6404-0406	7/16 - 20	3/8 - 18
6404-0502	1/2 - 20	1/8 - 27
6404-0604	9/16 - 18	1/4 - 18
6404-0606	9/16 - 18	3/8 - 18
6404-0608	9/16 - 18	1/2 - 14
6404-0806	3/4 - 16	3/8 - 18
6404-0808	3/4 - 16	1/2 - 14
6404-1008	7/8 - 14	1/2 - 14
6404-1212	1 1/16 - 12	3/4 - 14
6404-1616	1 5/16 - 12	1 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

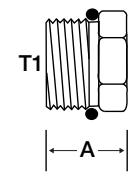
# JIC and Pipe

## 6405 MORB - FP



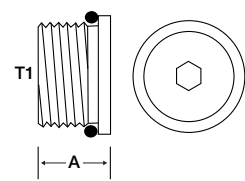
Part Number	T1	T2
	MORB	FNPT
6405-0402	7/16 - 20	1/8 - 27
6405-0404	7/16 - 20	1/4 - 18
6405-0406	7/16 - 20	3/8 - 18
6405-0502	1/2 - 20	1/8 - 27
6405-0504	1/2 - 20	1/4 - 18
6405-0602	9/16 - 18	1/8 - 27
6405-0604	9/16 - 18	1/4 - 18
6405-0606	9/16 - 18	3/8 - 18
6405-0608	9/16 - 18	1/2 - 14
6405-0802	3/4 - 16	1/8 - 27
6405-0804	3/4 - 16	1/4 - 18
6405-0806	3/4 - 16	3/8 - 18
6405-0808	3/4 - 16	1/2 - 14
6405-0812	3/4 - 16	3/4 - 14
6405-1004	7/8 - 14	1/4 - 18
6405-1006	7/8 - 14	3/8 - 18
6405-1008	7/8 - 14	1/2 - 14
6405-1012	7/8 - 14	3/4 - 14
6405-1204	1 1/16 - 12	1/4 - 18
6405-1206	1 1/16 - 12	3/8 - 18
6405-1208	1 1/16 - 12	1/2 - 14
6405-1212	1 1/16 - 12	3/4 - 14
6405-1216	1 1/16 - 12	1 - 11 1/2
6405-1412	1 3/16 - 12	3/4 - 14
6405-1606	1 5/16 - 12	3/8 - 18
6405-1608	1 5/16 - 12	1/2 - 14
6405-1612	1 5/16 - 12	3/4 - 14
6405-1616	1 5/16 - 12	1 - 11 1/2
6405-1620	1 5/16 - 12	1 1/4 - 11 1/2
6405-2012	1 5/8 - 12	3/4 - 14
6405-2016	1 5/8 - 12	1 - 11 1/2
6405-2020	1 5/8 - 12	1 1/4 - 11 1/2
6405-2024	1 5/8 - 12	1 1/2 - 11 1/2
6405-2412	1 7/8 - 12	3/4 - 14
6405-2416	1 7/8 - 12	1 - 11 1/2
6405-2420	1 7/8 - 12	1 1/4 - 11 1/2
6405-2424	1 7/8 - 12	1 1/2 - 11 1/2
6405-3232	2 1/2 - 12	2 - 11 1/2

## 6408 ORB Plug



Part Number	T1
	MORB
6408-02	5/16 - 24
6408-03	3/8 - 24
6408-04	7/16 - 20
6408-05	1/2 - 20
6408-06	9/16 - 18
6408-08	3/4 - 16
6408-10	7/8 - 14
6408-12	1 1/16 - 12
6408-14	1 3/16 - 12
6408-16	1 5/16 - 12
6408-20	1 5/8 - 12
6408-24	1 7/8 - 12
6408-32	2 1/2 - 12

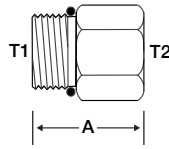
## 6408H ORB Hollow Hex Plug



Part Number	T1
	MORB
6408H-02	5/16 - 24
6408H-03	3/8 - 24
6408H-04	7/16 - 20
6408H-05	1/2 - 20
6408H-06	9/16 - 18
6408H-08	3/4 - 16
6408H-10	7/8 - 14
6408H-12	1 1/16 - 12
6408H-14	1 3/16 - 12
6408H-16	1 5/16 - 12
6408H-20	1 5/8 - 12
6408H-24	1 7/8 - 12
6408H-32	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

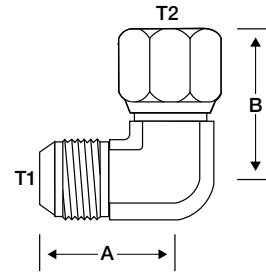
## 6410 MORB - FORB



Part Number	T1	T2
	MORB	FORB
6410-0204	5/16 - 24	7/16 - 20
6410-0402	7/16 - 20	5/16 - 24
6410-0404	7/16 - 20	7/16 - 20
6410-0406	7/16 - 20	9/16 - 18
6410-0408	7/16 - 20	3/4 - 16
6410-0504	1/2 - 20	7/16 - 20
6410-0506	1/2 - 20	9/16 - 18
6410-0604	9/16 - 18	7/16 - 20
6410-0606	9/16 - 18	9/16 - 18
6410-0608	9/16 - 18	3/4 - 16
6410-0804	3/4 - 16	7/16 - 20
6410-0806	3/4 - 16	9/16 - 18
6410-0808	3/4 - 16	3/4 - 16
6410-0810	3/4 - 16	7/8 - 14
6410-0812	3/4 - 16	1 1/16 - 12
6410-1004	7/8 - 14	7/16 - 20
6410-1006	7/8 - 14	9/16 - 18
6410-1008	7/8 - 14	3/4 - 16
6410-1012	7/8 - 14	1 1/16 - 12
6410-1206	1 1/16 - 12	9/16 - 18
6410-1208	1 1/16 - 12	3/4 - 16
6410-1210	1 1/16 - 12	7/8 - 14
6410-1212	1 1/16 - 12	1 1/16 - 12
6410-1216	1 1/16 - 12	1 5/16 - 12
6410-1412	1 3/16 - 12	1 1/16 - 12
6410-1608	1 5/16 - 12	3/4 - 16
6410-1610	1 5/16 - 12	7/8 - 14
6410-1612	1 5/16 - 12	1 1/16 - 12
6410-1614	1 5/16 - 12	1 3/16 - 12
6410-1616	1 5/16 - 12	1 5/16 - 12
6410-1620	1 5/16 - 12	1 5/8 - 12
6410-2006	1 5/16 - 12	9/16 - 18
6410-2008	1 5/8 - 12	3/4 - 16
6410-2010	1 5/8 - 12	7/8 - 14
6410-2012	1 5/8 - 12	1 1/16 - 12
6410-2016	1 5/8 - 12	1 5/16 - 12
6410-2024	1 5/8 - 12	1 7/8 - 12
6410-2412	1 7/8 - 12	1 1/16 - 12
6410-2416	1 7/8 - 12	1 5/16 - 12
6410-2420	1 7/8 - 12	1 5/8 - 12
6410-3220	2 1/2 - 12	1 5/8 - 12
6410-3224	2 1/2 - 12	1 7/8 - 12

## 6500 MJ - FJX 90°

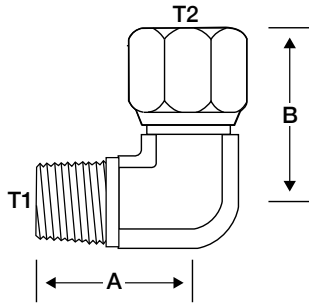
SAE# 070221



Part Number	T1	T2
	MJIC	FJIC
6500-0202	5/16 - 24	5/16 - 24
6500-0303	3/8 - 24	3/8 - 24
6500-0404	7/16 - 20	7/16 - 20
6500-0406	7/16 - 20	9/16 - 18
6500-0505	1/2 - 20	1/2 - 20
6500-0604	9/16 - 18	7/16 - 20
6500-0606	9/16 - 18	9/16 - 18
6500-0608	9/16 - 18	3/4 - 16
6500-0806	3/4 - 16	9/16 - 18
6500-0808	3/4 - 16	3/4 - 16
6500-0810	3/4 - 16	7/8 - 14
6500-0812	3/4 - 16	1 1/16 - 12
6500-1008	7/8 - 14	3/4 - 16
6500-1010	7/8 - 14	7/8 - 14
6500-1012	7/8 - 14	1 1/16 - 12
6500-1208	1 1/16 - 12	3/4 - 16
6500-1210	1 1/16 - 12	7/8 - 14
6500-1212	1 1/16 - 12	1 1/16 - 12
6500-1216	1 1/16 - 12	1 5/16 - 12
6500-1414	1 3/16 - 12	1 3/16 - 12
6500-1612	1 5/16 - 12	1 1/16 - 12
6500-1616	1 5/16 - 12	1 5/16 - 12
6500-2020	1 5/8 - 12	1 5/8 - 12
6500-2424	1 7/8 - 12	1 7/8 - 12
6500-3232	2 1/2 - 12	2 1/2 - 12

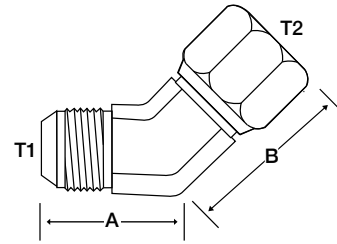
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6501 MP - FJX 90°



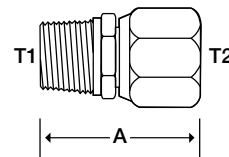
Part Number	T1	T2
	MNPT	FJIC
6501-0204	1/8 - 27	7/16 - 20
6501-0404	1/4 - 18	7/16 - 20
6501-0406	1/4 - 18	9/16 - 18
6501-0604	3/8 - 18	7/16 - 20
6501-0606	3/8 - 18	9/16 - 18
6501-0608	3/8 - 18	3/4 - 16
6501-0806	1/2 - 14	9/16 - 18
6501-0808	1/2 - 14	3/4 - 16
6501-0810	1/2 - 14	7/8 - 14
6501-1212	3/4 - 14	1 1/16 - 12
6501-1214	3/4 - 14	1 3/16 - 12
6501-1616	1 - 11 1/2	1 5/16 - 12
6501-2020	1 1/4 - 11 1/2	1 5/8 - 12
6501-2424	1 1/2 - 11 1/2	1 7/8 - 12
6501-3232	2 - 11 1/2	2 1/2 - 12

## 6502 MJ - FJX 45°

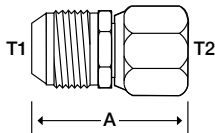


Part Number	T1	T2
	MJIC	FJIC
6502-0202	5/16 - 24	5/16 - 24
6502-0404	7/16 - 20	7/16 - 20
6502-0505	1/2 - 20	1/2 - 20
6502-0606	9/16 - 18	9/16 - 18
6502-0808	3/4 - 16	3/4 - 16
6502-1010	7/8 - 14	7/8 - 14
6502-1212	1 1/16 - 12	1 1/16 - 12
6502-1414	1 3/16 - 12	1 3/16 - 12
6502-1616	1 5/16 - 12	1 5/16 - 12
6502-2020	1 5/8 - 12	1 5/8 - 12
6502-2424	1 7/8 - 12	1 7/8 - 12
6502-3232	2 1/2 - 12	2 1/2 - 12

## 6505 MP - FJX Straight



## 6504 MJ - FJX Straight

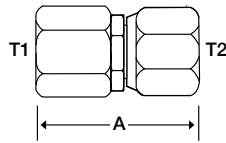


Part Number	T1	T2
	MJIC	FJIC
6504-0404	7/16 - 20	7/16 - 20
6504-0606	9/16 - 18	9/16 - 18
6504-0808	3/4 - 16	3/4 - 16
6504-1010	7/8 - 14	7/8 - 14
6504-1212	1 1/16 - 12	1 1/16 - 12
6504-1616	1 5/16 - 12	1 5/16 - 12
6504-2020	1 5/8 - 12	1 5/8 - 12

Part Number	T1	T2
	MNPT	FJIC
6505-0204	1/8 - 27	7/16 - 20
6505-0404	1/4 - 18	7/16 - 20
6505-0406	1/4 - 18	9/16 - 18
6505-0606	3/8 - 18	9/16 - 18
6505-0608	3/8 - 18	3/4 - 16
6505-0808	1/2 - 14	3/4 - 16
6505-0810	1/2 - 14	7/8 - 14
6505-0812	1/2 - 14	1 1/16 - 12
6505-1212	3/4 - 14	1 1/16 - 12
6505-1616	1 - 11 1/2	1 5/16 - 12
6505-2020	1 1/4 - 11 1/2	1 5/8 - 12
6505-2424	1 1/2 - 11 1/2	1 7/8 - 12

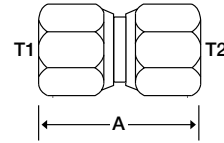
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6506 FP - FJX Straight



Part Number	T1	T2
	FNPT	FJIC
6506-0404	1/4 - 18	7/16 - 20
6506-0406	1/4 - 18	9/16 - 18
6506-0606	3/8 - 18	9/16 - 18
6506-0608	3/8 - 18	3/4 - 16
6506-0806	1/2 - 14	9/16 - 18
6506-0808	1/2 - 14	3/4 - 16
6506-0810	1/2 - 14	7/8 - 14
6506-1210	3/4 - 14	7/8 - 14
6506-1212	3/4 - 14	1 1/16 - 12
6506-1616	1 - 11 1/2	1 5/16 - 12
6506-2020	1 1/4 - 11 1/2	1 5/8 - 12

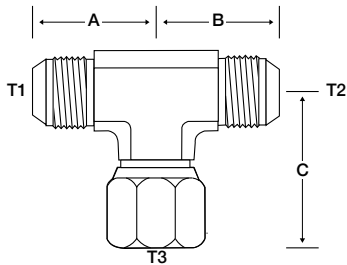
## 6565 FJX - FJX Straight



Part Number	T1	T2
	FJIC	FJIC
6565-0404	7/16 - 20	7/16 - 20
6565-0505	1/2 - 20	1/2 - 20
6565-0604	9/16 - 18	7/16 - 20
6565-0606	9/16 - 18	9/16 - 18
6565-0806	3/4 - 16	9/16 - 18
6565-0808	3/4 - 16	3/4 - 16
6565-1008	7/8 - 14	3/4 - 16
6565-1010	7/8 - 14	7/8 - 14
6565-1212	1 1/16 - 12	1 1/16 - 12
6565-1612	1 5/16 - 12	1 1/16 - 12
6565-1616	1 5/16 - 12	1 5/16 - 12
6565-2020	1 5/8 - 12	1 5/8 - 12
6565-2424	1 7/8 - 12	1 7/8 - 12

## 6600 MJ - MJ - FJTee

SAE# 070433



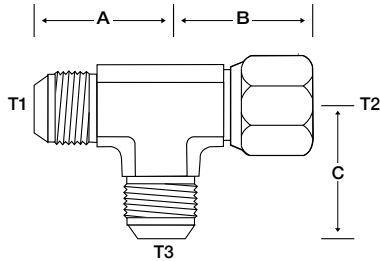
Part Number	T1 / T2	T3
	MJIC	FJIC
6600-030303	3/8 - 24	3/8 - 24
6600-040404	7/16 - 24	7/16 - 24
6600-050505	1/2 - 20	1/2 - 20
6600-060606	9/16 - 18	9/16 - 18
6600-060608	9/16 - 18	9/16 - 18
6600-080808	3/4 - 16	3/4 - 16
6600-101010	7/8 - 14	7/8 - 14
6600-121212	1 1/16 - 12	1 1/16 - 12
6600-141414	1 3/16 - 12	1 3/16 - 12
6600-161616	1 5/16 - 12	1 5/16 - 12
6600-202020	1 5/8 - 12	1 5/8 - 12
6600-242424	1 7/8 - 12	1 7/8 - 12
6600-323232	2 1/2 - 12	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# JIC and Pipe

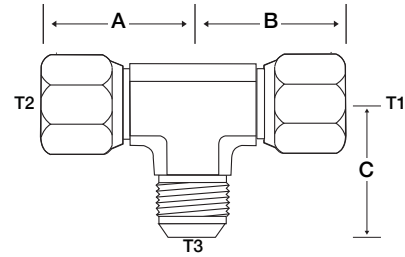
## 6602 MJ - FJX - MJ Tee

SAE# 070432



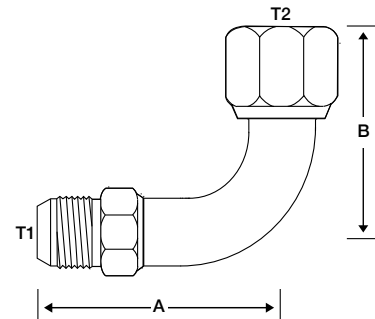
Part Number	T1 / T3	T2
	MJIC	FJIC
6602-030303	3/8 - 24	3/8 - 24
6602-040404	7/16 - 24	7/16 - 24
6602-050505	1/2 - 20	1/2 - 20
6602-060604	9/16 - 18	9/16 - 18
6602-060606	9/16 - 18	9/16 - 18
6602-080806	3/4 - 16	3/4 - 16
6602-080808	3/4 - 16	3/4 - 16
6602-080812	3/4 - 16	3/4 - 16
6602-101010	7/8 - 14	7/8 - 14
6602-101012	7/8 - 14	7/8 - 14
6602-121212	1 1/16 - 12	1 1/16 - 12
6602-141414	1 3/16 - 12	1 3/16 - 12
6602-161610	1 5/16 - 12	1 5/16 - 12
6602-161616	1 5/16 - 12	1 5/16 - 12
6602-202020	1 5/8 - 12	1 5/8 - 12
6602-242424	1 7/8 - 12	1 7/8 - 12
6602-323232	2 1/2 - 12	2 1/2 - 12

## 6603 FJX - FJX - MJ Tee



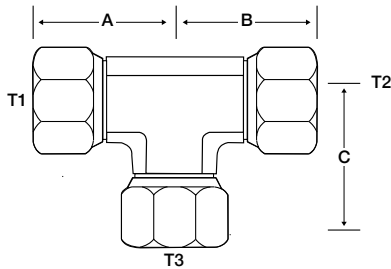
Part Number	T1 / T2	T3
	FJIC	MJIC
6603-080808	3/4 - 16	3/4 - 16
6603-101010	7/8 - 14	7/8 - 14
6603-121212	1 1/16 - 12	1 1/16 - 12
6603-161616	1 5/16 - 12	1 5/16 - 12

## 6701 MJ - FJX 90° Tube



Part Number	T1	T2
	MJIC	FJIC
6701-0404	7/16 - 20	7/16 - 20
6701-0606	9/16 - 18	9/16 - 18
6701-0808	3/4 - 16	3/4 - 16
6701-1010	7/8 - 14	7/8 - 14
6701-1212	1 1/16 - 12	1 1/16 - 12
6701-1616	1 5/16 - 12	1 5/16 - 12
6701-2020	1 5/8 - 12	1 5/8 - 12

## 6606 FJX - FJX - FJX Tee

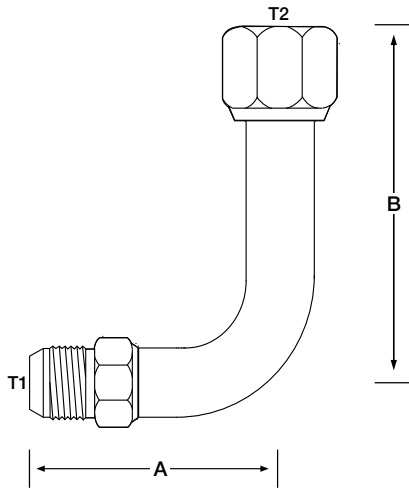


Part Number	T1 / T2 / T3
	FJIC
6606-040404	7/16 - 20
6606-060606	9/16 - 18
6606-080808	3/4 - 16
6606-121212	1 1/16 - 12
6606-161616	1 5/16 - 12

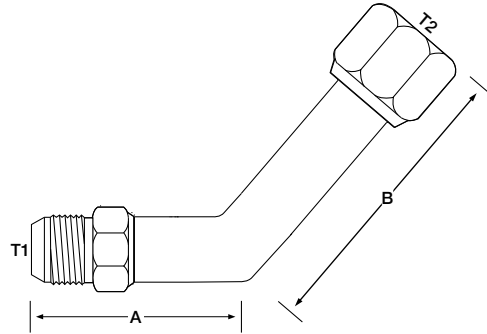
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## 6701L MJ - FJX 90° Long Tube



## 6702 MJ - FJX 45° Tube



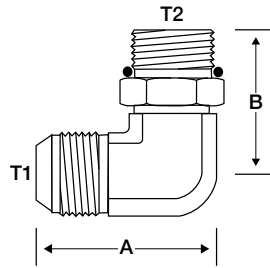
Part Number	T1	T2
	MJIC	FJIC
6701L-0404	7/16 - 20	7/16 - 20
6701L-0606	9/16 - 18	9/16 - 18
6701L-0808	3/4 - 16	3/4 - 16
6701L-1212	1 1/16 - 12	1 1/16 - 12
6701L-1616	1 5/16 - 12	1 5/16 - 12
6701L-2020	1 7/8 - 12	1 7/8 - 12

Part Number	T1	T2
	MJIC	FJIC
6702-0404	7/16 - 20	7/16 - 20
6702-0606	9/16 - 18	9/16 - 18
6702-0808	3/4 - 16	3/4 - 16
6702-1212	1 1/16 - 12	1 1/16 - 12
6702-1616	1 5/16 - 12	1 5/16 - 12
6702-2020	1 7/8 - 12	1 7/8 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6801 MJ - MAORB 90°

SAE# 070220

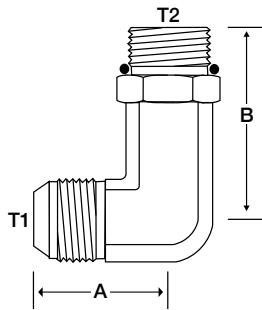


Part Number	T1	T2
	MJIC	MORB
6801-0202	5/16 - 24	5/16 - 24
6801-0303	3/8 - 24	3/8 - 24
6801-0402	7/16 - 20	5/16 - 24
6801-0403	7/16 - 20	3/8 - 24
6801-0404	7/16 - 20	7/16 - 20
6801-0405	7/16 - 20	1/2 - 20
6801-0406	7/16 - 20	9/16 - 18
6801-0408	7/16 - 20	3/4 - 16
6801-0504	1/2 - 20	7/16 - 20
6801-0505	1/2 - 20	1/2 - 20
6801-0506	1/2 - 20	9/16 - 18
6801-0508	1/2 - 20	3/4 - 16
6801-0604	9/16 - 18	7/16 - 24
6801-0605	9/16 - 18	1/2 - 20
6801-0606	9/16 - 18	9/16 - 18
6801-0608	9/16 - 18	3/4 - 16
6801-0610	9/16 - 18	7/8 - 14
6801-0612	9/16 - 18	1 1/16 - 12
6801-0804	3/4 - 16	7/16 - 20
6801-0806	3/4 - 16	9/16 - 18
6801-0808	3/4 - 16	3/4 - 16
6801-0810	3/4 - 16	7/8 - 14
6801-0812	3/4 - 16	1 1/16 - 12
6801-0816	3/4 - 16	1 5/16 - 12
6801-1006	7/8 - 14	9/16 - 18
6801-1008	7/8 - 14	3/4 - 16
6801-1010	7/8 - 14	7/8 - 14
6801-1012	7/8 - 14	1 1/16 - 12
6801-1016	7/8 - 14	1 5/16 - 12
6801-1206	1 1/16 - 12	9/16 - 18
6801-1208	1 1/16 - 12	3/4 - 16
6801-1210	1 1/16 - 12	7/8 - 14
6801-1212	1 1/16 - 12	1 1/16 - 12

Part Number	T1	T2
	MJIC	MORB
6801-1214	1 1/16 - 12	1 3/16 - 12
6801-1216	1 1/16 - 12	1 5/16 - 12
6801-1220	1 1/16 - 12	1 5/8 - 12
6801-1412	1 3/16 - 12	1 1/16 - 12
6801-1414	1 3/16 - 12	1 3/16 - 12
6801-1608	1 5/16 - 12	3/4 - 16
6801-1610	1 5/16 - 12	7/8 - 14
6801-1612	1 5/16 - 12	1 1/16 - 12
6801-1614	1 5/16 - 12	1 3/16 - 12
6801-1616	1 5/16 - 12	1 5/16 - 12
6801-1620	1 5/16 - 12	1 5/8 - 12
6801-1624	1 5/16 - 12	1 7/8 - 12
6801-2012	1 5/8 - 12	1 1/16 - 12
6801-2016	1 5/8 - 12	1 5/16 - 12
6801-2020	1 5/8 - 12	1 5/8 - 12
6801-2024	1 5/8 - 12	1 7/8 - 12
6801-2416	1 7/8 - 12	1 5/16 - 12
6801-2420	1 7/8 - 12	1 5/8 - 12
6801-2424	1 7/8 - 12	1 7/8 - 12
6801-3224	2 1/2 - 12	1 7/8 - 12
6801-3232	2 1/2 - 12	2 1/2 - 12

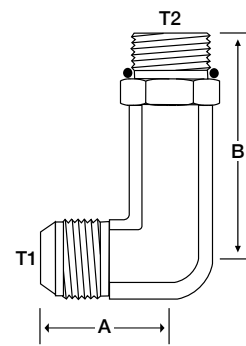
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6801L MJ - MAORB 90° Long



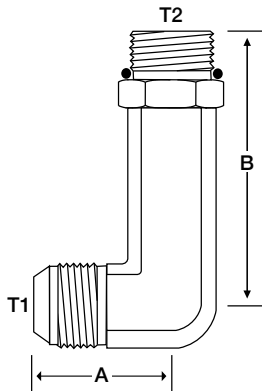
Part Number	T1	T2
	MJIC	MORB
6801L-0404	7/16 - 20	7/16 - 20
6801L-0406	7/16 - 20	9/16 - 18
6801L-0606	9/16 - 18	9/16 - 18
6801L-0608	9/16 - 18	3/4 - 16
6801L-0808	3/4 - 16	3/4 - 16
6801L-0810	3/4 - 16	7/8 - 14
6801L-1008	7/8 - 14	3/4 - 16
6801L-1010	7/8 - 14	7/8 - 14
6801L-1212	1 1/16 - 12	1 1/16 - 12
6801L-1616	1 5/16 - 12	1 5/16 - 12

## 6801LL MJ - MAORB 90° X-Long



Part Number	T1	T2
	MJIC	MORB
6801LL-0404	7/16 - 20	7/16 - 20
6801LL-0606	9/16 - 18	9/16 - 18
6801LL-0608	9/16 - 18	3/4 - 16
6801LL-0806	3/4 - 16	9/16 - 18
6801LL-0808	3/4 - 16	3/4 - 16
6801LL-0810	3/4 - 16	7/8 - 14
6801LL-1008	7/8 - 14	3/4 - 16
6801LL-1010	7/8 - 14	7/8 - 14
6801LL-1212	1 1/16 - 12	1 1/16 - 12
6801LL-1216	1 1/16 - 12	1 5/16 - 12
6801LL-1612	1 5/16 - 12	1 1/16 - 12
6801LL-1616	1 5/16 - 12	1 5/16 - 12
6801LL-2020	1 5/8 - 12	1 5/8 - 12

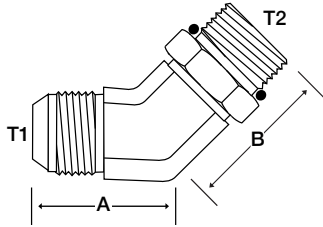
## 6801LLL MJ - MAORB 90° XX-Long



Part Number	T1	T2
	MJIC	MORB
6801LLL-0404	7/16 - 20	7/16 - 20
6801LLL-0606	9/16 - 18	9/16 - 18
6801LLL-0608	9/16 - 18	3/4 - 16
6801LLL-0808	3/4 - 16	3/4 - 16

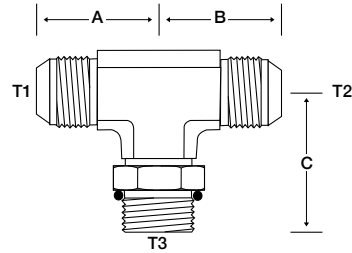
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6802 MJ - MAORB 45°



## 6803 MJ - MJ - MAORB Tee

SAE# 070429

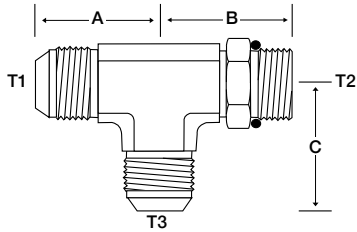


Part Number	T1	T2
	MJIC	MORB
6802-0202	5/16 - 24	5/16 - 24
6802-0404	7/16 - 20	7/16 - 20
6802-0405	7/16 - 20	1/2 - 20
6802-0406	7/16 - 20	9/16 - 18
6802-0408	7/16 - 20	3/4 - 16
6802-0504	1/2 - 20	7/16 - 20
6802-0505	1/2 - 20	1/2 - 20
6802-0506	1/2 - 20	9/16 - 18
6802-0604	9/16 - 18	7/16 - 20
6802-0605	9/16 - 18	1/2 - 20
6802-0606	9/16 - 18	9/16 - 18
6802-0608	9/16 - 18	3/4 - 16
6802-0610	9/16 - 18	7/8 - 14
6802-0804	3/4 - 16	7/16 - 20
6802-0806	3/4 - 16	9/16 - 18
6802-0808	3/4 - 16	3/4 - 16
6802-0810	3/4 - 16	7/8 - 14
6802-0812	3/4 - 16	1 1/16 - 12
6802-1008	7/8 - 14	3/4 - 16
6802-1010	7/8 - 14	7/8 - 14
6802-1012	7/8 - 14	1 1/16 - 12
6802-1208	1 1/16 - 12	3/4 - 16
6802-1210	1 1/16 - 12	7/8 - 14
6802-1212	1 1/16 - 12	1 1/16 - 12
6802-1216	1 1/16 - 12	1 5/16 - 12
6802-1414	1 3/16 - 12	1 3/16 - 12
6802-1612	1 5/16 - 12	1 1/16 - 12
6802-1616	1 5/16 - 12	1 5/16 - 12
6802-1620	1 5/16 - 12	1 5/8 - 12
6802-2016	1 5/8 - 12	1 5/16 - 12
6802-2020	1 5/8 - 12	1 5/8 - 12
6802-2424	1 7/8 - 12	1 7/8 - 12
6802-3232	2 1/2 - 12	2 1/2 - 12

Part Number	T1 / T2	T3
	MJIC	MORB
6803-040404	7/16 - 20	7/16 - 20
6803-040406	7/16 - 20	9/16 - 18
6803-050505	1/2 - 20	1/2 - 20
6803-060604	9/16 - 18	7/16 - 20
6803-060606	9/16 - 18	9/16 - 18
6803-060608	9/16 - 18	3/4 - 16
6803-080806	3/4 - 16	9/16 - 18
6803-080808	3/4 - 16	3/4 - 16
6803-080810	3/4 - 16	7/8 - 14
6803-101010	7/8 - 14	7/8 - 14
6803-101012	7/8 - 14	1 1/16 - 12
6803-121208	1 1/16 - 12	3/4 - 16
6803-121210	1 1/16 - 12	7/8 - 14
6803-121212	1 1/16 - 12	1 1/16 - 12
6803-121216	1 1/16 - 12	1 5/16 - 12
6803-161216	1 5/16 - 12	1 5/16 - 12
6803-161612	1 5/16 - 12	1 1/16 - 12
6803-161616	1 5/16 - 12	1 5/16 - 12
6803-202020	1 5/8 - 12	1 5/8 - 12
6803-242424	1 7/8 - 12	1 7/8 - 12
6803-323232	2 1/2 - 12	2 1/2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

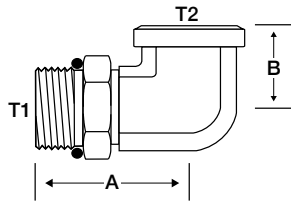
## 6804 MJ - MAORB - MJ Tee



Part Number	T1 / T3	T2
	MJIC	MORB
6804-040404	7/16 - 20	7/16 - 20
6804-040604	7/16 - 20	7/16 - 20
6804-050505	1/2 - 20	1/2 - 20
6804-060406	9/16 - 18	7/16 - 20
6804-060606	9/16 - 18	9/16 - 18
6804-060806	9/16 - 18	3/4 - 16
6804-080608	3/4 - 16	9/16 - 18
6804-080804	3/4 - 16	3/4 - 16
6804-080808	3/4 - 16	3/4 - 16
6804-081008	3/4 - 16	7/8 - 14
6804-101010	7/8 - 14	7/8 - 14
6804-101210	7/8 - 14	1 1/16 - 12
6804-121012	1 1/16 - 12	7/8 - 14
6804-121208	1 1/16 - 12	1 1/16 - 12
6804-121212	1 1/16 - 12	1 1/16 - 12
6804-121216	1 1/16 - 12	1 1/16 - 12
6804-121612	1 1/16 - 12	1 5/16 - 12
6804-161216	1 5/16 - 12	1 1/16 - 12
6804-161612	1 5/16 - 12	1 5/16 - 12
6804-161616	1 5/16 - 12	1 5/16 - 12
6804-202020	1 5/8 - 12	1 5/8 - 12
6804-242424	1 7/8 - 12	1 7/8 - 12
6804-323232	2 1/2 - 12	2 1/2 - 12

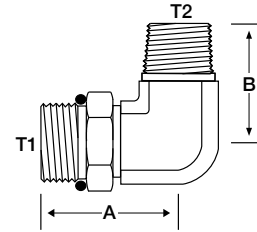
# JIC and Pipe

## 6805 MAORB - FP 90°



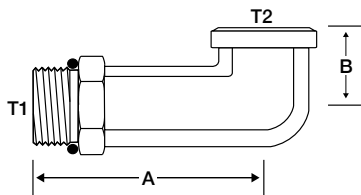
Part Number	T1	T2
	MORB	FNPT
6805-0402	7/16 - 20	1/8 - 27
6805-0404	7/16 - 20	1/4 - 18
6805-0406	7/16 - 20	3/8 - 18
6805-0502	1/2 - 20	1/8 - 27
6805-0604	9/16 - 18	1/4 - 18
6805-0606	9/16 - 18	3/8 - 18
6805-0806	3/4 - 16	3/8 - 18
6805-0808	3/4 - 16	1/2 - 14
6805-1006	7/8 - 14	3/8 - 18
6805-1008	7/8 - 14	1/2 - 14
6805-1208	1 1/16 - 12	1/2 - 14
6805-1212	1 1/16 - 12	3/4 - 14
6805-1412	1 3/16 - 12	3/4 - 14
6805-1612	1 5/16 - 12	3/4 - 14
6805-1616	1 5/16 - 12	1 - 11 1/2
6805-2020	1 5/8 - 12	1 1/4 - 11 1/2
6805-2424	1 7/8 - 12	1 1/2 - 11 1/2
6805-3232	2 1/2 - 12	2 - 11 1/2

## 6806 MAORB - MP 90°



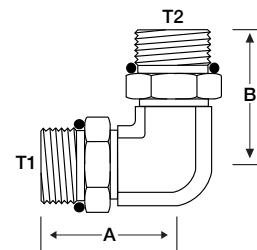
Part Number	T1	T2
	MORB	MNPT
6806-0402	7/16 - 20	1/8 - 27
6806-0404	7/16 - 20	1/4 - 18
6806-0502	1/2 - 20	1/8 - 27
6806-0604	9/16 - 18	1/4 - 18
6806-0606	9/16 - 18	3/8 - 18
6806-0806	3/4 - 16	3/8 - 18
6806-0808	3/4 - 16	1/2 - 14
6806-1008	7/8 - 14	1/2 - 1
6806-1212	1 1/16 - 12	3/4 - 14
6806-1412	1 3/16 - 12	3/4 - 14
6806-1612	1 5/16 - 12	3/4 - 14
6806-1616	1 5/16 - 12	1 - 11 1/2
6806-2020	1 5/8 - 12	1 1/4 - 11 1/2
6806-2424	1 7/8 - 12	1 1/2 - 11 1/2
6806-3232	2 1/2 - 12	2 - 11 1/2

## 6805L MAORB - FP 90° Long



Part Number	T1	T2
	MORB	FNPT
6805L-0808	3/4 - 16	1/2 - 14
6805L-1008	7/8 - 14	1/2 - 14
6805L-1212	1 1/16 - 12	3/4 - 14

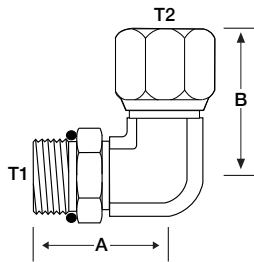
## 6807 MAORB - MAORB 90°



Part Number	T1	T2
	MORB	MORB
6807-0404	7/16 - 20	7/16 - 20
6807-0606	9/16 - 18	9/16 - 18
6807-0806	3/4 - 16	9/16 - 18
6807-0808	3/4 - 16	3/4 - 16
6807-1008	7/8 - 14	3/4 - 16
6807-1010	7/8 - 14	7/8 - 14
6807-1212	1 1/16 - 12	1 1/16 - 12
6807-1616	1 5/16 - 12	1 5/16 - 12
6807-2020	1 5/8 - 12	1 5/8 - 12
6807-2424	1 7/8 - 12	1 7/8 - 12

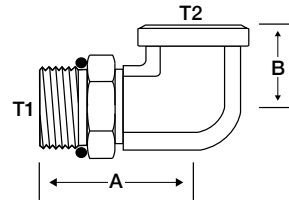
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 6809 MAORB - FJX 90°



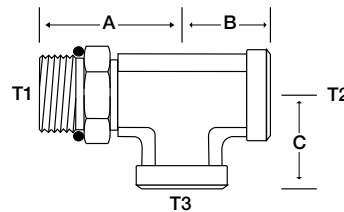
Part Number	T1	T2
	MORB	FJIC
6809-0404	7/16 - 20	7/16 - 20
6809-0604	9/16 - 18	7/16 - 20
6809-0606	9/16 - 18	9/16 - 18
6809-0806	3/4 - 16	9/16 - 18
6809-0808	3/4 - 16	3/4 - 16
6809-1010	7/8 - 14	7/8 - 14
6809-1210	1 1/16 - 12	7/8 - 14
6809-1212	1 1/16 - 12	1 1/16 - 12
6809-1616	1 5/16 - 12	1 5/16 - 12
6809-2020	1 5/8 - 12	1 5/8 - 12
6809-0404	7/16 - 20	7/16 - 20
6809-0604	9/16 - 18	7/16 - 20
6809-0606	9/16 - 18	9/16 - 18
6809-0806	3/4 - 16	9/16 - 18
6809-0808	3/4 - 16	3/4 - 16
6809-1010	7/8 - 14	7/8 - 14
6809-1210	1 1/16 - 12	7/8 - 14
6809-1212	1 1/16 - 12	1 1/16 - 12
6809-1616	1 5/16 - 12	1 5/16 - 12
6809-2020	1 5/8 - 12	1 5/8 - 12

## 6815 MAORB - FORB 90°



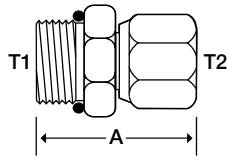
Part Number	T1	T2
	MORB	FORB
6815-0404	7/16 - 20	7/16 - 20
6815-0606	9/16 - 18	9/16 - 18
6815-0808	3/4 - 16	3/4 - 16
6815-1010	7/8 - 14	7/8 - 14
6815-1212	1 1/16 - 12	1 1/16 - 12
6815-1616	1 5/16 - 12	1 5/16 - 12

## 6835 MAORB - FORB - FORB Tee



Part Number	T1	T2 / T3
	MORB	FORB
6835-040404	7/16 - 20	7/16 - 20
6835-060606	9/16 - 18	9/16 - 18
6835-080808	3/4 - 16	3/4 - 16
6835-121212	1 1/16 - 12	1 1/16 - 12
6835-161616	1 5/16 - 12	1 5/16 - 12

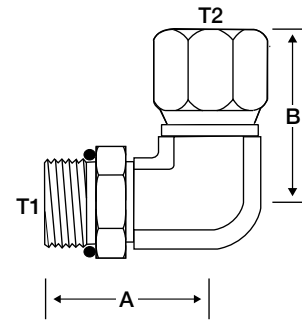
## 6900 MAORB - FPX



Part Number	T1	T2
	MORB	FNPSM
6900-0404	7/16 - 20	1/4 - 18
6900-0406	7/16 - 20	3/8 - 18
6900-0504	1/2 - 20	1/4 - 18
6900-0604	9/16 - 18	1/4 - 18
6900-0606	9/16 - 18	3/8 - 18
6900-0608	9/16 - 18	1/2 - 14
6900-0804	3/4 - 16	1/4 - 18
6900-0806	3/4 - 16	3/8 - 18
6900-0808	3/4 - 16	1/2 - 14
6900-0812	3/4 - 16	3/4 - 14
6900-1006	7/8 - 14	3/8 - 18
6900-1008	7/8 - 14	1/2 - 14
6900-1012	7/8 - 14	3/4 - 14
6900-1206	1 1/16 - 12	3/8 - 18
6900-1208	1 1/16 - 12	1/2 - 14
6900-1212	1 1/16 - 12	3/4 - 14
6900-1216	1 1/16 - 12	1 - 11 1/2
6900-1412	1 3/16 - 12	3/4 - 14
6900-1612	1 5/16 - 12	3/4 - 14
6900-1616	1 5/16 - 12	1 - 11 1/2
6900-1620	1 5/16 - 12	1 1/4 - 11 1/2
6900-2016	1 5/8 - 12	1 - 11 1/2
6900-2020	1 5/8 - 12	1 1/4 - 11 1/2
6900-2424	1 7/8 - 12	1 1/2 - 11 1/2
6900-3232	2 1/2 - 12	2 - 11 1/2

## 6901 MAORB - FPX 90°

SAE# 140257



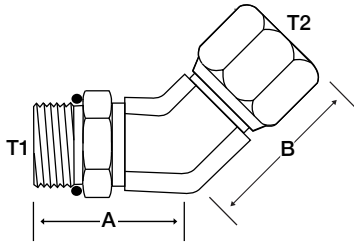
Part Number	T1	T2
	MORB	FNPSM
6901-0404	7/16 - 20	1/4 - 18
6901-0406	7/16 - 20	3/8 - 18
6901-0604	9/16 - 18	1/4 - 18
6901-0606	9/16 - 18	3/8 - 18
6901-0608	9/16 - 18	1/2 - 14
6901-0804	3/4 - 16	1/4 - 18
6901-0806	3/4 - 16	3/8 - 18
6901-0808	3/4 - 16	1/2 - 14
6901-0812	3/4 - 16	3/4 - 14
6901-1006	7/8 - 14	3/8 - 18
6901-1008	7/8 - 14	1/2 - 14
6901-1012	7/8 - 14	3/4 - 14
6901-1206	1 1/16 - 12	3/8 - 18
6901-1208	1 1/16 - 12	1/2 - 14
6901-1212	1 1/16 - 12	3/4 - 14
6901-1216	1 1/16 - 12	1 - 11 1/2
6901-1412	1 3/16 - 12	3/4 - 14
6901-1612	1 5/16 - 12	3/4 - 14
6901-1616	1 5/16 - 12	1 - 11 1/2
6901-1620	1 5/16 - 12	1 1/4 - 11 1/2
6901-2012	1 5/8 - 12	3/4 - 14
6901-2016	1 5/8 - 12	1 - 11 1/2
6901-2020	1 5/8 - 12	1 1/4 - 11 1/2
6901-2420	1 7/8 - 12	1 1/4 - 11 1/2
6901-2424	1 7/8 - 12	1 1/2 - 11 1/2
6901-3232	2 1/2 - 12	2 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



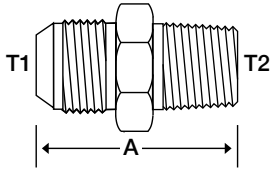
## 6902 MAORB - FPX 45°

SAE# 140357

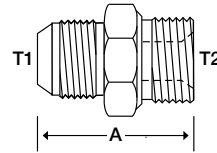


Part Number	T1	T2
	MORB	FNPSM
6902-0404	7/16 - 20	1/4 - 18
6902-0604	9/16 - 18	1/4 - 18
6902-0606	9/16 - 18	3/8 - 18
6902-0608	9/16 - 18	1/2 - 14
6902-0806	3/4 - 16	3/8 - 18
6902-0808	3/4 - 16	1/2 - 14
6902-0812	3/4 - 16	3/4 - 14
6902-1006	7/8 - 14	3/8 - 18
6902-1008	7/8 - 14	1/2 - 14
6902-1012	7/8 - 14	3/4 - 14
6902-1206	1 1/16 - 12	3/8 - 18
6902-1208	1 1/16 - 12	1/2 - 14
6902-1212	1 1/16 - 12	3/4 - 14
6902-1616	1 5/16 - 12	1 - 11 1/2
6902-2020	1 5/8 - 12	1 1/4 - 11 1/2
6902-2424	1 7/8 - 12	1 1/2 - 11 1/2

## 7000 MJ - MBSPT Straight



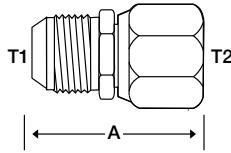
## 7002 MJ - MBSPP Straight



Part Number	T1	T2
	MJIC	MBSPT
7000-0402	7/16 - 20	1/8 - 28
7000-0404	7/16 - 20	1/4 - 19
7000-0406	7/16 - 20	3/8 - 19
7000-0604	9/16 - 18	1/4 - 19
7000-0606	9/16 - 18	3/8 - 19
7000-0608	9/16 - 18	1/2 - 14
7000-0806	3/4 - 16	3/8 - 19
7000-0808	3/4 - 16	1/2 - 14
7000-1006	7/8 - 14	3/8 - 19
7000-1008	7/8 - 14	1/2 - 14
7000-1212	1 1/16 - 12	3/4 - 14
7000-1612	1 5/16 - 12	3/4 - 14
7000-1616	1 5/16 - 12	1 - 11

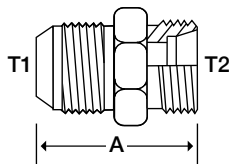
Part Number	T1	T2
	MJIC	MBSPP
7002-0402	7/16 - 20	1/8 - 28
7002-0404	7/16 - 20	1/4 - 19
7002-0406	7/16 - 20	3/8 - 19
7002-0408	7/16 - 20	1/2 - 14
7002-0602	9/16 - 18	1/8 - 28
7002-0604	9/16 - 18	1/4 - 19
7002-0606	9/16 - 18	3/8 - 19
7002-0608	9/16 - 18	1/2 - 14
7002-0610	9/16 - 18	5/8 - 14
7002-0804	3/4 - 16	1/4 - 19
7002-0806	3/4 - 16	3/8 - 19
7002-0808	3/4 - 16	1/2 - 14
7002-0810	3/4 - 16	5/8 - 14
7002-0812	3/4 - 16	3/4 - 14
7002-0816	3/4 - 16	1 - 11
7002-1006	7/8 - 14	3/8 - 19
7002-1008	7/8 - 14	1/2 - 14
7002-1010	7/8 - 14	5/8 - 14
7002-1012	7/8 - 14	3/4 - 14
7002-1208	1 1/16 - 12	1/2 - 14
7002-1210	1 1/16 - 12	5/8 - 14
7002-1212	1 1/16 - 12	3/4 - 14
7002-1216	1 1/16 - 12	1 - 11
7002-1220	1 1/16 - 12	1 1/4 - 11
7002-1608	1 5/16 - 12	1/2 - 14
7002-1612	1 5/16 - 12	3/4 - 14
7002-1616	1 5/16 - 12	1 - 11
7002-1620	1 5/16 - 12	1 1/4 - 11
7002-2016	1 5/8 - 12	1 - 11
7002-2020	1 5/8 - 12	1 1/4 - 11
7002-2024	1 5/8 - 12	1 1/2 - 11
7002-2424	1 7/8 - 12	1 1/2 - 11

## 7004 MJ - FBSP



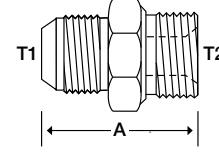
Part Number	T1	T2
	MJIC	FBSP
7004-0402	7/16 - 20	1/8 - 28
7004-0404	7/16 - 20	1/4 - 19
7004-0406	7/16 - 20	3/8 - 19
7004-0408	7/16 - 20	1/2 - 14
7004-0604	9/16 - 18	1/4 - 19
7004-0606	9/16 - 18	3/8 - 19
7004-0608	9/16 - 18	1/2 - 14
7004-0806	3/4 - 16	3/8 - 19
7004-0808	3/4 - 16	1/2 - 14
7004-0810	3/4 - 16	5/8 - 14
7004-0812	3/4 - 16	3/4 - 14
7004-1008	7/8 - 14	1/2 - 14
7004-1012	7/8 - 14	3/4 - 14
7004-1212	1 1/16 - 12	3/4 - 14
7004-1216	1 1/16 - 12	1 - 11
7004-1616	1 5/16 - 12	1 - 11

## 7005S MJ - MMS Heavy Metric



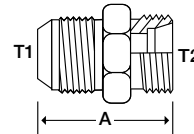
Part Number	T1	T2	
	MJIC	Heavy	Tube
7005S-0414	7/16 - 20	M14 x 1.5	S6
7005S-0416	7/16 - 20	M16 x 1.5	S8
7005S-0618	9/16 - 18	M18 x 1.5	S10
7005S-0620	9/16 - 18	M20 x 1.5	S12
7005S-0818	3/4 - 16	M18 x 1.5	S10
7005S-0820	3/4 - 16	M20 x 1.5	S12
7005S-0822	3/4 - 16	M22 x 1.5	S14
7005S-1024	7/8 - 14	M24 x 1.5	S16
7005S-1230	1 1/16 - 12	M30 x 2.0	S20
7005S-1236	1 1/16 - 12	M36 x 2.0	S25
7005S-1642	1 5/16 - 12	M42 x 2.0	S30
7005S-2052	1 7/8 - 12	M52 x 2.0	S38

## 7005 MJ - MM Metric Port



Part Number	T1	T2
	MJIC	Metric Port
7005-0412	7/16 - 20	M12 x 1.5
7005-0414	7/16 - 20	M14 x 1.5
7005-0614	9/16 - 18	M14 x 1.5
7005-0616	9/16 - 18	M16 x 1.5
7005-0618	9/16 - 18	M18 x 1.5
7005-0620	9/16 - 18	M20 x 1.5
7005-0820	3/4 - 16	M20 x 1.5
7005-0822	3/4 - 16	M22 x 1.5
7005-1226	1 1/16 - 12	M26 x 1.5

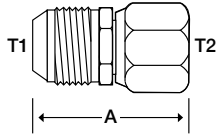
## 7005L MJ - MML Light Metric



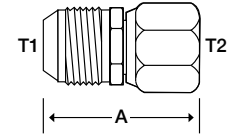
Part Number	T1	T2	
	MJIC	Light	Tube
7005L-0412	7/16 - 24	M12 x 1.5	L6
7005L-0414	7/16 - 20	M14 x 1.5	L8
7005L-0616	9/16 - 18	M16 x 1.5	L10
7005L-0618	9/16 - 18	M18 x 1.5	L12
7005L-0816	3/4 - 16	M16 x 1.5	L10
7005L-0818	3/4 - 16	M18 x 1.5	L12
7005L-1022	7/8 - 14	M22 x 1.5	L15
7005L-1222	1 1/16 - 12	M22 x 1.5	L15
7005L-1226	1 1/16 - 12	M26 x 1.5	L18
7005L-1230	1 1/16 - 12	M30 x 2.0	L22
7005L-1636	1 5/16 - 12	M36 x 2.0	L28
7005L-2045	1 7/8 - 12	M45 x 2.0	L35

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 7007L MJ-FML Light Metric



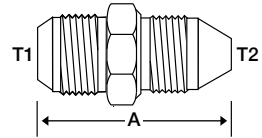
## 7007S MJ-FMS Heavy Metric



Part Number	T1	T2	Tube
	MJIC	Light	
7007L-0412	7/16 - 20	M12 X 1.5	L6
7007L-0414	7/16 - 20	M14 X 1.5	L8
7007L-0514	1/2 - 20	M14 X 1.5	L8
7007L-0516	1/2 - 20	M16 X 1.5	L10
7007L-0614	9/16 - 18	M14 X 1.5	L8
7007L-0616	9/16 - 18	M16 X 1.5	L10
7007L-0618	9/16 - 18	M18 X 1.5	L12
7007L-0622	9/16 - 18	M22 X 1.5	L15
7007L-0818	3/4 - 16	M18 X 1.5	L12
7007L-0822	3/4 - 14	M22 X 1.5	L15
7007L-1022	7/8 - 14	M22 X 1.5	L15
7007L-1026	7/8 - 14	M26 X 1.5	L18
7007L-1226	1 1/16 - 12	M26 X 1.5	L18
7007L-1230	1 1/16 - 12	M30 X 2.0	L22
7007L-1636	1 5/16 - 12	M36 X 2.0	L28
7007L-2036	1 5/8 - 12	M36 X 2.0	L28
7007L-2045	1 5/8 - 12	M45 X 2.0	L35
7007L-2452	1 7/8 - 12	M52 X 2.0	L42

Part Number	T1	T2	Tube
	MJIC	Heavy	
7007S-0414	7/16 - 20	M14 X 1.5	S6
7007S-0514	1/2 - 20	M14 X 1.5	S6
7007S-0516	1/2 - 20	M16 X 1.5	S8
7007S-0614	9/16 - 18	M14 X 1.5	S6
7007S-0616	9/16 - 18	M16 X 1.5	S8
7007S-0618	9/16 - 18	M18 X 1.5	S10
7007S-0622	9/16 - 18	M22 X 1.5	S14
7007S-0818	3/4 - 16	M18 X 1.5	S10
7007S-0822	3/4 - 16	M22 X 1.5	S14
7007S-1022	7/8 - 14	M22 X 1.5	S14
7007S-1230	1 1/16 - 12	M30 X 2.0	S20
7007S-1636	1 5/16 - 12	M36 X 2.0	S25
7007S-2036	1 5/8 - 12	M36 X 2.0	S25
7007S-2045	1 5/8 - 12	M45 X 2.0	S30
7007S-2052	1 7/8 - 12	M52 X 2.0	S38
7007S-2452	1 7/8 - 12	M52 X 2.0	S38

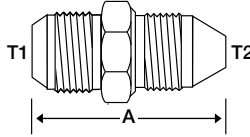
## 7008 MJ - MJIS



Part Number	T1	T2
	MJIC	MJIS
7008-0404	7/16 - 20	1/4 - 19
7008-0606	9/16 - 18	3/8 - 19
7008-0808	3/4 - 16	1/2 - 14
7008-1212	1 1/16 - 12	3/4 - 14
7008-1616	1 5/8 - 12	1 - 11

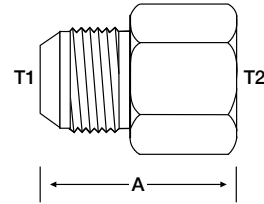
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 7009 MJ - MK Komatsu



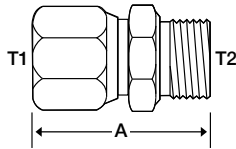
Part Number	T1	T2
	MJIC	MK
7009-0414	$\frac{7}{16}$ - 20	M14 x 1.5
7009-0618	$\frac{9}{16}$ - 18	M18 x 1.5
7009-0822	$\frac{3}{4}$ - 16	M22 x 1.5
7009-1024	$\frac{7}{8}$ - 14	M24 x 1.5
7009-1230	$1\frac{1}{16}$ - 12	M30 x 1.5
7009-1633	$1\frac{5}{16}$ - 12	M33 x 1.5

## 7009F MJ - FK Komatsu



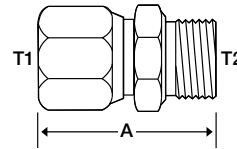
Part Number	T1	T2
	MJIC	FK
7009-F-0414	$\frac{7}{16}$ - 20	M14 x 1.5
7009-F-0618	$\frac{9}{16}$ - 18	M18 x 1.5
7009-F-0822	$\frac{3}{4}$ - 16	M22 x 1.5
7009-F-1024	$\frac{7}{8}$ - 14	M24 x 1.5
7009-F-1230	$1\frac{1}{16}$ - 12	M30 x 1.5
7009-F-1633	$1\frac{5}{16}$ - 12	M33 x 1.5

## 7022 FXJ - MBSPP



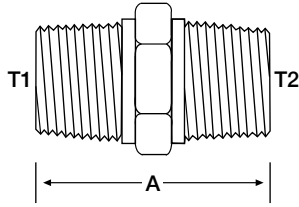
Part Number	T1	T2
	FJIC	MBSPP
7022-0404	$\frac{7}{16}$ - 20	$\frac{1}{4}$ - 19
7022-0406	$\frac{9}{16}$ - 18	$\frac{1}{4}$ - 19
7022-0606	$\frac{9}{16}$ - 18	$\frac{3}{8}$ - 19
7022-0808	$\frac{3}{4}$ - 16	$\frac{1}{2}$ - 14
7022-1212	$1\frac{1}{16}$ - 12	$\frac{3}{4}$ - 14
7022-1616	$1\frac{5}{16}$ - 12	1 - 11

## 7025 FXJ - MM Metric Port



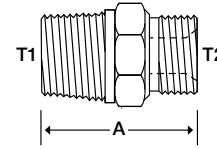
Part Number	T1	T2
	FJIC	Metric Port
7025-0614	$\frac{9}{16}$ - 18	M14 x 1.5
7025-0818	$\frac{3}{4}$ - 16	M18 x 1.5

## 7030 MP - MBSPT



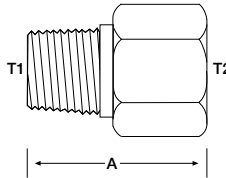
Part Number	T1	T2
	MNPT	MBSPT
7030-0202	1/8 - 27	1/8 - 28
7030-0404	1/4 - 18	1/4 - 19
7030-0406	1/4 - 18	3/8 - 19
7030-0606	3/8 - 18	3/8 - 19
7030-0808	1/2 - 14	1/2 - 14
7030-1212	3/4 - 14	3/4 - 14
7030-1616	1 - 11 1/2	1 - 11

## 7032 MP - MBSPP



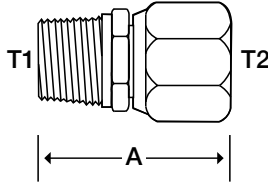
Part Number	T1	T2
	MNPT	MBSPP
7032-0202	1/8 - 28	1/8 - 27
7032-0204	1/8 - 28	1/4 - 18
7032-0402	1/4 - 19	1/8 - 27
7032-0404	1/4 - 19	1/4 - 18
7032-0406	1/4 - 19	3/8 - 18
7032-0408	1/4 - 19	1/2 - 14
7032-0604	3/8 - 19	1/4 - 18
7032-0606	3/8 - 19	3/8 - 18
7032-0608	3/8 - 19	1/2 - 14
7032-0804	1/2 - 14	1/4 - 18
7032-0806	1/2 - 14	3/8 - 18
7032-0808	1/2 - 14	1/2 - 14
7032-0810	1/2 - 14	5/8 - 14
7032-0812	1/2 - 14	3/4 - 14
7032-0816	1/2 - 14	3/4 - 14
7032-1208	3/4 - 14	1/2 - 14
7032-1210	3/4 - 14	5/8 - 14
7032-1212	3/4 - 14	3/4 - 14
7032-1216	3/4 - 14	1 - 11
7032-1612	1 - 11	3/4 - 14
7032-1616	1 - 11	1 - 11
7032-1620	1 - 11	1 1/4 - 11
7032-2012	1 1/4 - 11 1/2	3/4 - 14
7032-2016	1 1/4 - 11 1/2	1 - 11
7032-2020	1 1/4 - 11 1/2	1 1/4 - 11
7032-2024	1 1/4 - 11 1/2	1 1/4 - 11
7032-2424	1 1/2 - 11 1/2	1 1/2 - 11
7032-2432	1 1/2 - 11 1/2	2 - 11
7032-3232	2 - 11 1/2	2 - 11

## 7033 MP - FBSPP



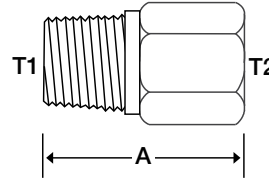
Part Number	T1	T2
	MNPT	FBSPP
7033-0202	1/8 - 27	1/8 - 28
7033-0404	1/4 - 18	1/4 - 19
7033-0604	3/8 - 18	1/4 - 19
7033-0606	3/8 - 18	3/8 - 19
7033-0804	1/2 - 14	1/4 - 19
7033-0806	1/2 - 14	3/8 - 19
7033-0808	1/2 - 14	1/2 - 14
7033-1208	3/4 - 14	1/2 - 14
7033-1212	3/4 - 14	3/4 - 14
7033-1616	1 - 11 1/2	1 - 11
7033-2020	1 1/4 - 11 1/2	1 1/4 - 11
7033-2424	1 1/2 - 11 1/2	1 1/2 - 11

## 7034 MP - FBSPPX



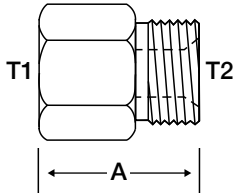
Part Number	T1	T2
	MNPT	FBSP
7034-0404	1/4 - 18	1/4 - 19
7034-0604	3/8 - 18	1/4 - 19
7034-0606	3/8 - 18	3/8 - 19
7034-0608	3/8 - 18	1/2 - 14
7034-0806	1/2 - 14	3/8 - 19
7034-0808	1/2 - 14	1/2 - 14
7034-1212	3/4 - 14	3/4 - 14
7034-1616	1 - 11 1/2	1 - 11
7034-2020	1 1/4 - 11 1/2	1 1/4 - 11
7034-2424	1 1/2 - 11 1/2	1 1/2 - 11
7034-3232	2 - 11 1/2	2 - 11

## 7040 MBSPT - FP



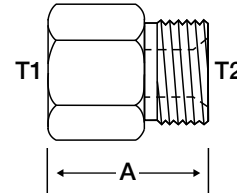
Part Number	T1	T2
	MBSPT	FNPT
7040-0202	1/8 - 28	1/8 - 27
7040-0404	1/4 - 19	1/4 - 18
7040-0606	3/8 - 19	3/8 - 18
7040-0808	1/2 - 14	1/2 - 14
7040-1212	3/4 - 14	3/4 - 14

## 7042 FP - MBSP



Part Number	T1	T2
	FNPT	MBSSP
7042-0202	1/8 - 27	1/8 - 28
7042-0204	1/8 - 27	1/4 - 19
7042-0404	1/4 - 19	1/4 - 28
7042-0406	1/4 - 19	3/8 - 19
7042-0408	1/4 - 19	1/2 - 14
7042-0604	3/8 - 18	1/4 - 19
7042-0606	3/8 - 18	3/8 - 19
7042-0608	3/8 - 18	1/2 - 14
7042-0808	1/2 - 14	1/2 - 14
7042-0812	1/2 - 14	3/4 - 14
7042-1212	3/4 - 14	3/4 - 14
7042-1216	3/4 - 14	1 - 11
7042-1616	1 - 11 1/2	1 - 11
7042-2020	1 1/4 - 11 1/2	1 1/4 - 11
7042-2424	1 1/2 - 11 1/2	1 1/2 - 11
7042-3232	2 - 11 1/2	2 - 11

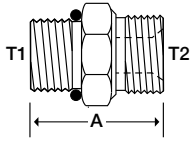
## 7045 FP - MM Metric Port



Part Number	T1	T2
	FNPT	Metric Port
7045-0418	1/4	M18 x 1.5
7045-0420	1/4	M20 x 1.5
7045-0612	3/8	M12 x 1.5
7045-0616	3/8	M16 x 1.5
7045-0618	3/8	M18 x 1.5
7045-0620	3/8	M20 x 1.5
7045-0622	3/8	M22 x 1.5
7045-0816	1/2	M16 x 1.5
7045-0818	1/2	M18 x 1.5
7045-0822	1/2	M22 x 1.5
7045-1224	3/4	M24 x 1.5
7045-1226	3/4	M26 x 1.5
7045-1227	3/4	M27 x 1.5
7045-1230	3/4	M30 x 1.5
7045-1633	1	M33 x 1.5

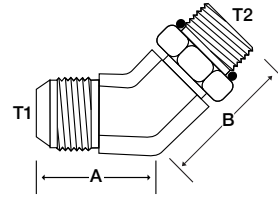
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 7062 MORB - MBSPP



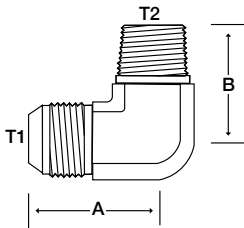
Part Number	T1	T2
	MORB	MBSPP
7062-0404	$\frac{7}{16}$ - 20	$\frac{1}{4}$ - 19
7062-0406	$\frac{7}{16}$ - 20	$\frac{3}{8}$ - 19
7062-0604	$\frac{9}{16}$ - 18	$\frac{1}{4}$ - 19
7062-0606	$\frac{9}{16}$ - 18	$\frac{3}{8}$ - 19
7062-0608	$\frac{9}{16}$ - 18	$\frac{1}{2}$ - 14
7062-0806	$\frac{3}{4}$ - 16	$\frac{3}{8}$ - 19
7062-0808	$\frac{3}{4}$ - 16	$\frac{1}{2}$ - 14
7062-1006	$\frac{7}{8}$ - 14	$\frac{3}{8}$ - 19
7062-1008	$\frac{7}{8}$ - 14	$\frac{1}{2}$ - 14
7062-1212	$1\frac{1}{16}$ - 12	$\frac{3}{4}$ - 14
7062-1616	$1\frac{5}{16}$ - 12	1 - 11

## 7102 MJ - MABSPP 45°



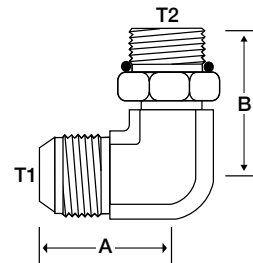
Part Number	T1	T2
	MJIC	MBSPP
7102-0404	$\frac{7}{16}$ - 20	$\frac{1}{4}$ - 19
7102-0606	$\frac{9}{16}$ - 18	$\frac{3}{8}$ - 19
7102-0808	$\frac{3}{4}$ - 16	$\frac{1}{2}$ - 14
7102-1212	$1\frac{1}{16}$ - 12	$\frac{3}{4}$ - 14
7102-1616	$1\frac{5}{16}$ - 12	1 - 11

## 7200 MJ - MBSPT 90°



Part Number	T1	T2
	MJIC	MBSPT
7200-0402	$\frac{7}{16}$ - 20	$\frac{1}{8}$ - 28
7200-0404	$\frac{7}{16}$ - 20	$\frac{1}{4}$ - 19
7200-0604	$\frac{9}{16}$ - 18	$\frac{1}{4}$ - 19
7200-0606	$\frac{9}{16}$ - 18	$\frac{3}{8}$ - 19
7200-0808	$\frac{3}{4}$ - 16	$\frac{1}{2}$ - 14

## 7202 MJ - MABSPP 90°

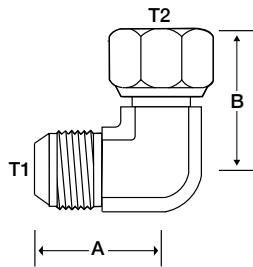


Part Number	T1	T2
	MJIC	MBSPP
7202-0404	$\frac{7}{16}$ - 20	$\frac{1}{4}$ - 19
7202-0606	$\frac{9}{16}$ - 18	$\frac{3}{8}$ - 19
7202-0808	$\frac{3}{4}$ - 16	$\frac{1}{2}$ - 14
7202-1212	$1\frac{1}{16}$ - 12	$\frac{3}{4}$ - 14
7202-1616	$1\frac{5}{16}$ - 12	1 - 11

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

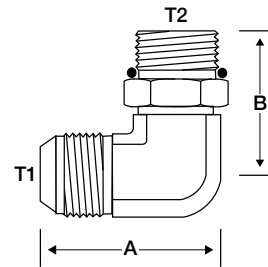


## 7204 MJ - FBSPPX 90°



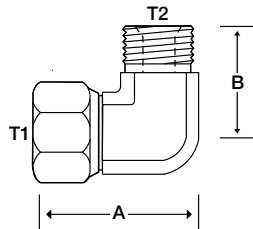
Part Number	T1	T2
	MJIC	FBSPP
7204-0404	7/16 - 20	1/4 - 19
7204-0606	9/16 - 18	3/8 - 19
7204-0808	3/4 - 16	1/2 - 14
7204-1212	1 1/16 - 12	3/4 - 14
7204-1616	1 5/16 - 12	1 - 11

## 7205 MJ - MMA Metric Port



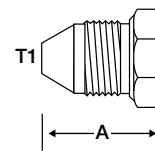
Part Number	T1	T2
	MJIC	Metric
7205-0410	7/16 - 20	M10 x 1.0
7205-0412	7/16 - 20	M12 x 1.5
7205-0414	7/16 - 20	M14 x 1.5
7205-0612	9/16 - 18	M12 x 1.5
7205-0614	9/16 - 18	M14 x 1.5
7205-0616	9/16 - 18	M16 x 1.5
7205-0618	9/16 - 18	M18 x 1.5
7205-0816	3/4 - 16	M16 x 1.5
7205-0818	3/4 - 16	M18 x 1.5
7205-0822	3/4 - 16	M22 x 1.5
7205-0824	3/4 - 16	M24 x 1.5
7205-1018	7/8 - 14	M18 x 1.5
7205-1022	7/8 - 14	M22 x 1.5
7205-1222	1 1/16 - 12	M22 x 1.5
7205-1226	1 1/16 - 12	M26 x 1.5
7205-1227	1 1/16 - 12	M27 x 2.0
7205-1627	1 5/16 - 12	M27 x 2.0
7205-1633	1 5/16 - 12	M33 x 2.0

## 7222 FXJ - MBSPP 90°



Part Number	T1	T2
	FJIC	MBSPP
7222-0404	7/16 - 20	1/4 - 19
7222-0606	9/16 - 18	3/8 - 19
7222-0808	9/16 - 18	1/2 - 14
7222-1212	3/4 - 16	3/4 - 14
7222-1616	1 1/16 - 12	1 - 11
7222-2020	1 5/16 - 12	1 1/4 - 11
7222-2424	1 7/8 - 12	1 1/2 - 11

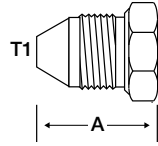
## 7588P JIS Plug



Part Number	T1
	MJIS
7588P-04	1/4 - 19
7588P-06	3/8 - 19
7588P-08	1/2 - 14
7588P-12	3/4 - 14
7588P-16	1 - 11

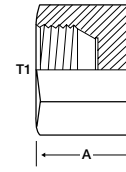
# BSP and Metric

## 7599P Komatsu Plug



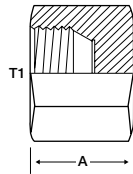
Part Number	T1
	MK
7599P-14	M14 x 1.5
7599P-18	M18 x 1.5
7599P-22	M22 x 1.5
7599P-24	M24 x 1.5
7599P-30	M30 x 1.5
7599P-33	M33 x 1.5
7599P-42	M42 x 1.5

## 7688C JIS Cap



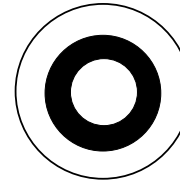
Part Number	T1
	FJIS
7688C-04	1/4 - 19
7688C-06	3/8 - 19
7688C-08	1/2 - 14
7688C-12	3/4 - 14
7688C-16	1 - 11

## 7699C Komatsu Cap



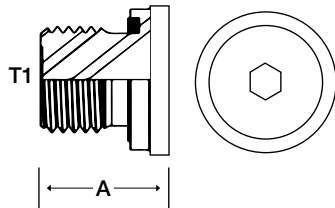
Part Number	T1
	FK
7699C-14	M14 x 1.5
7699C-18	M18 x 1.5
7699C-22	M22 x 1.5
7699C-24	M24 x 1.5
7699C-30	M30 x 1.5
7699C-34	M34 x 1.5

## 8800 Metric Bonded Seal



Part Number	
8800-06	M6
8800-08	M8
8800-10	M10
8800-12	M12
8800-14	M14
8800-16	M16
8800-18	M18
8800-22	M22
8800-26	M26
8800-27	M27
8800-30	M30
8800-33	M33
8800-36	M36
8800-42	M42

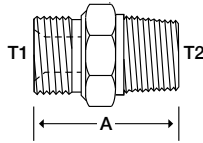
## 8555H Metric Hollow Hex Plug



Part Number	T1
	MM
8555H-10	M10 x 1.5
8555H-12	M12 x 1.5
8555H-14	M14 x 1.5
8555H-16	M16 x 1.5
8555H-18	M18 x 1.5
8555H-20	M20 x 1.5
8555H-22	M22 x 1.5
8555H-24	M24 x 1.5
8555H-26	M26 x 1.5
8555H-42	M42 x 2.0

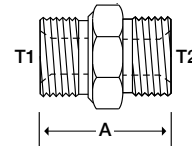
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 9020 MBSPP - MBSPT



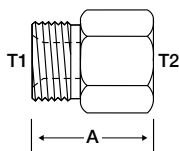
Part Number	T1	T2
	MBSPP	MBSPT
9020-0202	1/8 - 28	1/8 - 28
9020-0204	1/8 - 28	1/4 - 19
9020-0206	1/8 - 28	3/8 - 19
9020-0404	1/4 - 19	1/4 - 19
9020-0406	1/4 - 19	3/8 - 19
9020-0604	3/8 - 19	1/4 - 19
9020-0606	3/8 - 19	3/8 - 19
9020-0608	3/8 - 19	1/2 - 14
9020-0804	1/2 - 14	1/4 - 19
9020-0806	1/2 - 14	3/8 - 19
9020-0808	1/2 - 14	1/2 - 14
9020-0812	1/2 - 14	3/4 - 14
9020-1008	5/8 - 14	1/2 - 14
9020-1208	3/4 - 14	1/2 - 14
9020-1212	3/4 - 14	3/4 - 14
9020-1216	3/4 - 14	1 - 11
9020-1612	1 - 11	3/4 - 14
9020-1616	1 - 11	1 - 11
9020-2020	1 1/4 - 11	1 1/4 - 11

## 9022 MBSPP - MBSPP



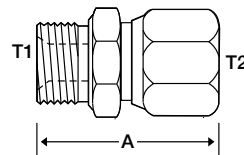
Part Number	T1	T2
	MBSPP	MBSPP
9022-0202	1/8 - 28	1/8 - 28
9022-0402	1/4 - 19	1/8 - 28
9022-0404	1/4 - 19	1/4 - 19
9022-0604	3/8 - 19	1/4 - 19
9022-0606	3/8 - 19	3/8 - 19
9022-0804	1/2 - 14	1/4 - 19
9022-0806	1/2 - 14	3/8 - 19
9022-0808	1/2 - 14	1/2 - 14
9022-1010	5/8 - 14	5/8 - 14
9022-1208	3/4 - 14	1/2 - 14
9022-1212	3/4 - 14	3/4 - 14
9022-1612	1 - 11	3/4 - 14
9022-1616	1 - 11	1 - 11
9022-2016	1 1/4 - 11	1 - 11
9022-2020	1 1/4 - 11	1 1/4 - 11
9022-2424	1 1/2 - 11	1 1/2 - 11
9022-3232	2 - 11	2 - 11

## 9023 MBSPP - FBSPP



Part Number	T1	T2
	MBSPP	FBSPP
9023-0602	3/8 - 19	1/8 - 28
9023-0804	1/2 - 14	1/4 - 19
9023-1204	3/4 - 14	1/4 - 19
9023-1206	3/4 - 14	3/8 - 19
9023-1606	1 - 11	3/8 - 19
9023-1608	1 - 11	1/2 - 14
9023-2012	1 1/4 - 11	3/4 - 14
9023-2016	1 1/4 - 11	1 - 11

## 9024 MBSPP - FBSPPX

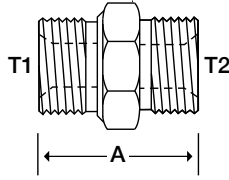


Part Number	T1	T2
	MBSPP	FBSPP
9024-0202	1/8 - 28	1/8 - 28
9024-0404	1/4 - 19	1/4 - 19
9024-0606	3/8 - 19	3/8 - 19
9024-0808	1/2 - 14	1/2 - 14
9024-1010	5/8 - 14	5/8 - 14
9024-1212	3/4 - 14	3/4 - 14
9024-1616	1 - 11	1 - 11
9024-2020	1 1/4 - 11	1 1/4 - 11

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

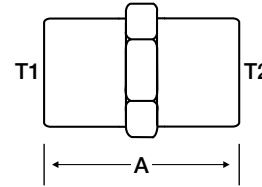
# BSP and Metric

## 9025 MBSPP - MM



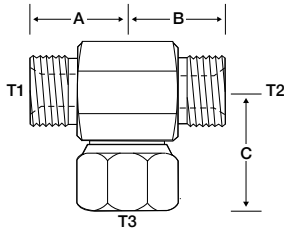
Part Number	T1	T2
	MBSPP	Metric Port
9025-0414	1/4 - 19	M14 x 1.5
9025-0616	3/8 - 19	M16 x 1.5
9025-0618	3/8 - 19	M18 x 1.5
9025-0822	1/2 - 14	M22 x 1.5
9025-0824	1/2 - 14	M24 x 1.5
9025-1224	3/4 - 14	M24 x 1.5
9025-1230	3/4 - 14	M30 x 1.5

## 9033 FBSPP - FBSPP



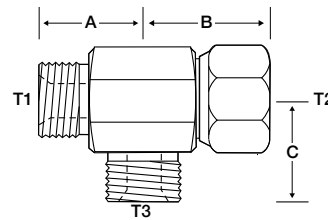
Part Number	T1	T2
	FBSPP	FBSPP
9033-0202	1/8 - 28	1/8 - 28
9033-0402	1/4 - 19	1/8 - 28
9033-0404	1/4 - 19	1/4 - 19
9033-0604	3/8 - 19	1/4 - 19
9033-0606	3/8 - 19	3/8 - 19
9033-0806	1/2 - 19	3/8 - 19
9033-0808	1/2 - 14	1/2 - 14
9033-1010	5/8 - 14	5/8 - 14
9033-1212	3/4 - 14	3/4 - 14
9033-1612	1 - 11	3/4 - 14
9033-1616	1 - 11	1 - 11
9033-2020	1 1/4 - 11	1 1/4 - 11
9033-2424	1 1/2 - 11	1 1/2 - 11

## 9087 MBSPP - MBSPP - FBSPPX Tee



Part Number	T1 / T2	T3
	MBSPP	FBSPP
9087-040404	1/4 - 19	1/4 - 19
9087-060606	3/8 - 19	3/8 - 19
9087-080808	1/2 - 14	1/2 - 14
9087-121212	3/4 - 14	3/4 - 14
9087-161616	1 - 11	1 - 11

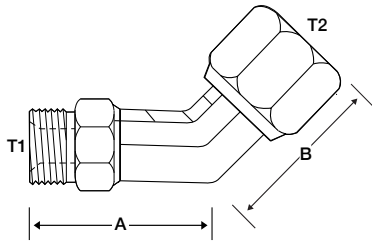
## 9090 MBSPP - FBSPPX - MBSPP Tee



Part Number	T1 / T3	T2
	MBSPP	FBSPP
9090-040404	1/4 - 19	1/4 - 19
9090-060606	3/8 - 19	3/8 - 19
9090-080608	1/2 - 14	3/8 - 19
9090-080808	1/2 - 14	1/2 - 14
9090-121212	3/4 - 14	3/4 - 14
9090-161616	1 - 11	1 - 11

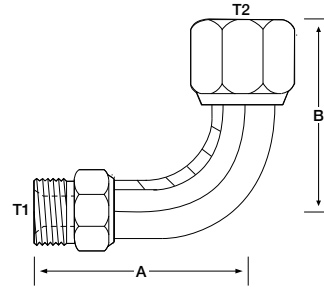
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 9124 MBSPP - FBSPPX 45°



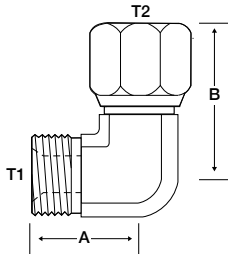
Part Number	T1	T2
	MBSPP	FBSPP
9124-0404	1/4 - 19	1/4 - 19
9124-0606	3/8 - 19	3/8 - 19
9124-0808	1/2 - 14	1/2 - 14
9124-1212	3/4 - 14	3/4 - 14
9124-1616	1 - 11	1 - 11

## 9224L MBSPP - FBSPPX 90° Tube



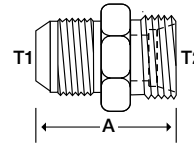
Part Number	T1	T2
	MBSPP	FBSPP
9224L-0404	1/4 - 19	1/4 - 19
9224L-0606	3/8 - 19	3/8 - 19
9224L-0808	1/2 - 14	1/2 - 14
9224L-1212	3/4 - 14	3/4 - 14
9224L-1616	1 - 11	1 - 11
9224L-2020	1 1/4 - 11	1 1/4 - 11

## 9224 MBSPP - FBSPPX 90°



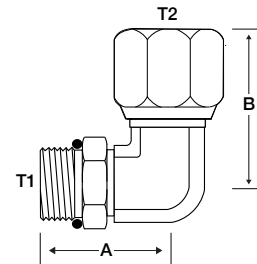
Part Number	T1	T2
	MBSPP	FBSPP
9224-0202	1/8 - 28	1/8 - 28
9224-0404	1/4 - 19	1/4 - 19
9224-0606	3/8 - 19	3/8 - 19
9224-0808	1/2 - 14	1/2 - 14
9224-1212	3/4 - 14	3/4 - 14
9224-1616	1 - 11	1 - 11
9224-2020	1 1/4 - 11	1 1/4 - 11

## 9245 MJ - MJSW



Part Number	T1	T2
	MJIC	MJSW
9245-12-34	1 1/16 - 12	M34 x 1.5
9245-16-40	1 5/16 - 12	M40 x 1.5
9245-20-48	1 5/8 - 12	M48 x 1.5

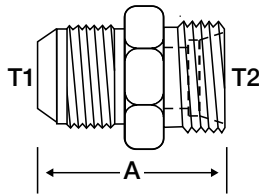
## 9224ADJ MABSPP - FBSPPX 90°



Part Number	T1	T2
	MBSPP	FBSPP
9224-0404ADJ	1/4 - 19	1/4 - 19
9224-0606ADJ	3/8 - 19	3/8 - 19
9224-0808ADJ	1/2 - 14	1/2 - 14
9224-1212ADJ	3/4 - 14	3/4 - 14
9224-1616ADJ	1 - 11	1 - 11

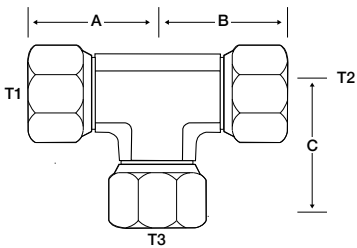
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 9247 MJ - MKBC KOBELCO



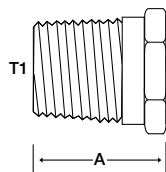
Part Number	T1	T2	
	MJIC	MKBK	Tube
9247-12-30	1 1/16 - 12	M30 x 1.5	22.3
9247-12-36	1 1/16 - 12	M36 x 1.5	28.2
9247-16-36	1 5/16 - 12	M36 x 1.5	28.2
9247-16-45	1 5/16 - 12	M45 x 1.5	35.2
9247-20-45	1 3/8 - 12	M45 x 1.5	35.2

## 9344 FBSPPX - FBSPPX - FBSPPX Tee



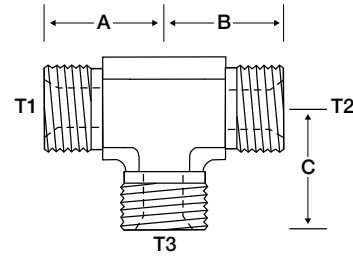
Part Number	T1 / T2 / T3
	FBSPP
9322-040404	1/4 - 19
9322-060606	3/8 - 19
9322-080808	1/2 - 14
9322-121212	3/4 - 14
9322-161616	1 - 11
9322-202020	1 1/4 - 11
9322-242424	1 1/2 - 11

## 9500P MBSPT Plug



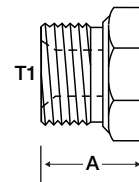
Part Number	T1
	MBSPT
9500P-04	1/4 - 19
9500P-06	3/8 - 19
9500P-08	1/2 - 14
9500P-12	3/4 - 14

## 9322 MBSPP - MBSPP - MBSPP Tee



Part Number	T1 / T2 / T3
	MBSPP
9322-040404	1/4 - 19
9322-060606	3/8 - 19
9322-080808	1/2 - 14
9322-121212	3/4 - 14
9322-161616	1 - 11
9322-202020	1 1/4 - 11
9322-242424	1 1/2 - 11

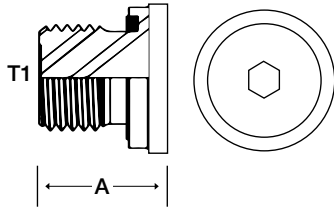
## 9522P MBSPP Plug



Part Number	T1
	MBSPP
9522P-02	1/8 - 28
9522P-04	1/4 - 19
9522P-06	3/8 - 19
9522P-08	1/2 - 14
9522P-10	5/8 - 14
9522P-12	3/4 - 14
9522P-16	1 - 11
9522P-20	1 1/4 - 11
9522P-24	1 1/2 - 11
9522P-32	2 - 11

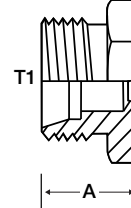
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 9522H BSPP Hollow Hex Plug



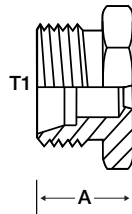
Part Number	T1	
	MBSPP	
9522H-02	1/8 - 28	
9522H-04	1/4 - 19	
9522H-06	3/8 - 19	
9522H-08	1/2 - 14	
9522H-12	3/4 - 14	

## 9610 Metric Plug Light



Part Number	T1	
	Light	Tube
9610-12	M12 x 1.5	L6
9610-14	M14 x 1.5	L8
9610-16	M16 x 1.5	L10
9610-18	M18 x 1.5	L12
9610-22	M22 x 1.5	L15
9610-26	M26 x 1.5	L18
9610-30	M30 x 2.0	L22
9610-36	M36 x 2.0	L28
9610-42	M42 x 2.0	L35
9610-52	M52 x 2.0	L42

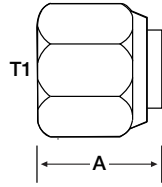
## 9611 Metric Plug Heavy



Part Number	T1	
	Heavy	Tube
9611-14	M14 x 1.5	S6
9611-16	M16 x 1.5	S8
9611-18	M18 x 1.5	S10
9611-20	M20 x 1.5	S12
9611-22	M22 x 1.5	S14
9611-24	M24 x 1.5	S16
9611-30	M30 x 2.0	S20
9611-36	M36 x 2.0	S25
9611-42	M42 x 2.0	S30
9611-52	M52 x 2.0	S38

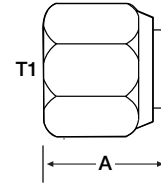
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 9620 Metric Cap Light



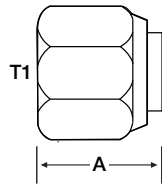
Part Number	T1	
	Light	Tube
9620-12	M12 x 1.5	L6
9620-14	M14 x 1.5	L8
9620-16	M16 x 1.5	L10
9620-18	M18 x 1.5	L12
9620-22	M22 x 1.5	L15
9620-26	M26 x 1.5	L18
9620-30	M30 x 2.0	L22
9620-36	M36 x 2.0	L28
9620-42	M42 x 2.0	L35
9620-52	M52 x 2.0	L42

## 9621 Metric Cap Heavy



Part Number	T1	
	Heavy	Tube
9621-14	M14 x 1.5	S6
9621-16	M16 x 1.5	S8
9621-18	M18 x 1.5	S10
9621-20	M20 x 1.5	S12
9621-22	M22 x 1.5	S14
9621-24	M24 x 1.5	S16
9621-30	M30 x 2.0	S20
9621-36	M36 x 2.0	S25
9621-42	M42 x 2.0	S30
9621-52	M52 x 2.0	S38

## 9644C FBSP Cap

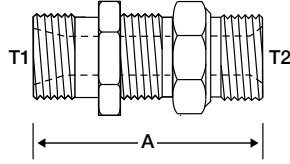


Part Number	T1
	FBSP
9644C-02	1/8 - 28
9644C-04	1/4 - 19
9644C-06	3/8 - 19
9644C-08	1/2 - 14
9644C-10	5/8 - 14
9644C-12	3/4 - 14
9644C-16	1 - 11
9644C-20	1 1/4 - 11

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

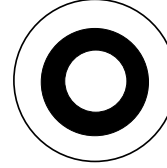


## 9772LN MBSPP - MBSPP Bulkhead



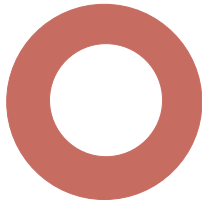
Part Number	T1	T2
	MBSPP	MBSPP
9722LN-0404	1/4 - 19	1/4 - 19
9722LN-0606	3/8 - 19	3/8 - 19
9722LN-0808	1/2 - 14	1/2 - 14
9722LN-1212	3/4 - 14	3/4 - 14
9722LN-1616	1 - 11	1 - 11
9722LN-2020	1 1/4 - 11	1 1/4 - 11

## 9900 BSP Bonded Seal



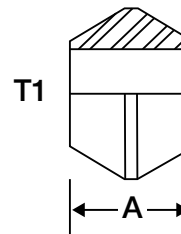
Part Number	T1
	BSP
9900-02	1/8
9900-04	1/4
9900-06	3/8
9900-08	1/2
9900-10	5/8
9900-12	3/4
9900-16	1
9900-20	1 1/4
9900-24	1 1/2
9900-32	2

## 9900CP BSP Copper Seal



Part Number	T1
	BSP
9900CP-04	1/4
9900CP-06	3/8
9900CP-08	1/2
9900CP-10	5/8
9900CP-12	3/4
9900CP-16	1

## 9999 Dual Cone (Convert MBSPP to MJIS)

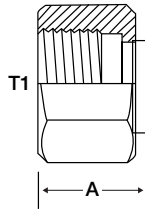


Part Number	T1
	Size
9999-04	1/4
9999-06	3/8
9999-08	1/2
9999-10	5/8
9999-12	3/4
9999-16	1

## O-Ring Face Seal

**FS0304 ORFS Cap**

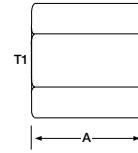
SAE # 520112



Part Number	T1
	FORFS
FS0304-04	$\frac{9}{16}$ - 18
FS0304-06	$\frac{11}{16}$ - 16
FS0304-08	$\frac{13}{16}$ - 16
FS0304-10	1 - 14
FS0304-12	$1\frac{3}{16}$ - 12
FS0304-16	$1\frac{7}{16}$ - 12
FS0304-20	$1\frac{11}{16}$ - 12
FS0304-24	2 - 12

**FS0318 ORFS Tube Nut**

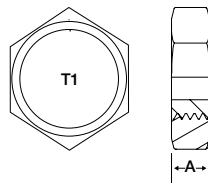
SAE # 520110



Part Number	T1	Tube
	FORFS	OD
FS0318-04	$\frac{9}{16}$ - 18	$\frac{1}{4}$
FS0318-06	$\frac{11}{16}$ - 16	$\frac{3}{8}$
FS0318-08	$\frac{13}{16}$ - 16	$\frac{1}{2}$
FS0318-10	1 - 14	$\frac{5}{8}$
FS0318-12	$1\frac{3}{16}$ - 12	$\frac{3}{4}$
FS0318-16	$1\frac{7}{16}$ - 12	1
FS0318-20	$1\frac{11}{16}$ - 12	$1\frac{1}{4}$
FS0318-24	2 - 12	$1\frac{1}{2}$

**FS0306 ORFS Bulkhead Locknut**

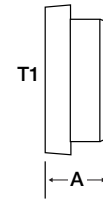
SAE # 520118



Part Number	T1
	FORFS
FS0306-04	$\frac{9}{16}$ - 18
FS0306-06	$\frac{11}{16}$ - 16
FS0306-08	$\frac{13}{16}$ - 16
FS0306-10	1 - 14
FS0306-12	$1\frac{3}{16}$ - 12
FS0306-16	$1\frac{7}{16}$ - 12
FS0306-20	$1\frac{11}{16}$ - 12
FS0306-24	2 - 12

**FS0319 ORFS Tube Sleeve**

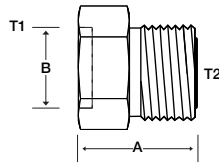
SAE # 520115



Part Number	TUBE O.D.
FS0319-04	$\frac{1}{4}$
FS0319-06	$\frac{3}{8}$
FS0319-08	$\frac{1}{2}$
FS0319-10	$\frac{5}{8}$
FS0319-12	$\frac{3}{4}$
FS0319-16	1
FS0319-20	$1\frac{1}{4}$
FS0319-24	$1\frac{1}{2}$

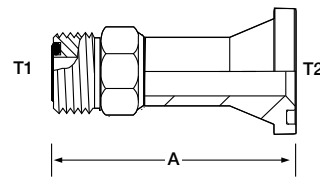
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FS0403 BORE - MF Straight



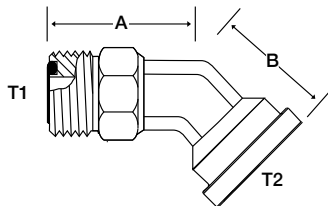
Part Number	B	T1
	BORE	MORFS
FS0403-0404	0.256	9/16 - 18
FS0403-0604	0.381	9/16 - 18
FS0403-0606	0.381	1 1/16 - 16
FS0403-0608	0.381	1 3/16 - 16
FS0403-0806	0.506	1 1/16 - 16
FS0403-0808	0.506	1 3/16 - 16
FS0403-0812	0.506	1 3/16 - 12
FS0403-1008	0.631	1 3/16 - 16
FS0403-1010	0.631	1 - 14
FS0403-1012	0.631	1 3/16 - 12
FS0403-1210	0.757	1 - 14
FS0403-1212	0.757	1 3/16 - 12
FS0403-1216	0.757	1 7/16 - 12
FS0403-1612	1.007	1 3/16 - 12
FS0403-1616	1.007	1 7/16 - 12
FS0403-1620	1.007	1 11/16 - 12
FS0403-2020	1.258	1 11/16 - 12
FS0403-2420	1.508	1 11/16 - 12
FS0403-2424	1.508	2 - 12

## FS1700 MF - Flange (61)



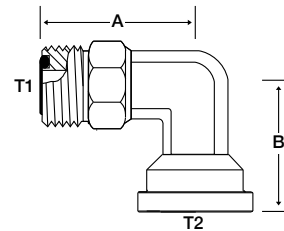
Part Number	T1	T2
	MORFS	Code 61
FS1700-1212	1 13/16 - 12	3/4
FS1700-1216	1 13/16 - 12	1
FS1700-1612	1 13/16 - 12	3/4
FS1700-1616	1 7/16 - 12	1
FS1700-1620	1 13/16 - 12	1 1/4
FS1700-2016	1 11/16 - 12	1
FS1700-2020	1 11/16 - 12	1 1/4
FS1700-2424	2 - 12	1 1/2
FS1700-2432	2 - 12	2

## FS1703FG MF - Flange (61) 45° Forged



Part Number	T1	T2
	MORFS	Code 61
FS1703-1212FG	1 3/16 - 12	3/4
FS1703-1616FG	1 7/16 - 12	1
FS1703-2020FG	1 11/16 - 12	1 1/4
FS1703-2424FG	2 - 12	1 1/2

## FS1704FG MF - Flange (61) 90° Forged

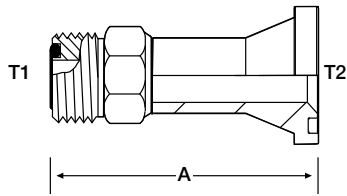


Part Number	T1	T2
	MORFS	Code 61
FS1704-1212FG	1 3/16 - 12	3/4
FS1704-1616FG	1 7/16 - 12	1
FS1704-2020FG	1 11/16 - 12	1 1/4
FS1704-2424FG	2 - 12	1 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

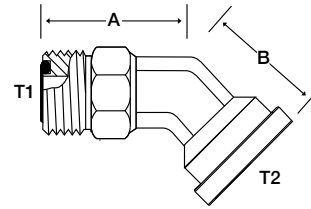
# O-Ring Face Seal

## FS1800 MF - Flange (62)



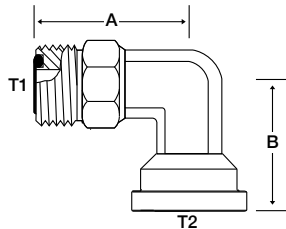
Part Number	T1	T2
	MORFS	Code 62
FS1800-0808	1 <sup>3</sup> / <sub>16</sub> - 12	1/2
FS1800-1212	1 <sup>3</sup> / <sub>16</sub> - 12	3/4
FS1800-1216	1 <sup>3</sup> / <sub>16</sub> - 12	1
FS1800-1612	1 <sup>7</sup> / <sub>16</sub> - 12	3/4
FS1800-1616	1 <sup>7</sup> / <sub>16</sub> - 12	1
FS1800-1620	1 <sup>7</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>4</sub>
FS1800-2016	1 <sup>11</sup> / <sub>16</sub> - 12	1
FS1800-2020	1 <sup>11</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>4</sub>
FS1800-2024	1 <sup>11</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>2</sub>
FS1800-2420	2 - 12	1 <sup>1</sup> / <sub>4</sub>
FS1800-2424	2 - 12	1 <sup>1</sup> / <sub>2</sub>
FS1800-2432	2 - 12	2

## FS1803FG MF - Flange (62) 45° Forged



Part Number	T1	T2
	MORFS	Code 62
FS1803-1212FG	1 <sup>3</sup> / <sub>16</sub> - 12	3/4
FS1803-1616FG	1 <sup>7</sup> / <sub>16</sub> - 12	1
FS1803-2020FG	1 <sup>11</sup> / <sub>16</sub> - 12	1/4
FS1803-2424FG	2 - 12	1 <sup>1</sup> / <sub>2</sub>

## FS1804FG MF - Flange (62) 90° Forged

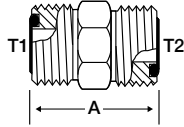


Part Number	T1	T2
	MORFS	Code 62
FS1804-1212FG	1 <sup>3</sup> / <sub>16</sub> - 12	3/4
FS1804-1616FG	1 <sup>7</sup> / <sub>16</sub> - 12	1
FS1804-2020FG	1 <sup>11</sup> / <sub>16</sub> - 12	1/4
FS1804-2424FG	2 - 12	1 <sup>1</sup> / <sub>2</sub>

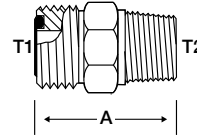
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## FS2403 MF - MF

SAE # 520101



## FS2404 MF - MP

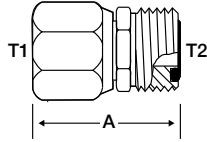


Part Number	T1	T2
	MORFS	MORFS
FS2403-0404	9/16 - 18	9/16 - 18
FS2403-0604	1 1/16 - 16	9/16 - 18
FS2403-0606	1 1/16 - 16	1 1/16 - 16
FS2403-0806	1 3/16 - 16	1 1/16 - 16
FS2403-0808	1 3/16 - 16	1 3/16 - 16
FS2403-1008	1 - 14	1 3/16 - 16
FS2403-1010	1 - 14	1 - 14
FS2403-1208	1 3/16 - 12	1 3/16 - 12
FS2403-1210	1 3/16 - 12	1 - 14
FS2403-1212	1 3/16 - 12	1 3/16 - 12
FS2403-1612	1 7/16 - 12	1 3/16 - 12
FS2403-1616	1 7/16 - 12	1 7/16 - 12
FS2403-2016	1 1 1/16 - 12	1 7/16 - 12
FS2403-2020	1 1 1/16 - 12	1 1 1/16 - 12
FS2403-2420	2 - 12	1 1 1/16 - 12
FS2403-2424	2 - 12	2 - 12

Part Number	T1	T2
	MORFS	MNPT
FS2404-0402	9/16 - 18	1/8 - 27
FS2404-0404	9/16 - 18	1/4 - 18
FS2404-0406	9/16 - 18	3/8 - 18
FS2404-0408	9/16 - 18	1/2 - 14
FS2404-0602	1 1/16 - 16	1/8 - 27
FS2404-0604	1 1/16 - 16	1/4 - 18
FS2404-0606	1 1/16 - 16	3/8 - 18
FS2404-0608	1 1/16 - 16	1/2 - 14
FS2404-0804	1 3/16 - 16	1/4 - 18
FS2404-0806	1 3/16 - 16	3/8 - 18
FS2404-0808	1 3/16 - 16	1/2 - 14
FS2404-0812	1 3/16 - 16	3/4 - 14
FS2404-0816	1 3/16 - 16	1 - 11 1/2
FS2404-1008	1 - 14	1/2 - 14
FS2404-1012	1 - 14	3/4 - 14
FS2404-1016	1 - 14	1 - 11 1/2
FS2404-1208	1 3/16 - 12	1/2 - 14
FS2404-1212	1 3/16 - 12	3/4 - 14
FS2404-1216	1 3/16 - 12	1 - 11 1/2
FS2404-1612	1 7/16 - 12	3/4 - 14
FS2404-1616	1 7/16 - 12	1 - 11 1/2
FS2404-1620	1 7/16 - 12	1 1/4 - 11 1/2
FS2404-2016	1 1 1/16 - 12	1 - 11 1/2
FS2404-2020	1 1 1/16 - 12	1 1/4 - 11 1/2
FS2404-2424	2 - 12	1 1/2 - 11 1/2

# O-Ring Face Seal

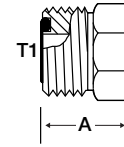
## FS2406 FFX - MF



Part Number	T1	T2
	FORFS	MORFS
FS2406-0404	9/16 - 18	9/16 - 18
FS2406-0604	1 1/16 - 16	9/16 - 18
FS2406-0606	1 1/16 - 16	1 1/16 - 16
FS2406-0804	1 3/16 - 16	9/16 - 18
FS2406-0806	1 3/16 - 16	1 1/16 - 16
FS2406-0808	1 3/16 - 16	1 3/16 - 16
FS2406-1004	1 - 14	9/16 - 18
FS2406-1006	1 - 14	1 1/16 - 16
FS2406-1008	1 - 14	1 3/16 - 16
FS2406-1204	1 3/16 - 12	9/16 - 18
FS2406-1206	1 3/16 - 12	1 1/16 - 16
FS2406-1208	1 3/16 - 12	1 3/16 - 16
FS2406-1210	1 3/16 - 12	1 - 14
FS2406-1216	1 3/16 - 12	1 7/16 - 12
FS2406-1608	1 7/16 - 12	1 3/16 - 16
FS2406-1610	1 7/16 - 12	1 - 14
FS2406-1612	1 7/16 - 12	1 3/16 - 12
FS2406-2012	1 1 1/16 - 12	1 3/16 - 12
FS2406-2016	1 1 1/16 - 12	1 7/16 - 12
FS2406-2024	1 1 1/16 - 12	2 - 12
FS2406-2416	2 - 12	1 7/16 - 12
FS2406-2420	2 - 12	1 1 1/16 - 12

## FS2408 ORFS Hex Plug

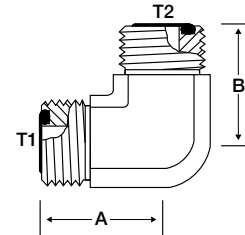
SAE #520109



Part Number	T1
	MORFS
FS2408-04	9/16 - 18
FS2408-06	1 1/16 - 16
FS2408-08	1 3/16 - 16
FS2408-10	1 - 14
FS2408-12	1 3/16 - 12
FS2408-16	1 7/16 - 12
FS2408-20	1 1 1/16 - 12
FS2408-24	2 - 12

## FS2500 MF - MF 90°

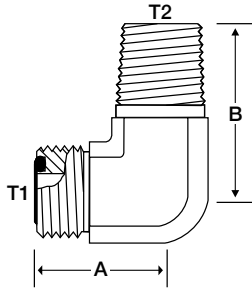
SAE #520201



Part Number	T1	T2
	MORFS	MORFS
FS2500-0404	9/16 - 18	9/16 - 18
FS2500-0606	1 1/16 - 16	1 1/16 - 16
FS2500-0808	1 3/16 - 16	1 3/16 - 16
FS2500-1010	1 - 14	1 - 14
FS2500-1208	1 3/16 - 12	1 3/16 - 12
FS2500-1212	1 3/16 - 12	1 3/16 - 12
FS2500-1616	1 7/16 - 12	1 7/16 - 12
FS2500-2020	1 1 1/16 - 12	1 1 1/16 - 12
FS2500-2424	2 - 12	2 - 12

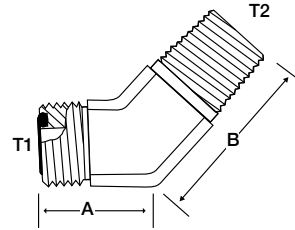
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FS2501 MF - MP 90°



Part Number	T1	T2
	MORFS	MNPT
FS2501-0402	9/16 - 18	1/8 - 27
FS2501-0404	9/16 - 18	1/4 - 18
FS2501-0406	9/16 - 18	3/8 - 18
FS2501-0604	1 1/16 - 16	1/4 - 18
FS2501-0606	1 1/16 - 16	3/8 - 18
FS2501-0608	1 1/16 - 16	1/2 - 14
FS2501-0804	1 3/16 - 16	1/4 - 18
FS2501-0806	1 3/16 - 16	3/8 - 18
FS2501-0808	1 3/16 - 16	1/2 - 14
FS2501-0812	1 3/16 - 16	3/4 - 14
FS2501-1008	1 - 14	1/2 - 14
FS2501-1012	1 - 14	3/4 - 14
FS2501-1208	1 3/16 - 12	1/2 - 14
FS2501-1212	1 3/16 - 12	3/4 - 14
FS2501-1216	1 3/16 - 12	1 - 11 1/2
FS2501-1612	1 7/16 - 12	3/4 - 14
FS2501-1616	1 7/16 - 12	1 - 11 1/2
FS2501-2016	1 11/16 - 12	1 - 11 1/2
FS2501-2020	1 11/16 - 12	1 1/4 - 11 1/2
FS2501-2424	2 - 12	1 1/2 - 11 1/2

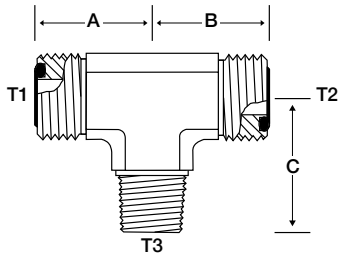
## FS2503 MF - MP 45°



Part Number	T1	T2
	MORFS	MNPT
FS2503-0402	9/16 - 18	1/8 - 27
FS2503-0404	9/16 - 18	1/4 - 18
FS2503-0604	1 1/16 - 16	1/4 - 18
FS2503-0606	1 1/16 - 16	3/8 - 18
FS2503-0608	1 1/16 - 16	1/2 - 14
FS2503-0806	1 3/16 - 16	3/8 - 18
FS2503-0808	1 3/16 - 16	1/2 - 14
FS2503-0812	1 3/16 - 16	3/4 - 14
FS2503-1008	1 - 14	1/2 - 14
FS2503-1208	1 3/16 - 12	1/2 - 14
FS2503-1212	1 3/16 - 12	3/4 - 14
FS2503-1616	1 7/16 - 12	1 - 11 1/2
FS2503-2020	1 11/16 - 12	1 1/4 - 11 1/2

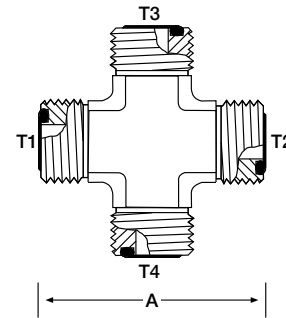
# O-Ring Face Seal

## FS2601 MF - MF - MP Tee



Part Number	T1 / T2	T3
	MORFS	MNPT
FS2601-040404	9/16 - 18	1/4 - 18
FS2601-060604	1 1/16 - 16	1/4 - 18
FS2601-060606	1 1/16 - 16	3/8 - 18
FS2601-080808	1 3/16 - 16	1/2 - 14
FS2601-121212	1 3/16 - 12	3/4 - 14
FS2601-161616	1 7/16 - 12	1 - 11 1/2

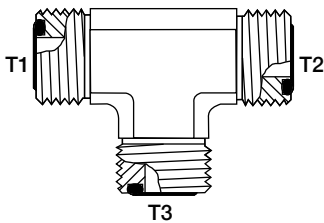
## FS2650 MF - MF - MF - MF Cross



Part Number	T1 / T2 / T3 / T4
	MORFS
FS2650-04040404	9/16 - 18
FS2650-06060606	1 1/16 - 16
FS2650-08080808	1 3/16 - 16
FS2650-10101010	1 - 14
FS2650-12121212	1 3/16 - 12
FS2650-16161616	1 7/16 - 12
FS2650-20202020	1 11/16 - 12
FS2650-24242424	2 - 12

## FS2603 MF - MF - MF Tee

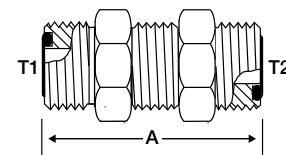
SAE # 520401



Part Number	T1 / T2 / T3
	MORFS
FS2603-040404	9/16 - 18
FS2603-060606	1 1/16 - 16
FS2603-060608	1 1/16 - 16
FS2603-080808	1 3/16 - 16
FS2603-101010	1 - 14
FS2603-121212	1 3/16 - 12
FS2603-121216	1 3/16 - 12
FS2603-161616	1 7/16 - 12
FS2603-202020	1 11/16 - 12
FS2603-242424	2 - 12

## FS2700LN MF - MF Bulkhead

SAE # 520601



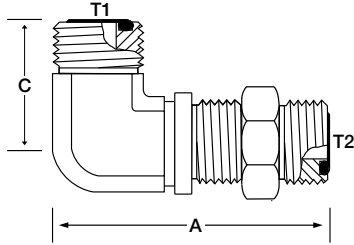
Part Number	T1	T2
	MORFS	MORFS
FS2700LN-0404	9/16 - 18	9/16 - 18
FS2700LN-0606	1 1/16 - 16	1 1/16 - 16
FS2700LN-0608	1 1/16 - 16	1 1/16 - 16
FS2700LN-0808	1 3/16 - 16	1 3/16 - 16
FS2700LN-1010	1 - 14	1 - 14
FS2700LN-1212	1 3/16 - 12	1 3/16 - 12
FS2700LN-1616	1 7/16 - 12	1 7/16 - 12
FS2700LN-2020	1 11/16 - 12	1 11/16 - 12
FS2700LN-2424	2 - 12	2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## FS2701LN MF - MF Bulkhead 90°

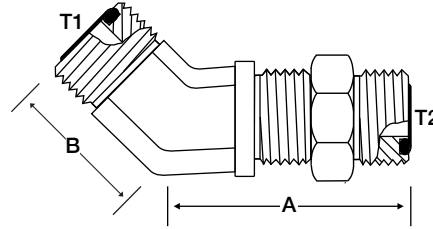
SAE # 520701



Part Number	T1	T2
	MORFS	MORFS
FS2701LN-0404	9/16 - 18	9/16 - 18
FS2701LN-0606	11/16 - 16	11/16 - 16
FS2701LN-0608	11/16 - 16	13/16 - 16
FS2701LN-0808	13/16 - 16	13/16 - 16
FS2701LN-1010	1 - 14	1 - 14
FS2701LN-1212	1 3/16 - 12	1 3/16 - 12
FS2701LN-1616	1 7/16 - 12	1 7/16 - 12
FS2701LN-2020	1 11/16 - 12	1 11/16 - 12
FS2701LN-2424	2 - 12	2 - 12

## FS2702LN MF - MF Bulkhead 45°

SAE # 520801

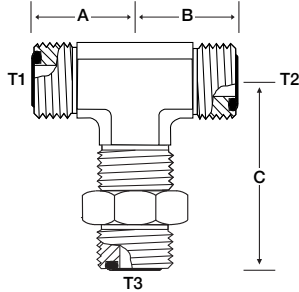


Part Number	T1	T2
	MORFS	MORFS
FS2702LN-0404	9/16 - 18	9/16 - 18
FS2702LN-0606	11/16 - 16	11/16 - 16
FS2702LN-0808	13/16 - 16	13/16 - 16
FS2702LN-1010	1 - 14	1 - 14
FS2702LN-1212	1 3/16 - 12	1 3/16 - 12
FS2702LN-1616	1 7/16 - 12	1 7/16 - 12
FS2702LN-2020	1 11/16 - 12	1 11/16 - 12
FS2702LN-2424	2 - 12	2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

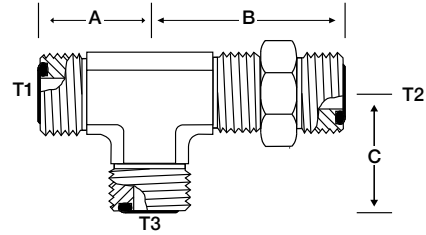
# O-Ring Face Seal

## FS2703LN MF - MF - MF Bulkhead Tee



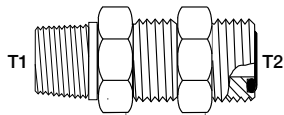
Part Number	T1 / T2 / T3
	MORFS
FS2703LN-040404	9/16 - 18
FS2703LN-060606	1 1/16 - 16
FS2703LN-080808	1 3/16 - 16
FS2703LN-101010	1 - 14
FS2703LN-121212	1 3/16 - 12
FS2703LN-161616	1 7/16 - 12
FS2703LN-202020	1 11/16 - 12
FS2703LN-242424	2 - 12

## FS2704LN MF - MF - MF Bulkhead Tee SAE # 520201



Part Number	T1 / T2 / T3
	MORFS
FS2704LN-040404	9/16 - 18
FS2704LN-060606	1 1/16 - 16
FS2704LN-080808	1 3/16 - 16
FS2704LN-101010	1 - 14
FS2704LN-121212	1 3/16 - 12
FS2704LN-161616	1 7/16 - 12
FS2704LN-202020	1 11/16 - 12
FS2704LN-242424	2 - 12

## FS2706LN MP - MF Bulkhead

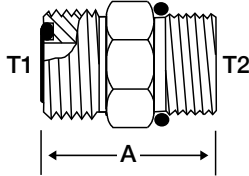


Part Number	T1	T2
	MNPT	MORFS
FS2706LN-0404	1/4 - 18	9/16 - 18
FS2706LN-0606	3/8 - 18	1 1/16 - 16
FS2706LN-0808	1/2 - 14	1 3/16 - 16
FS2706LN-1212	3/4 - 14	1 3/16 - 12
FS2706LN-1616	1 - 11 1/2	1 7/16 - 12

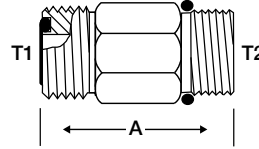
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FS6400 MF - MORB

SAE # 520122



## FS6400L MF - MORB Long



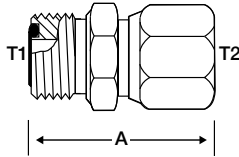
Part Number	T1	T2
	MORFS	MORB
FS6400-0404	9/16 - 18	7/16 - 20
FS6400-0405	9/16 - 18	1/2 - 20
FS6400-0406	9/16 - 18	9/16 - 18
FS6400-0408	9/16 - 18	3/4 - 16
FS6400-0604	11/16 - 16	7/16 - 20
FS6400-0605	11/16 - 16	1/2 - 20
FS6400-0606	11/16 - 16	9/16 - 18
FS6400-0608	11/16 - 16	3/4 - 16
FS6400-0610	11/16 - 16	7/8 - 14
FS6400-0612	11/16 - 16	1 1/16 - 12
FS6400-0804	13/16 - 16	7/16 - 20
FS6400-0806	13/16 - 16	9/16 - 18
FS6400-0808	13/16 - 16	3/4 - 16
FS6400-0810	13/16 - 16	7/8 - 14
FS6400-0812	13/16 - 16	1 1/16 - 12
FS6400-0816	13/16 - 16	1 5/16 - 12
FS6400-1006	1 - 14	9/16 - 18
FS6400-1008	1 - 14	3/4 - 16
FS6400-1010	1 - 14	7/8 - 14
FS6400-1012	1 - 14	1 1/16 - 12
FS6400-1206	1 3/16 - 12	9/16 - 18
FS6400-1208	1 3/16 - 12	3/4 - 16
FS6400-1210	1 3/16 - 12	7/8 - 14
FS6400-1212	1 3/16 - 12	1 1/16 - 12
FS6400-1216	1 3/16 - 12	1 5/16 - 12
FS6400-1608	1 7/16 - 12	3/4 - 16
FS6400-1610	1 7/16 - 12	7/8 - 14
FS6400-1612	1 7/16 - 12	1 1/16 - 12
FS6400-1616	1 7/16 - 12	1 5/16 - 12
FS6400-1620	1 7/16 - 12	1 5/8 - 12
FS6400-2016	1 11/16 - 12	1 5/16 - 12
FS6400-2020	1 11/16 - 12	1 5/8 - 12
FS6400-2024	1 11/16 - 12	1 7/8 - 12
FS6400-2420	2 - 12	1 5/8 - 12
FS6400-2424	2 - 12	1 7/8 - 12

Part Number	T1	T2
	MORFS	MORB
FS6400L-0404	9/16 - 18	7/16 - 20
FS6400L-0606	1 1/16 - 16	9/16 - 18
FS6400L-0808	1 3/16 - 16	3/4 - 16
FS6400L-0810	1 3/16 - 16	7/8 - 14
FS6400L-1010	1 - 14	7/8 - 16
FS6400L-1210	1 3/16 - 12	7/8 - 14
FS6400L-1212	1 3/16 - 12	1 1/16 - 12
FS6400L-1616	1 7/16 - 12	1 5/16 - 12
FS6400L-2020	1 11/16 - 12	1 7/8 - 14

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

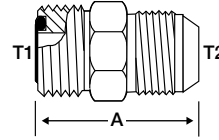
# O-Ring Face Seal

## FS6402 MF - FJX



Part Number	T1	T2
	MORFS	FJIC
FS6402-0404	9/16 - 18	7/16 - 20
FS6402-0606	11/16 - 16	9/16 - 18
FS6402-0808	13/16 - 16	3/4 - 16
FS6402-1010	1 - 14	7/8 - 14
FS6402-1212	1 3/16 - 12	1 1/16 - 12
FS6402-1616	1 7/16 - 12	1 5/16 - 12
FS6402-2020	1 11/16 - 12	1 5/8 - 12

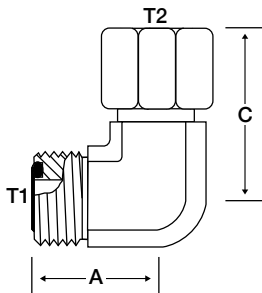
## FS6403 MF - MJ



Part Number	T1	T2
	MORFS	MJIC
FS6403-0404	9/16 - 18	7/16 - 20
FS6403-0606	11/16 - 16	9/16 - 18
FS6403-0608	11/16 - 16	3/4 - 16
FS6403-0808	13/16 - 16	3/4 - 16
FS6403-0810	13/16 - 16	7/8 - 14
FS6403-1008	1 - 14	3/4 - 16
FS6403-1010	1 - 14	7/8 - 14
FS6403-1212	1 3/16 - 12	1 1/16 - 12
FS6403-1616	1 7/16 - 12	1 5/16 - 12
FS6403-2020	1 11/16 - 12	1 5/8 - 12

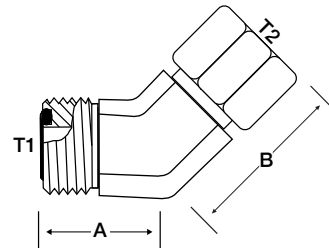
## FS6500 MF - FFX 90°

SAE # 520221



Part Number	T1	T2
	MORFS	FORFS
FS6500-0404	9/16 - 18	9/16 - 18
FS6500-0406	9/16 - 18	9/16 - 18
FS6500-0606	11/16 - 16	11/16 - 16
FS6500-0806	13/16 - 16	13/16 - 16
FS6500-0808	13/16 - 16	13/16 - 16
FS6500-1010	1 - 14	1 - 14
FS6500-1212	1 3/16 - 12	1 3/16 - 12
FS6500-1616	1 7/16 - 12	1 7/16 - 12
FS6500-2020	1 11/16 - 12	1 11/16 - 12
FS6500-2424	2 - 12	2 - 12

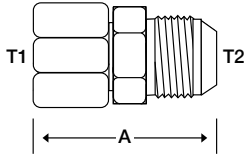
## FS6502 MF - FFX 45°



Part Number	T1	T2
	MORFS	FORFS
FS6502-0404	9/16 - 18	9/16 - 18
FS6502-0606	11/16 - 16	11/16 - 16
FS6502-0808	13/16 - 16	13/16 - 16
FS6502-1010	1 - 14	1 - 14
FS6502-1212	1 3/16 - 12	1 3/16 - 12
FS6502-1616	1 7/16 - 12	1 7/16 - 12
FS6502-2020	1 11/16 - 12	1 11/16 - 12
FS6502-2424	2 - 12	2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

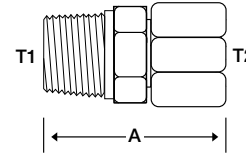
## FS6504 FFX - MJ



Part Number	T1	T2
	FORFS	MIC
FS6504-0404	9/16 - 18	7/16 - 20
FS6504-0606	11/16 - 16	9/16 - 18
FS6504-0808	13/16 - 16	3/4 - 16
FS6504-1010	1 - 14	7/8 - 14
FS6504-1212	1 3/16 - 12	1 1/16 - 12
FS6504-1616	1 7/16 - 12	1 5/16 - 12
FS6504-2020	1 11/16 - 12	1 5/8 - 12

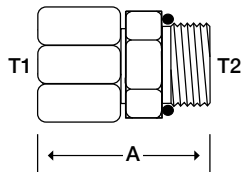
## FS6505 MP - FFX

SAE # 520432



Part Number	T1	T2
	MP	FORFS
FS6505-0404	1/4 - 18	9/16 - 18
FS6505-0604	3/8 - 18	9/16 - 18
FS6505-0606	3/8 - 18	1 1/16 - 16
FS6505-0608	3/8 - 18	1 3/16 - 16
FS6505-0806	1/2 - 14	1 1/16 - 16
FS6505-0808	1/2 - 14	1 3/16 - 16
FS6505-1212	3/4 - 14	1 3/16 - 12
FS6505-1616	1 - 11 1/2	1 7/16 - 12

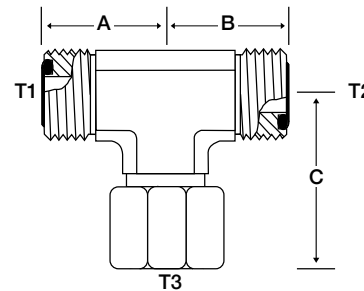
## FS6540 FFX - MORB



Part Number	T1	T2
	FORFS	MORB
FS6540-0404	9/16 - 18	7/16 - 20
FS6540-0606	11/16 - 16	9/16 - 18
FS6540-0808	13/16 - 16	3/4 - 16
FS6540-1010	1 - 14	7/8 - 14
FS6540-1212	1 3/16 - 12	1 1/16 - 12
FS6540-1616	1 7/16 - 12	1 5/16 - 12
FS6540-2020	1 11/16 - 12	1 5/8 - 12

## FS6600 MF - MF - FFX Tee

SAE # 520433



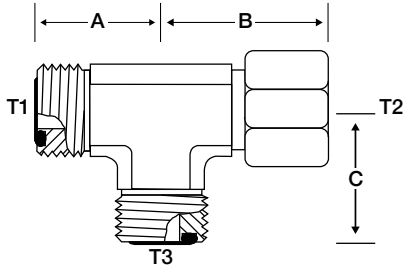
Part Number	T1 / T2	T3
	MORFS	FORFS
FS6600-040404	9/16 - 18	9/16 - 18
FS6600-060606	11/16 - 16	11/16 - 16
FS6600-080808	13/16 - 16	13/16 - 16
FS6600-101010	1 - 14	1 - 14
FS6600-121212	1 3/16 - 12	1 3/16 - 12
FS6600-161616	1 7/16 - 12	1 7/16 - 12
FS6600-202020	1 11/16 - 12	1 11/16 - 12
FS6600-242424	2 - 12	2 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# O-Ring Face Seal

## FS6602 MF - FFX - MF Tee

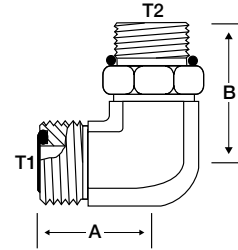
SAE # 520432



Part Number	T1 / T3	T2
	MORFS	FORFS
FS6602-040404	9/16 - 18	9/16 - 18
FS6602-060606	1 1/16 - 16	1 1/16 - 16
FS6602-080808	1 3/16 - 16	1 3/16 - 16
FS6602-101010	1 - 14	1 - 14
FS6602-121212	1 3/16 - 12	1 3/16 - 12
FS6602-161616	1 7/16 - 12	1 7/16 - 12
FS6602-202020	1 11/16 - 12	1 11/16 - 12
FS6602-242424	2 - 12	2 - 12

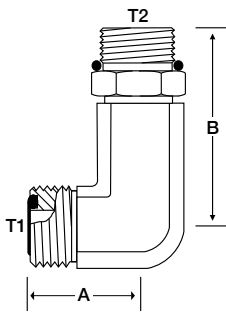
## FS6801 MF - MAORB 90°

SAE # 520220



Part Number	T1	T2
	MORFS	MORB
FS6801-0404	9/16 - 18	7/16 - 20
FS6801-0405	9/16 - 18	1/2 - 20
FS6801-0406	9/16 - 18	9/16 - 18
FS6801-0408	9/16 - 18	3/4 - 16
FS6801-0604	1 1/16 - 16	7/16 - 20
FS6801-0605	1 1/16 - 16	1/2 - 20
FS6801-0606	1 1/16 - 16	9/16 - 18
FS6801-0608	1 1/16 - 16	3/4 - 16
FS6801-0610	1 1/16 - 16	7/8 - 14
FS6801-0612	1 1/16 - 16	1 1/16 - 12
FS6801-0804	1 3/16 - 16	7/16 - 20
FS6801-0806	1 3/16 - 16	9/16 - 18
FS6801-0808	1 3/16 - 16	3/4 - 16
FS6801-0810	1 3/16 - 16	7/8 - 14
FS6801-0812	1 3/16 - 16	1 1/16 - 12
FS6801-1008	1 - 14	3/4 - 16
FS6801-1010	1 - 14	7/8 - 14
FS6801-1012	1 - 14	1 1/16 - 12
FS6801-1208	1 3/16 - 12	3/4 - 16
FS6801-1210	1 3/16 - 12	7/8 - 14
FS6801-1212	1 3/16 - 12	1 1/16 - 12
FS6801-1216	1 3/16 - 12	1 5/16 - 12
FS6801-1612	1 7/16 - 12	1 1/16 - 12
FS6801-1616	1 7/16 - 12	1 5/16 - 12
FS6801-1620	1 7/16 - 12	1 5/8 - 12
FS6801-2012	1 11/16 - 12	1 1/16 - 12
FS6801-2016	1 11/16 - 12	1 5/16 - 12
FS6801-2020	1 11/16 - 12	1 5/8 - 12
FS6801-2024	1 11/16 - 12	1 7/8 - 12
FS6801-2420	2 - 12	1 5/8 - 12
FS6801-2424	2 - 12	1 7/8 - 12

## FS6801L MF - MOARB 90° Long

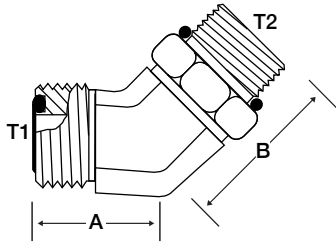


Part Number	T1	T2
	MORFS	MORB
FS6801L-0404	9/16 - 18	7/16 - 20
FS6801L-0606	1 1/16 - 16	9/16 - 18
FS6801L-0808	1 3/16 - 16	3/4 - 16
FS6801L-1010	1 - 14	7/8 - 14
FS6801L-1212	1 3/16 - 12	1 1/16 - 12
FS6801L-1616	1 7/16 - 12	1 5/16 - 12
FS6801L-2020	1 11/16 - 16	1 5/8 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FS6802 MF - MAORB 45°

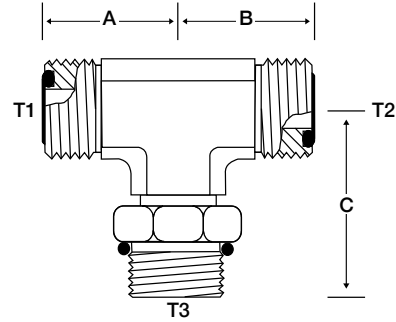
SAE # 520320



Part Number	T1	T2
	MORFS	MORB
FS6802-0404	1 <sup>1</sup> / <sub>16</sub> - 16	7 <sup>1</sup> / <sub>16</sub> - 20
FS6802-0406	1 <sup>1</sup> / <sub>16</sub> - 16	9 <sup>1</sup> / <sub>16</sub> - 18
FS6802-0604	1 <sup>1</sup> / <sub>16</sub> - 16	7 <sup>1</sup> / <sub>16</sub> - 20
FS6802-0606	1 <sup>1</sup> / <sub>16</sub> - 16	9 <sup>1</sup> / <sub>16</sub> - 18
FS6802-0608	1 <sup>1</sup> / <sub>16</sub> - 16	3 <sup>4</sup> / <sub>4</sub> - 16
FS6802-0610	1 <sup>1</sup> / <sub>16</sub> - 16	7 <sup>8</sup> / <sub>8</sub> - 14
FS6802-0806	1 <sup>3</sup> / <sub>16</sub> - 16	9 <sup>1</sup> / <sub>16</sub> - 18
FS6802-0808	1 <sup>3</sup> / <sub>16</sub> - 16	3 <sup>4</sup> / <sub>4</sub> - 16
FS6802-0810	1 <sup>3</sup> / <sub>16</sub> - 16	7 <sup>8</sup> / <sub>8</sub> - 14
FS6802-0812	1 <sup>3</sup> / <sub>16</sub> - 16	1 <sup>1</sup> / <sub>16</sub> - 12
FS6802-1008	1 - 14	3 <sup>4</sup> / <sub>4</sub> - 16
FS6802-1010	1 - 14	7 <sup>8</sup> / <sub>8</sub> - 14
FS6802-1012	1 - 14	1 <sup>1</sup> / <sub>16</sub> - 12
FS6802-1208	1 <sup>3</sup> / <sub>16</sub> - 12	3 <sup>4</sup> / <sub>4</sub> - 16
FS6802-1210	1 <sup>3</sup> / <sub>16</sub> - 12	7 <sup>8</sup> / <sub>8</sub> - 14
FS6802-1212	1 <sup>3</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>16</sub> - 12
FS6802-1216	1 <sup>3</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>16</sub> - 12
FS6802-1612	1 <sup>7</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>16</sub> - 12
FS6802-1616	1 <sup>7</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>16</sub> - 12
FS6802-1620	1 <sup>7</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>8</sub> - 12
FS6802-2016	1 <sup>11</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>16</sub> - 12
FS6802-2020	1 <sup>11</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>8</sub> - 12
FS6802-2424	2 - 12	1 <sup>7</sup> / <sub>8</sub> - 12

## FS6803 MF - MF - MAORB Tee

SAE # 520429

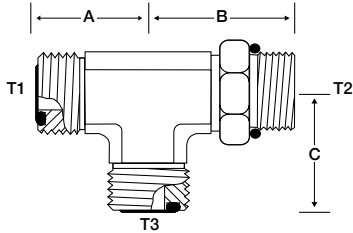


Part Number	T1 / T2	T3
	MORFS	MORB
FS6803-040404	9 <sup>1</sup> / <sub>16</sub> - 18	7 <sup>1</sup> / <sub>16</sub> - 20
FS6803-060606	1 <sup>1</sup> / <sub>16</sub> - 16	9 <sup>1</sup> / <sub>16</sub> - 18
FS6803-060608	1 <sup>1</sup> / <sub>16</sub> - 16	3 <sup>4</sup> / <sub>4</sub> - 16
FS6803-080808	1 <sup>3</sup> / <sub>16</sub> - 16	3 <sup>4</sup> / <sub>4</sub> - 16
FS6803-101010	1 - 14	7 <sup>8</sup> / <sub>8</sub> - 14
FS6803-121212	1 <sup>3</sup> / <sub>16</sub> - 12	1 <sup>1</sup> / <sub>16</sub> - 12
FS6803-161616	1 <sup>7</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>16</sub> - 12
FS6803-202020	1 <sup>11</sup> / <sub>16</sub> - 12	1 <sup>5</sup> / <sub>8</sub> - 12
FS6803-242424	2 - 12	1 <sup>7</sup> / <sub>8</sub> - 12

# O-Ring Face Seal

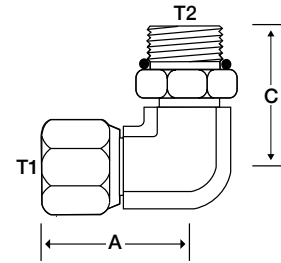
## FS6804 MF - MAORB - MF Tee

SAE # 520429



Part Number	T1 / T3	T2
	MORFS	MORB
FS6804-040404	9/16 - 18	7/16 - 20
FS6804-060406	1 1/16 - 16	7/16 - 20
FS6804-060606	1 1/16 - 16	9/16 - 18
FS6804-080608	1 3/16 - 16	9/16 - 18
FS6804-080808	1 3/16 - 16	3/4 - 16
FS6804-081008	1 3/16 - 16	7/8 - 14
FS6804-081208	1 3/16 - 16	1 1/16 - 12
FS6804-101010	1 - 14	7/8 - 14
FS6804-101210	1 - 14	1 1/16 - 12
FS6804-121212	1 3/16 - 12	1 1/16 - 12
FS6804-121216	1 3/16 - 12	1 1/16 - 12
FS6804-161616	1 7/16 - 12	1 5/16 - 12
FS6804-202020	1 11/16 - 12	1 5/8 - 12
FS6804-242424	2 - 12	1 7/8 - 12

## FS6809 FFX - MAORB 90°

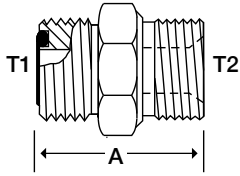


Part Number	T1	T2
	FORFS	MORB
FS6809-0404	9/16 - 18	7/16 - 20
FS6809-0606	1 1/16 - 16	9/16 - 18
FS6809-0808	1 3/16 - 16	3/4 - 16
FS6809-1010	1 - 14	7/8 - 14
FS6809-1212	1 3/16 - 12	1 1/16 - 12
FS6809-1616	1 7/16 - 12	1 5/16 - 12
FS6809-2020	1 11/16 - 12	1 5/8 - 12
FS6809-0404	9/16 - 18	7/16 - 20
FS6809-0606	1 1/16 - 16	9/16 - 18
FS6809-0808	1 3/16 - 16	3/4 - 16
FS6809-1010	1 - 14	7/8 - 14
FS6809-1212	1 3/16 - 12	1 1/16 - 12
FS6809-1616	1 7/16 - 12	1 5/16 - 12
FS6809-2020	1 11/16 - 12	1 5/8 - 12

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

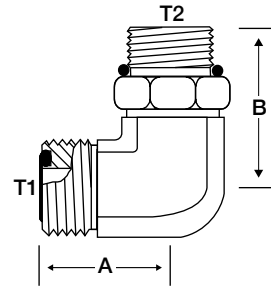


## FS7002 MF - MBSSP



Part Number	T1	T2
	MORFS	MBSPP
FS7002-0402	9/16 - 18	1/8 - 28
FS7002-0404	9/16 - 18	1/4 - 19
FS7002-0406	9/16 - 18	3/8 - 19
FS7002-0604	1 1/16 - 16	1/4 - 19
FS7002-0606	1 1/16 - 16	3/8 - 19
FS7002-0608	1 1/16 - 16	1/2 - 14
FS7002-0804	1 3/16 - 16	1/4 - 19
FS7002-0806	1 3/16 - 16	3/8 - 19
FS7002-0808	1 3/16 - 16	1/2 - 14
FS7002-1008	1 - 14	1/2 - 14
FS7002-1010	1 - 14	5/8 - 14
FS7002-1012	1 - 14	3/4 - 14
FS7002-1208	1 3/16 - 12	1/2 - 14
FS7002-1212	1 3/16 - 12	3/4 - 14
FS7002-1216	1 3/16 - 12	1 - 11
FS7002-1612	1 7/16 - 12	3/4 - 14
FS7002-1616	1 7/16 - 12	1 - 11
FS7002-1620	1 7/16 - 12	1 1/4 - 11
FS7002-2016	1 11/16 - 12	1 - 11
FS7002-2020	1 11/16 - 12	1 1/4 - 11
FS7002-2424	2 - 12	1 1/2 - 11

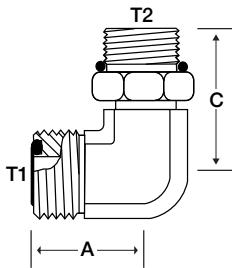
## FS7202 MF - MABSPP 90°



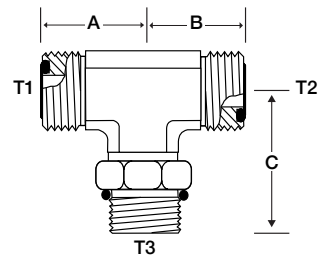
Part Number	T1	T2
	MORFS	MBSPP
FS7202-0404	9/16 - 18	1/4 - 19
FS7202-0606	1 1/16 - 16	3/8 - 19
FS7202-0806	1 3/16 - 16	3/8 - 19
FS7202-0808	1 3/16 - 16	1/2 - 14
FS7202-1008	1 - 14	1/2 - 14
FS7202-1010	1 - 14	5/8 - 14
FS7202-1208	1 3/16 - 12	1/2 - 14
FS7202-1212	1 3/16 - 12	3/4 - 14
FS7202-1616	1 7/16 - 12	1 - 11

# O-Ring Face Seal

## FS7205 MF - MMA 90°



## FS7210 MF - MF - MMA Tee

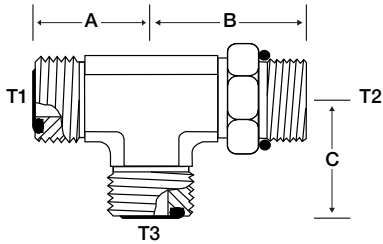


Part Number	T1	T2
	MORFS	Metric Port
FS7205-0412	9/16 - 18	M12 x 1.5
FS7205-0414	9/16 - 18	M14 x 1.5
FS7205-0610	1 1/16 - 16	M10 x 1.0
FS7205-0612	1 1/16 - 16	M12 x 1.5
FS7205-0614	1 1/16 - 16	M14 x 1.5
FS7205-0616	1 1/16 - 16	M16 x 1.5
FS7205-0618	1 1/16 - 16	M18 x 1.5
FS7205-0814	1 3/16 - 16	M14 x 1.5
FS7205-0816	1 3/16 - 16	M16 x 1.5
FS7205-0818	1 3/16 - 16	M18 x 1.5
FS7205-1018	1 - 14	M18 x 1.5
FS7205-1022	1 - 14	M22 x 1.5
FS7205-1027	1 - 14	M27 x 2.0
FS7205-1222	1 3/16 - 12	M22 x 1.5
FS7205-1227	1 3/16 - 12	M27 x 2.0
FS7205-1633	1 7/16 - 12	M33 x 2.0
FS7205-2033	1 1 1/16 - 12	M33 x 2.0
FS7205-2042	1 1 1/16 - 12	M42 x 2.0

Part Number	T1 / T2	T3
	MORFS	Metric Port
FS7210-040412	9/16 - 18	M12 x 1.5
FS7210-040414	9/16 - 18	M14 x 1.5
FS7210-060614	1 1/16 - 16	M14 x 1.5
FS7210-060616	1 1/16 - 16	M16 x 1.5
FS7210-080814	1 3/16 - 16	M14 x 1.5
FS7210-080818	1 3/16 - 16	M18 x 1.5
FS7210-080822	1 3/16 - 16	M22 x 1.5
FS7210-101022	1 - 14	M22 x 1.5
FS7210-121227	1 3/16 - 12	M27 x 2.0
FS7210-161633	1 7/16 - 12	M33 x 2.0
FS7210-202042	1 1 1/16 - 12	M42 x 2.0
FS7210-242448	2 - 12	M48 x 2.0

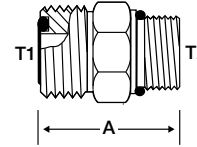
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## FS7215 MF - MMA - MF Tee



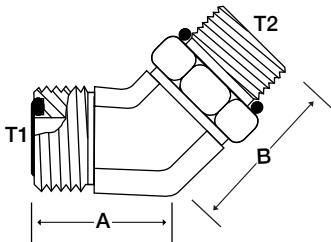
Part Number	T1 / T3	T2
	MORFS	Metric Port
FS7215-041204	9/16 - 18	M12 x 1.5
FS7215-041404	9/16 - 18	M14 x 1.5
FS7215-061406	1 1/16 - 16	M14 x 1.5
FS7215-061606	1 1/16 - 16	M16 x 1.5
FS7215-081408	1 3/16 - 16	M14 x 1.5
FS7215-081808	1 3/16 - 16	M18 x 1.5
FS7215-082208	1 3/16 - 16	M22 x 1.5
FS7215-101810	1-14	M18 x 1.5
FS7215-102210	1-14	M22 x 1.5
FS7215-122712	1 3/16 - 12	M27 x 2.0
FS7215-163316	1 7/16 - 12	M22 x 2.0
FS7215-244824	2 - 12	M48 x 2.0

## FS7640 MF - MM



Part Number	T1	T2
	MORFS	Metric Port
FS7640-0410	9/16 - 18	M10 x 1
FS7640-0412	9/16 - 18	M12 x 1.5
FS7640-0414	9/16 - 18	M14 x 1.5
FS7640-0614	1 1/16 - 16	M14 x 1.5
FS7640-0616	1 1/16 - 16	M16 x 1.5
FS7640-0618	1 1/16 - 16	M18 x 1.5
FS7640-0622	1 1/16 - 16	M22 x 1.5
FS7640-0814	1 3/16 - 16	M14 x 1.5
FS7640-0816	1 3/16 - 16	M16 x 1.5
FS7640-0818	1 3/16 - 16	M18 x 1.5
FS7640-0822	1 3/16 - 16	M22 x 1.5
FS7640-0827	1 3/16 - 16	M27 x 2.0
FS7640-0833	1 3/16 - 16	M33 x 2.0
FS7640-1018	1 - 14	M18 x 1.5
FS7640-1022	1 - 14	M22 x 1.5
FS7640-1027	1 - 14	M27 x 2.0
FS7640-1033	1 - 14	M33 x 2.0
FS7640-1222	1 3/16 - 12	M22 x 1.5
FS7640-1227	1 3/16 - 12	M27 x 2.0
FS7640-1233	1 3/16 - 12	M33 x 2.0
FS7640-1633	1 7/16 - 12	M33 x 2.0
FS7640-2038	1 11/16 - 12	M38 x 2.0
FS7640-2042	1 11/16 - 12	M42 x 2.0

## FS7300 MF - MMA 45°



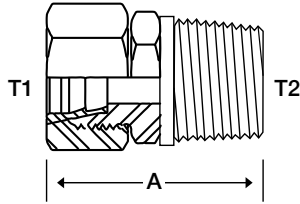
Part Number	T1	T2
	MORFS	Metric Port
FS7300-0414	9/16 - 18	M14 x 1.5
FS7300-0616	1 1/16 - 16	M16 x 1.5
FS7300-0814	1 3/16 - 16	M14 x 1.5
FS7300-0818	1 3/16 - 16	M18 x 1.5
FS7300-1022	1-14	M22 x 1.5
FS7300-1227	1 3/16 - 12	M27 x 2.0
FS7300-1633	1 7/16 - 12	M33 x 2.0
FS7300-2042	1 11/16 - 12	M42 x 2.0
FS7300-2448	2 - 12	M48 x 2.0

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

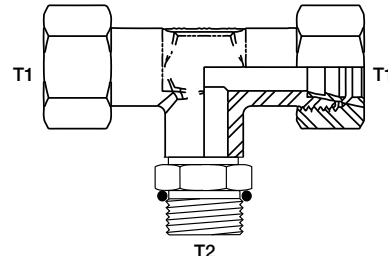
# Metric Compression

## 8102L/S MC - MBSPT

(TN93R)



## 8123L/S MC - MC - MABSPP

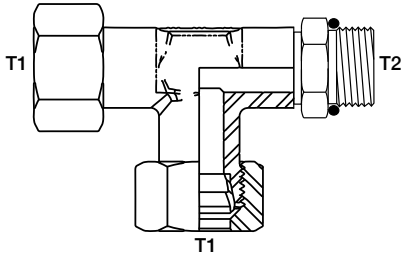


Part Number	T1		T2
	Thread	Tube	MBSPT
8102L-0602	M12 x 1.5	L6	1/8 - 28
8102L-0804	M14 x 1.5	L8	1/4 - 19
8102L-1004	M16 x 1.5	L10	1/4 - 20
8102L-1206	M18 x 1.5	L12	3/8 - 19
8102L-1508	M22 x 1.5	L15	1/2 - 14
8102L-1808	M26 x 1.5	L18	1/2 - 14
8102L-2212	M30 x 2.0	L22	3/4 - 14
8102L-2816	M36 x 2.0	L28	1 - 11
8102S-0604	M14 x 1.5	S6	1/8 - 28
8102S-0804	M16 x 1.5	S8	1/4 - 19
8102S-1006	M18 x 1.5	S10	1/4 - 20
8102S-1206	M20 x 1.5	S12	3/8 - 19
8102S-1408	M22 x 1.5	S14	1/2 - 14
8102S-1608	M24 x 1.5	S16	1/2 - 14
8102S-2012	M30 x 2.0	S20	3/4 - 14
8102S-2516	M36 x 2.0	S25	1 - 11

Part Number	T1 / T2		T3
	MC	Tube	MBSPP
8123L-0602	M12 x 1.5	L6	1/8 - 28
8123L-0804	M14 x 1.5	L8	1/4 - 19
8123L-1004	M16 x 1.5	L10	1/4 - 20
8123L-1206	M18 x 1.5	L12	3/8 - 19
8123L-1508	M22 x 1.5	L15	1/2 - 14
8123L-1808	M26 x 1.5	L18	1/2 - 14
8123L-2212	M30 x 2.0	L22	3/4 - 14
8123L-2816	M36 x 2.0	L28	1 - 11
8123L-3520	M42 x 2.0	L35	1 1/4 - 11
8123L-4224	M52 x 2.0	L42	1 1/2 - 11
8123S-0604	M14 x 1.5	S6	1/8 - 28
8123S-0804	M16 x 1.5	S8	1/4 - 19
8123S-1006	M18 x 1.5	S10	1/4 - 20
8123S-1206	M20 x 1.5	S12	3/8 - 19
8123S-1408	M22 x 1.5	S14	1/2 - 14
8123S-1608	M24 x 1.5	S16	1/2 - 14
8123S-2012	M30 x 2.0	S20	3/4 - 14
8123S-2516	M36 x 2.0	S25	1 - 11
8123S-3020	M42 x 2.0	S30	1 1/4 - 11
8123S-3824	M52 x 2.0	S38	1 1/2 - 11

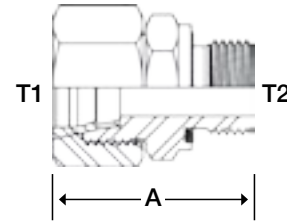
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 8133L/S MABSPP - MC - MCTee



Part Number	T1 / T2		T3
	MC	Tube	MBSPP
8133L-0602	M12 x 1.5	L6	1/8 - 28
8133L-0804	M14 x 1.5	L8	1/4 - 19
8133L-1004	M16 x 1.5	L10	1/4 - 20
8133L-1206	M18 x 1.5	L12	3/8 - 19
8133L-1508	M22 x 1.5	L15	1/2 - 14
8133L-1808	M26 x 1.5	L18	1/2 - 14
8133L-2212	M30 x 2.0	L22	3/4 - 14
8133L-2816	M36 x 2.0	L28	1 - 11
8133L-3520	M42 x 2.0	L35	1 1/4 - 11
8133L-4224	M52 x 2.0	L42	1 1/2 - 11
8133S-0604	M14 x 1.5	S6	1/8 - 28
8133S-0804	M16 x 1.5	S8	1/4 - 19
8133S-1006	M18 x 1.5	S10	1/4 - 20
8133S-1206	M20 x 1.5	S12	3/8 - 19
8133S-1408	M22 x 1.5	S14	1/2 - 14
8133S-1608	M24 x 1.5	S16	1/2 - 14
8133S-2012	M30 x 2.0	S20	3/4 - 14
8133S-2516	M36 x 2.0	S25	1 - 11
8133S-3020	M42 x 2.0	S30	1 1/4 - 11
8133S-3824	M52 x 2.0	S38	1 1/2 - 11

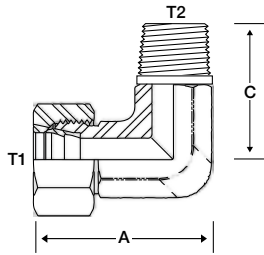
## 8151L/S MC - MBSPP ED Seal



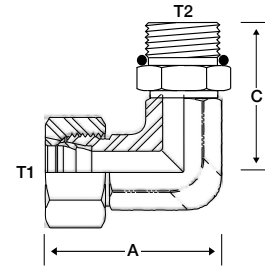
Part Number	T1		T2
	Thread	Tube	MBSPP
8151L-0602	M12 x 1.5	L6	1/8 - 28
8151L-0804	M14 x 1.5	L8	1/4 - 19
8151L-1004	M16 x 1.5	L10	1/4 - 20
8151L-1206	M18 x 1.5	L12	3/8 - 19
8151L-1508	M22 x 1.5	L15	1/2 - 14
8151L-1808	M26 x 1.5	L18	1/2 - 14
8151L-2212	M30 x 2.0	L22	3/4 - 14
8151L-2816	M36 x 2.0	L28	1 - 11
8151L-3520	M42 x 2.0	L35	1 1/4 - 11
8151L-4224	M52 x 2.0	L42	1 1/2 - 11
8151S-0604	M14 x 1.5	S6	1/8 - 28
8151S-0804	M16 x 1.5	S8	1/4 - 19
8151S-1006	M18 x 1.5	S10	1/4 - 20
8151S-1206	M20 x 1.5	S12	3/8 - 19
8151S-1408	M22 x 1.5	S14	1/2 - 14
8151S-1608	M24 x 1.5	S16	1/2 - 14
8151S-2012	M30 x 2.0	S20	3/4 - 14
8151S-2516	M36 x 2.0	S25	1 - 11
8151S-3020	M42 x 2.0	S30	1 1/4 - 11
8151S-3824	M52 x 2.0	S38	1 1/2 - 11

# Metric Compression

## 8192L/S MC - MBSPT 90° (TN94R)



## 8193L/S MC - MABSP 90°

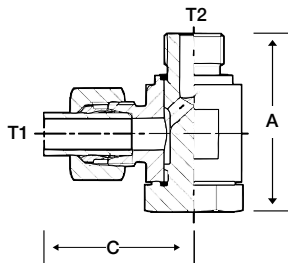


Part Number	T1		T2
	Thread	Tube	MBSPT
8192L-0602	M12 x 1.5	L6	1/8 - 28
8192L-0804	M14 x 1.5	L8	1/4 - 19
8192L-1004	M16 x 1.5	L10	1/4 - 20
8192L-1206	M18 x 1.5	L12	3/8 - 19
8192L-1508	M22 x 1.5	L15	1/2 - 14
8192L-1808	M26 x 1.5	L18	1/2 - 14
8192L-2212	M30 x 2.0	L22	3/4 - 14
8192L-2816	M36 x 2.0	L28	1 - 11
8192S-0604	M14 x 1.5	S6	1/8 - 28
8192S-0804	M16 x 1.5	S8	1/4 - 19
8192S-1006	M18 x 1.5	S10	1/4 - 20
8192S-1206	M20 x 1.5	S12	3/8 - 19
8192S-1408	M22 x 1.5	S14	1/2 - 14
8192S-1608	M24 x 1.5	S16	1/2 - 14
8192S-2012	M30 x 2.0	S20	3/4 - 14
8192S-2516	M36 x 2.0	S25	1 - 11

Part Number	T1		T2
	Thread	Tube	MBSPP
8193L-0602	M12 x 1.5	L6	1/8 - 28
8193L-0804	M14 x 1.5	L8	1/4 - 19
8193L-1004	M16 x 1.5	L10	1/4 - 20
8193L-1206	M18 x 1.5	L12	3/8 - 19
8193L-1508	M22 x 1.5	L15	1/2 - 14
8193L-1808	M26 x 1.5	L18	1/2 - 14
8193L-2212	M30 x 2.0	L22	3/4 - 14
8193L-2816	M36 x 2.0	L28	1 - 11
8193L-3520	M42 x 2.0	L35	1 1/4 - 11
8193L-4224	M52 x 2.0	L42	1 1/2 - 11
8193S-0604	M14 x 1.5	S6	1/8 - 28
8193S-0804	M16 x 1.5	S8	1/4 - 19
8193S-1006	M18 x 1.5	S10	1/4 - 20
8193S-1206	M20 x 1.5	S12	3/8 - 19
8193S-1408	M22 x 1.5	S14	1/2 - 14
8193S-1608	M24 x 1.5	S16	1/2 - 14
8193S-2012	M30 x 2.0	S20	3/4 - 14
8193S-2516	M36 x 2.0	S25	1 - 11
8193S-3020	M42 x 2.0	S30	1 1/4 - 11
8193S-3824	M52 x 2.0	S38	1 1/2 - 11

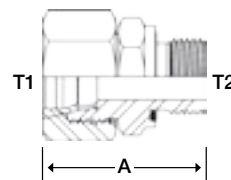
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 8199LL/L/S MC - BJBSP ED Seal 90° (TN130R)



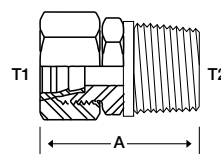
Part Number	T1		T2
	MC	Tube	MBSPP
8199LL-0402	M8 x 1.0	LL4	1/8 - 28
8199LL-0602	M10 x 1.0	LL6	1/8 - 29
8199LL-0802	M12 x 1.0	LL8	1/8 - 30
8199L-0602	M12 x 1.5	L6	1/8 - 28
8199L-0804	M14 x 1.5	L8	1/4 - 19
8199L-1004	M16 x 1.5	L10	1/4 - 20
8199L-1206	M18 x 1.5	L12	3/8 - 19
8199L-1508	M22 x 1.5	L15	1/2 - 14
8199L-1808	M26 x 1.5	L18	1/2 - 14
8199L-2212	M30 x 2.0	L22	3/4 - 14
8199L-2816	M36 x 2.0	L28	1 - 11
8199L-3220	M42 x 2.0	L35	1 1/4 - 11
8199L-4224	M52 x 2.0	L42	1 1/2 - 11
8199S-0604	M14 x 1.5	S6	1/8 - 28
8199S-0804	M16 x 1.5	S8	1/4 - 19
8199S-1006	M18 x 1.5	S10	1/4 - 20
8199S-1206	M20 x 1.5	S12	3/8 - 19
8199S-1408	M22 x 1.5	S14	1/2 - 14
8199S-1608	M24 x 1.5	S16	1/2 - 14
8199S-2012	M30 x 2.0	S20	3/4 - 14
8199S-2516	M36 x 2.0	S25	1 - 11
8199S-3020	M42 x 2.0	S30	1 1/4 - 11
8199S-3824	M52 x 2.0	S38	1 1/4 - 11

## 8201L/S MC - MM ED Seal



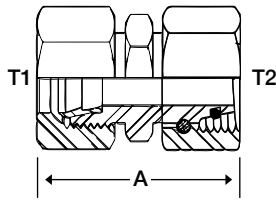
Part Number	T1		T2
	Thread	Tube	Metric Port
8201L-0610	M12 x 1.5	L6	M10 x 1.0
8201L-0812	M14 x 1.5	L8	M12 x 1.5
8201L-1014	M16 x 1.5	L10	M14 x 1.5
8201L-1216	M18 x 1.5	L12	M16 x 1.5
8201L-1518	M22 x 1.5	L15	M18 x 1.5
8201L-1822	M26 x 1.5	L18	M22 x 1.5
8201L-2226	M30 x 2.0	L22	M26 x 1.5
8201L-2833	M36 x 2.0	L28	M33 x 2.0
8201L-3542	M42 x 2.0	L35	M42 x 2.0
8201L-4248	M52 x 2.0	L42	M52 x 2.0
8201S-0612	M14 x 1.5	S6	M14 x 1.5
8201S-0814	M16 x 1.5	S8	M16 x 1.5
8201S-1016	M18 x 1.5	S10	M18 x 1.5
8201S-1218	M20 x 1.5	S12	M20 x 1.5
8201S-1420	M22 x 1.5	S14	M22 x 1.5
8201S-1622	M24 x 1.5	S16	M24 x 1.5
8201S-2027	M30 x 2.0	S20	M30 x 2.0
8201S-2533	M36 x 2.0	S25	M36 x 2.0
8201S-3042	M42 x 2.0	S30	M42 x 2.0
8201S-3848	M52 x 2.0	S38	M52 x 2.0

## 8202L/S MC - MMT Metric Tapped (TN93M)



Part Number	T1		T2
	Thread	Tube	Tapped
8202L-0610	M12 x 1.5	L6	M10 x 1.0
8202L-0812	M14 x 1.5	L8	M12 x 1.5
8202L-1014	M16 x 1.5	L10	M14 x 1.5
8202L-1216	M18 x 1.5	L12	M16 x 1.5
8202S-0612	M14 x 1.5	S6	M12 x 1.5
8202S-0814	M16 x 1.5	S8	M14 x 1.5
8202S-1016	M18 x 1.5	S10	M16 x 1.5

## 8205L/S MC - FML/S



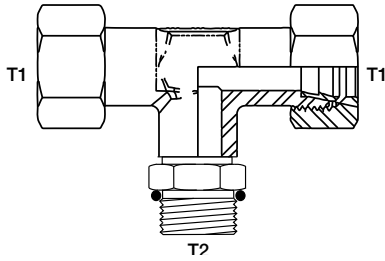
Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8205L-0612	M12 x 1.5	L6	M12 x 1.5	L6
8205L-0616	M12 x 1.5	L6	M16 x 1.5	L10
8205L-0618	M12 x 1.5	L6	M18 x 1.5	L12
8205L-0814	M14 x 1.5	L8	M14 x 1.5	L8
8205L-0816	M14 x 1.5	L8	M16 x 1.5	L10
8205L-0822	M14 x 1.5	L8	M18 x 1.5	L12
8205L-1016	M16 x 1.5	L10	M16 x 1.5	L10
8205L-1018	M16 x 1.5	L10	M18 x 1.5	L12
8205L-1022	M16 x 1.5	L10	M18 x 1.5	L12
8205L-1026	M16 x 1.5	L10	M26 x 1.5	L18
8205L-1218	M18 x 1.5	L12	M18 x 1.5	L12
8205L-1222	M18 x 1.5	L12	M18 x 1.5	L12
8205L-1226	M18 x 1.5	L12	M26 x 1.5	L18
8205L-1230	M18 x 1.5	L12	M30 x 2.0	L22
8205L-1522	M22 x 1.5	L15	M22 x 1.5	L15
8205L-1526	M22 x 1.5	L15	M26 x 1.5	L18
8205L-1536	M22 x 1.5	L15	M36 x 2.0	L28
8205L-1826	M26 x 1.5	L18	M26 x 1.5	L18
8205L-1830	M26 x 1.5	L18	M30 x 2.0	L22
8205L-1836	M26 x 1.5	L18	M36 x 2.0	L28
8205L-1842	M26 x 1.5	L18	M30 x 2.0	L22
8205L-2230	M30 x 2.0	L22	M30 x 2.0	L22
8205L-2836	M36 x 2.0	L28	M36 x 2.0	L28
8205L-3545	M42 x 2.0	L35	M42 x 2.0	L35
8205L-4252	M52 x 2.0	L42	M52 x 2.0	L42

Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8205S-0614	M14 x 1.5	S6	M14 x 1.5	S6
8205S-0816	M16 x 1.5	S8	M16 x 1.5	S8
8205S-0818	M16 x 1.5	S8	M18 x 1.5	S10
8205S-1018	M18 x 1.5	S10	M18 x 1.5	S10
8205S-1020	M18 x 1.5	S10	M20 x 1.5	S12
8205S-1220	M20 x 1.5	S12	M20 x 1.5	S12
8205S-1224	M20 x 1.5	S12	M24 x 1.5	S16
8205S-1630	M24 x 1.5	S16	M30 x 2.0	S20
8205S-2030	M30 x 2.0	S20	M30 x 2.0	S20
8205S-2036	M30 x 2.0	S20	M36 x 2.0	S25
8205S-2214	M22 x 1.5	S14	M22 x 1.5	S14
8205S-2416	M24 x 1.5	S16	M24 x 1.5	S16
8205S-2536	M36 x 2.0	S25	M36 x 2.0	S25
8205S-2552	M36 x 2.0	S25	M52 x 2.0	S36
8205S-3042	M42 x 2.0	S30	M42 x 2.0	S30
8205S-3052	M42 x 2.0	S30	M52 x 2.0	S38
8205S-3852	M52 x 2.0	S36	M52 x 2.0	S38

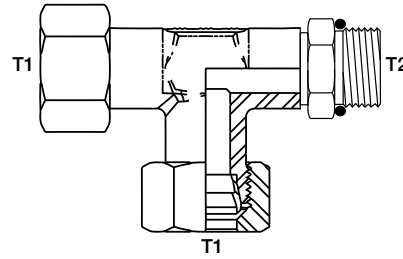
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## 8223L/S MC - MC - MMA Tee



## 8233L/S MMA - MC - MC Tee



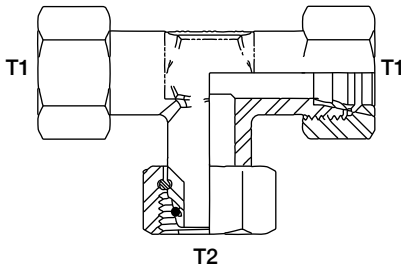
Part Number	T1 / T2		T3
	Thread	Tube	Metric Port
8223L-0610	M12 x 1.5	L6	M10 x 1.0
8223L-0812	M14 x 1.5	L8	M12 x 1.5
8223L-1014	M16 x 1.5	L10	M14 x 1.5
8223L-1216	M18 x 1.5	L12	M16 x 1.5
8223L-1518	M22 x 1.5	L15	M18 x 1.5
8223L-1822	M26 x 1.5	L18	M22 x 1.5
8223L-2226	M30 x 2.0	L22	M26 x 1.5
8223L-2833	M36 x 2.0	L28	M33 x 2.0
8223L-3542	M42 x 2.0	L35	M26 x 1.7
8223L-4248	M52 x 2.0	L42	M26 x 1.8
8223S-0612	M14 x 1.5	S6	M12 x 1.5
8223S-0814	M16 x 1.5	S8	M14 x 1.5
8223S-1016	M18 x 1.5	S10	M16 x 1.5
8223S-1218	M20 x 1.5	S12	M18 x 1.5
8223S-1420	M22 x 1.5	S14	M20 x 1.5
8223S-1622	M24 x 1.5	S16	M22 x 1.5
8223S-2027	M30 x 2.0	S20	M27 x 2.0
8223S-2533	M36 x 2.0	S25	M33 x 2.0
8223S-3042	M42 x 2.0	S30	M42 x 2.0
8223S-3848	M52 x 2.0	S38	M52 x 2.0

Part Number	T1 / T2		T3
	Thread	Tube	Metric Port
8233L-0610	M12 x 1.5	L6	M10 x 1.0
8233L-0812	M14 x 1.5	L8	M12 x 1.5
8233L-1014	M16 x 1.5	L10	M14 x 1.5
8233L-1216	M18 x 1.5	L12	M16 x 1.5
8233L-1518	M22 x 1.5	L15	M18 x 1.5
8233L-1822	M26 x 1.5	L18	M22 x 1.5
8233L-2226	M30 x 2.0	L22	M26 x 1.5
8233L-2833	M36 x 2.0	L28	M33 x 2.0
8233L-3542	M42 x 2.0	L35	M26 x 1.7
8233L-4248	M52 x 2.0	L42	M26 x 1.8
8233S-0612	M14 x 1.5	S6	M12 x 1.5
8233S-0814	M16 x 1.5	S8	M14 x 1.5
8233S-1016	M18 x 1.5	S10	M16 x 1.5
8233S-1218	M20 x 1.5	S12	M18 x 1.5
8233S-1420	M22 x 1.5	S14	M20 x 1.5
8233S-1622	M24 x 1.5	S16	M22 x 1.5
8233S-2027	M30 x 2.0	S20	M27 x 2.0
8233S-2533	M36 x 2.0	S25	M33 x 2.0
8233S-3042	M42 x 2.0	S30	M42 x 2.0
8233S-3848	M52 x 2.0	S38	M52 x 2.0

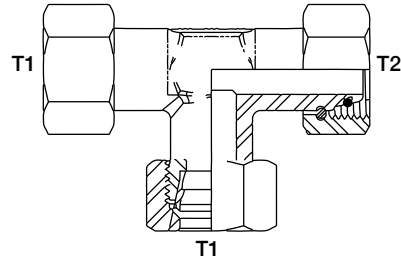
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

# Metric Compression

**8225L/S MC - MC - FML Tee**  
(TN120)



**8235L/S MC - FML - MC Tee**  
(TN121)

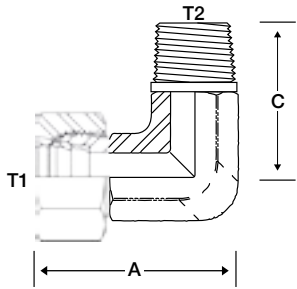


Part Number	T1		T2 / T3	
	Thread	Tube	Thread	Tube
8225L-0612	M12 x 1.5	L6	M12 x 1.5	L6
8225L-0814	M14 x 1.5	L8	M14 x 1.5	L8
8225L-1016	M16 x 1.5	L10	M16 x 1.5	L10
8225L-1218	M18 x 1.5	L12	M18 x 1.5	L12
8225L-1522	M22 x 1.5	L15	M22 x 1.5	L15
8225L-1826	M26 x 1.5	L18	M26 x 1.5	L18
8225L-2230	M30 x 2.0	L22	M30 x 2.0	L22
8225L-2836	M36 x 2.0	L28	M36 x 2.0	L28
8225L-3545	M42 x 2.0	L35	M42 x 2.0	L35
8225L-4252	M52 x 2.0	L42	M52 x 2.0	L42
8225S-0614	M14 x 1.5	S6	M14 x 1.5	S6
8225S-0816	M16 x 1.5	S8	M16 x 1.5	S8
8225S-1018	M18 x 1.5	S10	M18 x 1.5	S10
8225S-1220	M20 x 1.5	S12	M20 x 1.5	S12
8225S-1422	M22 x 1.5	S14	M22 x 1.5	S14
8225S-1624	M24 x 1.5	S16	M24 x 1.5	S16
8225S-2030	M30 x 2.0	S20	M30 x 2.0	S20
8225S-2536	M36 x 2.0	S25	M36 x 2.0	S25
8225S-3042	M42 x 2.0	S30	M42 x 2.0	S30
8225S-3852	M52 x 2.0	S38	M52 x 2.0	S38

Part Number	T1 / T2		T3	
	Thread	Tube	Thread	Tube
8235L-0612	M12 x 1.5	L6	M12 x 1.5	L6
8235L-0814	M14 x 1.5	L8	M14 x 1.5	L8
8235L-1016	M16 x 1.5	L10	M16 x 1.5	L10
8235L-1218	M18 x 1.5	L12	M18 x 1.5	L12
8235L-1522	M22 x 1.5	L15	M22 x 1.5	L15
8235L-1826	M26 x 1.5	L18	M26 x 1.5	L18
8235L-2230	M30 x 2.0	L22	M30 x 2.0	L22
8235L-2836	M36 x 2.0	L28	M36 x 2.0	L28
8235L-3545	M42 x 2.0	L35	M42 x 2.0	L35
8235L-4252	M52 x 2.0	L42	M52 x 2.0	L42
8235S-0614	M14 x 1.5	S6	M14 x 1.5	S6
8235S-0816	M16 x 1.5	S8	M16 x 1.5	S8
8235S-1018	M18 x 1.5	S10	M18 x 1.5	S10
8235S-1220	M20 x 1.5	S12	M20 x 1.5	S12
8235S-1422	M22 x 1.5	S14	M22 x 1.5	S14
8235S-1624	M24 x 1.5	S16	M24 x 1.5	S16
8235S-2030	M30 x 2.0	S20	M30 x 2.0	S20
8235S-2536	M36 x 2.0	S25	M36 x 2.0	S25
8235S-3042	M42 x 2.0	S30	M42 x 2.0	S30
8235S-3852	M52 x 2.0	S38	M52 x 2.0	S38

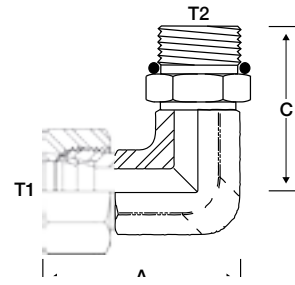
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 8292L MC - MMT 90° (TN94M)



Part Number	T1		T2
	Thread	Tube	Tapered
8292L-0610	M12 x 1.5	L6	M10 x 1.0
8292L-0812	M14 x 1.5	L8	M12 x 1.5
8292L-1014	M16 x 1.5	L10	M14 x 1.5
8292L-1216	M18 x 1.5	L12	M16 x 1.5
8292L-1518	M22 x 1.5	L15	M18 x 1.5

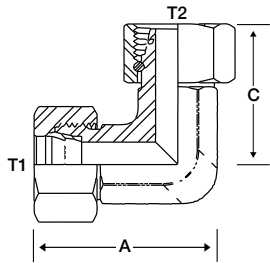
## 8293L/S MC - MMA 90°



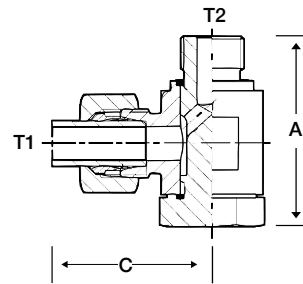
Part Number	T2		T1
	Thread	Tube	Metric Port
8293L-0610	M12 x 1.5	L6	M10 x 1.0
8293L-0812	M14 x 1.5	L8	M12 x 1.5
8293L-1014	M16 x 1.5	L10	M14 x 1.5
8293L-1216	M18 x 1.5	L12	M16 x 1.5
8293L-1518	M22 x 1.5	L15	M18 x 1.5
8293L-1822	M26 x 1.5	L18	M22 x 1.5
8293L-2226	M30 x 2.0	L22	M26 x 1.5
8293L-2833	M36 x 2.0	L28	M33 x 2.0
8293L-3542	M42 x 2.0	L35	M42 x 2.0
8293L-4248	M52 x 2.0	L42	M52 x 2.0
8293S-0612	M14 x 1.5	S6	M12 x 1.5
8293S-0814	M16 x 1.5	S8	M14 x 1.5
8293S-1016	M18 x 1.5	S10	M16 x 1.5
8293S-1218	M20 x 1.5	S12	M18 x 1.5
8293S-1420	M22 x 1.5	S14	M20 x 1.5
8293S-1622	M24 x 1.5	S16	M22 x 1.5
8293S-2027	M30 x 2.0	S20	M27 x 2.0
8293S-2533	M36 x 2.0	S25	M33 x 2.0
8293S-3042	M42 x 2.0	S30	M42 x 2.0
8293S-3848	M52 x 2.0	S36	M48 x 2.0

# Metric Compression

## 8295L/S MC - FMS 90°



## 8299LL/L/S MC - BJM ED Seal 90° (TN130M)

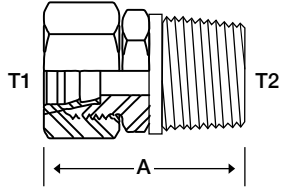


Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8295L-0612	M12 x 1.5	L6	M12 x 1.5	L6
8295L-0814	M14 x 1.5	L8	M14 x 1.5	L8
8295L-1016	M16 x 1.5	L10	M16 x 1.5	L10
8295L-1218	M18 x 1.5	L12	M18 x 1.5	L12
8295L-1522	M22 x 1.5	L15	M22 x 1.5	L15
8295L-1826	M26 x 1.5	L18	M26 x 1.5	L18
8295L-2230	M30 x 2.0	L22	M30 x 2.0	L22
8295L-2836	M36 x 2.0	L28	M36 x 2.0	L28
8295L-3545	M42 x 2.0	L35	M42 x 2.0	L35
8295L-4252	M52 x 2.0	L42	M52 x 2.0	L42
8295S-0614	M14 x 1.5	S6	M14 x 1.5	S6
8295S-0816	M16 x 1.5	S8	M16 x 1.5	S8
8295S-1018	M18 x 1.5	S10	M18 x 1.5	S10
8295S-1220	M20 x 1.5	S12	M20 x 1.5	S12
8295S-1422	M22 x 1.5	S14	M22 x 1.5	S14
8295S-1624	M24 x 1.5	S16	M24 x 1.5	S16
8295S-2030	M30 x 2.0	S20	M30 x 2.0	S20
8295S-2536	M36 x 2.0	S25	M36 x 2.0	S25
8295S-3042	M42 x 2.0	S30	M42 x 2.0	S30
8295S-3852	M52 x 2.0	S38	M52 x 2.0	S38

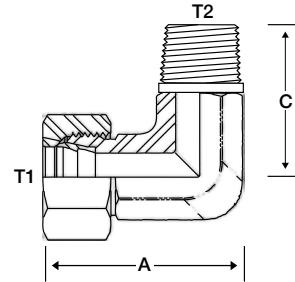
Part Number	T1		T2
	MC	Tube	Metric Port
8299LL-0408	M8 x 1.0	LL4	M8 x 1.0
8299LL-0610	M10 x 1.0	LL6	M10 x 1.0
8299LL-0810	M12 x 1.0	LL8	M10 x 1.0
8299L-0610	M12 x 1.5	L6	M10 x 1.0
8299L-0812	M14 x 1.5	L8	M12 x 1.5
8299L-1014	M16 x 1.5	L10	M14 x 1.5
8299L-1216	M18 x 1.5	L12	M16 x 1.5
8299L-1518	M22 x 1.5	L15	M18 x 1.5
8299L-1822	M26 x 1.5	L18	M22 x 1.5
8299L-2226	M30 x 2.0	L22	M26 x 1.5
8299L-2833	M36 x 2.0	L28	M33 x 2.0
8299L-3542	M42 x 2.0	L35	M42 x 2.0
8299L-4248	M52 x 2.0	L42	M52 x 2.0
8299S-0612	M14 x 1.5	S6	M12 x 1.5
8299S-0814	M16 x 1.5	S8	M14 x 1.5
8299S-1016	M18 x 1.5	S10	M16 x 1.5
8299S-1218	M20 x 1.5	S12	M18 x 1.5
8299S-1420	M22 x 1.5	S14	M20 x 1.5
8299S-1622	M24 x 1.5	S16	M24 x 1.5
8299S-2027	M30 x 2.0	S20	M27 x 2.0
8299S-2533	M36 x 2.0	S25	M33 x 2.0
8299S-3042	M42 x 2.0	S30	M42 x 2.0
8299S-3848	M52 x 2.0	S38	M52 x 2.0

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## 8302L/S MC - MP (TN126NPT)



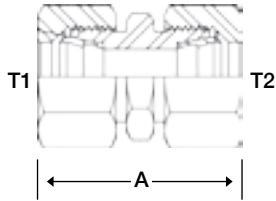
## 8392L/S MC - MP 90° (TN94NPT)



Part Number	T1		T2
	Thread	Tube	MNPT
8302L-0602	M12 x 1.5	L6	1/8 - 27
8302L-0804	M14 x 1.5	L8	1/4 - 18
8302L-1004	M16 x 1.5	L10	1/4 - 18
8302L-1206	M18 x 1.5	L12	3/8 - 18
8302L-1508	M22 x 1.5	L15	1/2 - 14
8302L-1808	M26 x 1.5	L18	1/2 - 14
8302L-2212	M30 x 2.0	L22	3/4 - 14
8302L-2816	M36 x 2.0	L28	1 - 11 1/2
8302S-0604	M14 x 1.5	S6	1/8 - 27
8302S-0804	M16 x 1.5	S8	1/4 - 18
8302S-1006	M18 x 1.5	S10	1/4 - 18
8302S-1206	M20 x 1.5	S12	3/8 - 18
8302S-1408	M22 x 1.5	S14	1/2 - 14
8302S-1608	M24 x 1.5	S16	1/2 - 14
8302S-2012	M30 x 2.0	S20	3/4 - 14
8302S-2516	M36 x 2.0	S25	1 - 11 1/2

Part Number	T1		T2
	Thread	Tube	MNPT
8392L-0602	M12 x 1.5	L6	1/8 - 27
8392L-0804	M14 x 1.5	L8	1/4 - 18
8392L-1004	M16 x 1.5	L10	1/4 - 18
8392L-1206	M18 x 1.5	L12	3/8 - 18
8392L-1508	M22 x 1.5	L15	1/2 - 14
8392L-1808	M26 x 1.5	L18	1/2 - 14
8392L-2212	M30 x 2.0	L22	3/4 - 14
8392L-2816	M36 x 2.0	L28	1 - 11 1/2
8392S-0604	M14 x 1.5	S6	1/4 - 18
8392S-0804	M16 x 1.5	S8	1/4 - 18
8392S-1006	M18 x 1.5	S10	3/8 - 18
8392S-1206	M20 x 1.5	S12	3/8 - 18
8392S-1408	M22 x 1.5	S14	1/2 - 14
8392S-1608	M24 x 1.5	S16	1/2 - 14
8392S-2012	M30 x 2.0	S20	3/4 - 14
8392S-2516	M36 x 2.0	S25	1 - 11 1/2

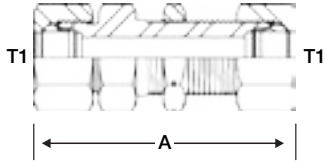
## 8400LL/L/S MC - MC (TN98)



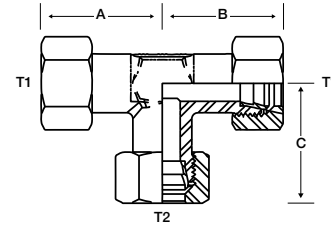
Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8400LL-04	M8 x 1.0	LL4	M8 x 1.0	LL4
8400LL-06	M10 x 1.0	LL6	M10 x 1.0	LL6
8400LL-08	M12 x 1.0	LL8	M12 x 1.0	LL8
8400L-06	M12 x 1.5	L6	M12 x 1.5	L6
8400L-08	M14 x 1.5	L8	M14 x 1.5	L8
8400L-10	M16 x 1.5	L10	M16 x 1.5	L10
8400L-1210	M18 x 1.5	L12	M16 x 1.5	L10
8400L-12	M18 x 1.5	L12	M18 x 1.5	L12
8400L-1512	M22 x 1.5	L15	M18 x 1.5	L12
8400L-15	M22 x 1.5	L15	M22 x 1.5	L15
8400L-18	M26 x 1.5	L18	M26 x 1.5	L18
8400L-22	M30 x 2.0	L22	M30 x 2.0	L22
8400L-28	M36 x 2.0	L28	M36 x 2.0	L28
8400L-35	M42 x 2.0	L35	M42 x 2.0	L35
8400L-42	M52 x 2.0	L42	M52 x 2.0	L42
8400S-06	M14 x 1.5	S6	M14 x 1.5	S6
8400S-08	M16 x 1.5	S8	M16 x 1.5	S8
8400S-10	M18 x 1.5	S10	M18 x 1.5	S10
8400S-12	M20 x 1.5	S12	M20 x 1.5	S12
8400S-14	M22 x 1.5	S14	M22 x 1.5	S14
8400S-1612	M24 x 1.5	S16	M20 x 1.5	S12
8400S-16	M24 x 1.5	S16	M24 x 1.5	S16
8400S-20	M30 x 2.0	S20	M30 x 2.0	S20
8400S-25	M36 x 2.0	S25	M36 x 2.0	S25
8400S-30	M42 x 2.0	S30	M42 x 2.0	S30
8400S-38	M52 x 2.0	S36	M52 x 2.0	S38

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 8407L/S MC - MC Bulkhead (TN102)



## 8410LL/L/S MC - MC - MC Tee (TN100)

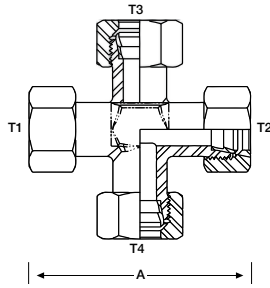


Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8407L-06	M12 x 1.5	L6	M12 x 1.5	L6
8407L-08	M14 x 1.5	L8	M14 x 1.5	L8
8407L-10	M16 x 1.5	L10	M16 x 1.5	L10
8407L-12	M18 x 1.5	L12	M18 x 1.5	L12
8407L-15	M22 x 1.5	L15	M22 x 1.5	L15
8407L-18	M26 x 1.5	L18	M26 x 1.5	L18
8407L-22	M30 x 2.0	L22	M30 x 2.0	L22
8407L-28	M36 x 2.0	L28	M36 x 2.0	L28
8407L-35	M42 x 2.0	L35	M42 x 2.0	L35
8407L-42	M52 x 2.0	L42	M52 x 2.0	L42
8407S-06	M14 x 1.5	S6	M14 x 1.5	S6
8407S-08	M16 x 1.5	S8	M16 x 1.5	S8
8407S-10	M18 x 1.5	S10	M18 x 1.5	S10
8407S-12	M20 x 1.5	S12	M20 x 1.5	S12
8407S-14	M22 x 1.5	S14	M22 x 1.5	S14
8407S-16	M24 x 1.5	S16	M24 x 1.5	S16
8407S-20	M30 x 2.0	S20	M30 x 2.0	S20
8407S-25	M36 x 2.0	S25	M36 x 2.0	S25
8407S-30	M42 x 2.0	S30	M42 x 2.0	S30
8407S-38	M52 x 2.0	S36	M52 x 2.0	S38

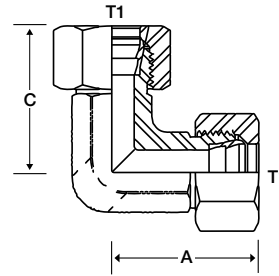
Part Number	T1 / T2		T3	
	Thread	Tube	Thread	Tube
8410LL-04	M8 x 1.0	LL4	M8 x 1.0	LL4
8410LL-06	M10 x 1.0	LL6	M10 x 1.0	LL6
8410LL-08	M12 x 1.0	LL8	M12 x 1.0	LL8
8410L-06	M12 x 1.5	L6	M12 x 1.5	L6
8410L-08	M14 x 1.5	L8	M14 x 1.5	L8
8410L-10	M16 x 1.5	L10	M16 x 1.5	L10
8410L-12	M18 x 1.5	L12	M18 x 1.5	L12
8410L-15	M22 x 1.5	L15	M22 x 1.5	L15
8410L-18	M26 x 1.5	L18	M26 x 1.5	L18
8410L-22	M30 x 2.0	L22	M30 x 2.0	L22
8410L-28	M36 x 2.0	L28	M36 x 2.0	L28
8410L-35	M42 x 2.0	L35	M42 x 2.0	L35
8410L-42	M52 x 2.0	L42	M52 x 2.0	L42
8410S-06	M14 x 1.5	S6	M14 x 1.5	S6
8410S-08	M16 x 1.5	S8	M16 x 1.5	S8
8410S-10	M18 x 1.5	S10	M18 x 1.5	S10
8410S-12	M20 x 1.5	S12	M20 x 1.5	S12
8410S-14	M22 x 1.5	S14	M22 x 1.5	S14
8410S-16	M24 x 1.5	S16	M24 x 1.5	S16
8410S-20	M30 x 2.0	S20	M30 x 2.0	S20
8410S-25	M36 x 2.0	S25	M36 x 2.0	S25
8410S-30	M42 x 2.0	S30	M42 x 2.0	S30
8410S-38	M52 x 2.0	S38	M52 x 2.0	S38

# Metric Compression

## 8460LL/L/S MC - MC - MC - MC Cross



## 8490LL/L/S MC - MC 90° (TN99)



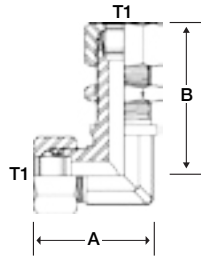
Part Number	T1 / T2		T3 / T4	
	Thread	Tube	Thread	Tube
8460LL-04	M8 x 1.0	LL4	M8 x 1.0	LL4
8460LL-06	M10 x 1.0	LL6	M10 x 1.0	LL6
8460LL-08	M12 x 1.0	LL8	M12 x 1.0	LL8
8460L-06	M12 x 1.5	L6	M12 x 1.5	L6
8460L-08	M14 x 1.5	L8	M14 x 1.5	L8
8460L-10	M16 x 1.5	L10	M16 x 1.5	L10
8460L-12	M18 x 1.5	L12	M18 x 1.5	L12
8460L-15	M22 x 1.5	L15	M22 x 1.5	L15
8460L-18	M26 x 1.5	L18	M26 x 1.5	L18
8460L-22	M30 x 2.0	L22	M30 x 2.0	L22
8460L-28	M36 x 2.0	L28	M36 x 2.0	L28
8460L-35	M42 x 2.0	L35	M42 x 2.0	L35
8460L-42	M52 x 2.0	L42	M52 x 2.0	L42
8460S-06	M14 x 1.5	S6	M14 x 1.5	S6
8460S-08	M16 x 1.5	S8	M16 x 1.5	S8
8460S-10	M18 x 1.5	S10	M18 x 1.5	S10
8460S-12	M20 x 1.5	S12	M20 x 1.5	S12
8460S-14	M22 x 1.5	S14	M22 x 1.5	S14
8460S-16	M24 x 1.5	S16	M24 x 1.5	S16
8460S-20	M30 x 2.0	S20	M30 x 2.0	S20
8460S-25	M36 x 2.0	S25	M36 x 2.0	S25
8460S-30	M42 x 2.0	S30	M42 x 2.0	S30
8460S-38	M52 x 2.0	S38	M52 x 2.0	S38

Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8490LL-04	M8 x 1.0	LL4	M8 x 1.0	LL4
8490LL-06	M10 x 1.0	LL6	M10 x 1.0	LL6
8490LL-08	M12 x 1.0	LL8	M12 x 1.0	LL8
8490L-06	M12 x 1.5	L6	M12 x 1.5	L6
8490L-08	M14 x 1.5	L8	M14 x 1.5	L8
8490L-10	M16 x 1.5	L10	M16 x 1.5	L10
8490L-12	M18 x 1.5	L12	M18 x 1.5	L12
8490L-15	M22 x 1.5	L15	M22 x 1.5	L15
8490L-18	M26 x 1.5	L18	M26 x 1.5	L18
8490L-22	M30 x 2.0	L22	M30 x 2.0	L22
8490L-28	M36 x 2.0	L28	M36 x 2.0	L28
8490L-35	M42 x 2.0	L35	M42 x 2.0	L35
8490L-42	M52 x 2.0	L42	M52 x 2.0	L42
8490S-06	M14 x 1.5	S6	M14 x 1.5	S6
8490S-08	M16 x 1.5	S8	M16 x 1.5	S8
8490S-10	M18 x 1.5	S10	M18 x 1.5	S10
8490S-12	M20 x 1.5	S12	M20 x 1.5	S12
8490S-14	M22 x 1.5	S14	M22 x 1.5	S14
8490S-16	M24 x 1.5	S16	M24 x 1.5	S16
8490S-20	M30 x 2.0	S20	M30 x 2.0	S20
8490S-25	M36 x 2.0	S25	M36 x 2.0	S25
8490S-30	M42 x 2.0	S30	M42 x 2.0	S30
8490S-38	M52 x 2.0	S36	M52 x 2.0	S38

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## 8497L/S MC - MC Bulkhead 90°



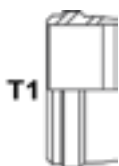
Part Number	T1		T2	
	Thread	Tube	Thread	Tube
8497L-0612	M12 x 1.5	L6	M12 x 1.5	L6
8497L-0814	M14 x 1.5	L8	M14 x 1.5	L8
8497L-1016	M16 x 1.5	L10	M16 x 1.5	L10
8497L-1218	M18 x 1.5	L12	M18 x 1.5	L12
8497L-1522	M22 x 1.5	L15	M22 x 1.5	L15
8497L-1826	M26 x 1.5	L18	M26 x 1.5	L18
8497L-2230	M30 x 2.0	L22	M30 x 2.0	L22
8497L-2836	M36 x 2.0	L28	M36 x 2.0	L28
8497L-3545	M42 x 2.0	L35	M42 x 2.0	L35
8497L-4252	M52 x 2.0	L42	M52 x 2.0	L42
8497S-0612	M14 x 1.5	S6	M14 x 1.5	S6
8497S-0814	M16 x 1.5	S8	M16 x 1.5	S8
8497S-1016	M18 x 1.5	S10	M18 x 1.5	S10
8497S-1218	M20 x 1.5	S12	M20 x 1.5	S12
8497S-1522	M22 x 1.5	S14	M22 x 1.5	S14
8497S-1826	M24 x 1.5	S16	M24 x 1.5	S16
8497S-2230	M30 x 2.0	S20	M30 x 2.0	S20
8497S-2836	M36 x 2.0	S25	M36 x 2.0	S25
8497S-3545	M42 x 2.0	S30	M42 x 2.0	S30
8497S-4252	M52 x 2.0	S38	M52 x 2.0	S38

## 8500LL/L/S Metric Tube Nut (TN81)



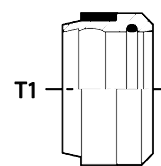
Part Number	T1	
	Metric	Tube
8500LL-04	M8 x 1.0	LL4
8500LL-06	M10 x 1.0	LL6
8500LL-08	M12 x 1.0	LL8
8500L-06	M12 x 1.5	L6
8500L-08	M14 x 1.5	L8
8500L-10	M16 x 1.5	L10
8500L-12	M18 x 1.5	L12
8500L-15	M22 x 1.5	L15
8500L-18	M26 x 1.5	L18
8500L-22	M30 x 2.0	L22
8500L-28	M36 x 2.0	L28
8500L-35	M42 x 2.0	L35
8500L-42	M52 x 2.0	L42
8500S-06	M14 x 1.5	S6
8500S-08	M16 x 1.5	S8
8500S-10	M18 x 1.5	S10
8500S-12	M20 x 1.5	S12
8500S-14	M22 x 1.5	S14
8500S-16	M24 x 1.5	S16
8500S-20	M30 x 2.0	S20
8500S-25	M36 x 2.0	S25
8500S-30	M42 x 2.0	S30
8500S-38	M52 x 2.0	S38

## 8600LL/L/LS/S Cutting Ring (TN88)



Part Number	Tube
8600LL-04	LL4
8600LL-06	LL6
8600LL-08	LL8
8600L-15	L15
8600L-18	L18
8600L-22	L22
8600L-28	L28
8600L-35	L35
8600LS-06	L6 - S6
8600LS-08	L8 - S8
8600LS-10	L10 - S10
8600LS-12	L12 - S12
8600S-14	S14
8600S-16	S16
8600S-20	S20
8600S-25	S25
8600S-30	S30
8600S-38	S38

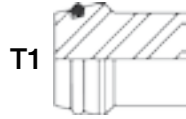
## 8600LR/LSR/SR Cutting Ring - Elastomer



Part Number	Tube
8600LR-15	L6 - S6
8600LR-18	L8 - S8
8600LR-22	L10 - S10
8600LR-28	L12 - S12
8600LR-35	
8600LR-42	L15
	L18
8600LSR-06	L22
8600LSR-08	L28
8600LSR-10	L35
8600LSR-12	L42
8600SR-14	S14
8600SR-16	S16
8600SR-20	S20
8600SR-25	S25
8600SR-30	S30
8600SR-38	S38

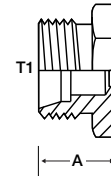
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## 8700L/LS/S Plug (Use with 8500) (TN188)



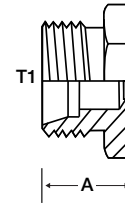
Part Number	T1
	Tube
8700L-15	L15
8700L-18	L18
8700L-22	L22
8700L-28	L28
8700L-35	L35
8700L-42	L42
8700LS-06	L6 - S6
8700LS-08	L8 - S8
8700LS-10	L10 - S10
8700LS-12	L12 - S12
8700S-14	S14
8700S-16	S16
8700S-20	S20
8700S-25	S25
8700S-30	S30
8700S-38	S38

## 9610 Metric Plug Light



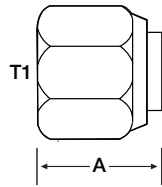
Part Number	T1	
	Light	Tube
9610-12	M12 x 1.5	L6
9610-14	M14 x 1.5	L8
9610-16	M16 x 1.5	L10
9610-18	M18 x 1.5	L12
9610-22	M22 x 1.5	L15
9610-26	M26 x 1.5	L18
9610-30	M30 x 2.0	L22
9610-36	M36 x 2.0	L28
9610-42	M42 x 2.0	L35
9610-52	M52 x 2.0	L42

## 9611 Metric Plug Heavy



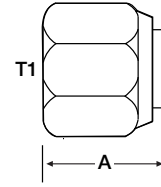
Part Number	T1	
	Heavy	Tube
9611-14	M14 x 1.5	S6
9611-16	M16 x 1.5	S8
9611-18	M18 x 1.5	S10
9611-20	M20 x 1.5	S12
9611-22	M22 x 1.5	S14
9611-24	M24 x 1.5	S16
9611-30	M30 x 2.0	S20
9611-36	M36 x 2.0	S25
9611-42	M42 x 2.0	S30
9611-52	M52 x 2.0	S38

## 9620 Metric Cap Light



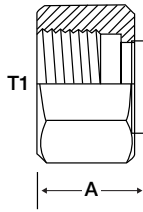
Part Number	T1	
	Light	Tube
9620-12	M12 x 1.5	L6
9620-14	M14 x 1.5	L8
9620-16	M16 x 1.5	L10
9620-18	M18 x 1.5	L12
9620-22	M22 x 1.5	L15
9620-26	M26 x 1.5	L18
9620-30	M30 x 2.0	L22
9620-36	M36 x 2.0	L28
9620-42	M42 x 2.0	L35
9620-52	M52 x 2.0	L42

## 9621 Metric Cap Heavy



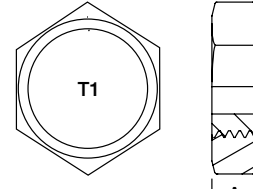
Part Number	T1	
	Heavy	Tube
9621-14	M14 x 1.5	S6
9621-16	M16 x 1.5	S8
9621-18	M18 x 1.5	S10
9621-20	M20 x 1.5	S12
9621-22	M22 x 1.5	S14
9621-24	M24 x 1.5	S16
9621-30	M30 x 2.0	S20
9621-36	M36 x 2.0	S25
9621-42	M42 x 2.0	S30
9621-52	M52 x 2.0	S38

## C0304 Flareless Cap



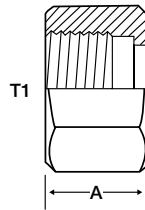
Part Number	T1
C0304-02	1/8
C0304-04	1/4
C0304-06	3/8
C0304-08	1/2
C0304-10	5/8
C0304-12	3/4
C0304-16	1
C0304-20	1 1/4

## C0306 Flareless Locknut



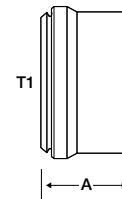
Part Number	T1
C0306-04	1/4
C0306-06	3/8
C0306-08	1/2
C0306-10	5/8
C0306-12	3/4
C0306-16	1
C0306-20	1 1/4

## C0318 Flareless Nut



Part Number	T1
C0318-02	1/8
C0318-03	3/16
C0318-04	1/4
C0318-05	5/16
C0318-06	3/8
C0318-08	1/2
C0318-10	5/8
C0318-12	3/4
C0318-16	1
C0318-20	1 1/4
C0318-24	1 1/2
C0318-32	2

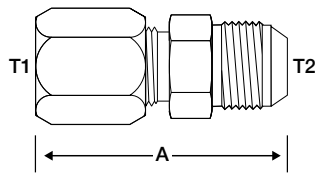
## C0319 Flareless Sleeve



Part Number	T1
C0319-02	1/8
C0319-03	3/16
C0319-04	1/4
C0319-05	5/16
C0319-06	3/8
C0319-08	1/2
C0319-10	5/8
C0319-12	3/4
C0319-16	1
C0319-20	1 1/4
C0319-24	1 1/2
C0319-32	2

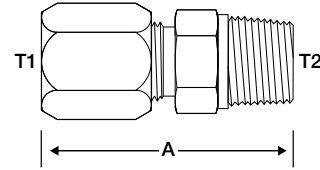
# Flareless Compression

## C2402 FC - MJ



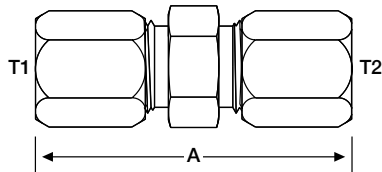
Part Number	T1	T2
	FC	MJ
C2402-0404	1/4	7/16 - 20
C2402-0606	3/8	9/16 - 18
C2402-0808	1/2	3/4 - 16
C2402-1010	5/8	7/8 - 14
C2402-1212	3/4	1 1/16 - 12
C2402-1616	1	1 5/16 - 12
C2402-2020	1 1/4	1 5/8 - 12

## C2404 FC - MP



Part Number	T1	T2
	FC	MNPT
C2404-0202	1/8	1/8 - 27
C2404-0204	1/8	1/4 - 18
C2404-0302	3/16	1/8 - 27
C2404-0402	1/4	1/8 - 27
C2404-0404	1/4	1/4 - 18
C2404-0406	1/4	3/8 - 18
C2404-0408	1/4	1/2 - 14
C2404-0502	5/16	1/8 - 27
C2404-0504	5/16	1/4 - 18
C2404-0602	3/8	1/4 - 18
C2404-0604	3/8	1/8 - 27
C2404-0606	3/8	3/8 - 18
C2404-0608	3/8	1/2 - 14
C2404-0804	1/2	3/8 - 18
C2404-0806	1/2	1/4 - 18
C2404-0808	1/2	1/2 - 14
C2404-0812	1/2	3/4 - 14
C2404-1006	5/8	1/2 - 14
C2404-1008	5/8	3/8 - 18
C2404-1208	3/4	3/4 - 14
C2404-1212	3/4	1/2 - 14
C2404-1412	7/8	3/4 - 14
C2404-1612	1	1 - 11 1/2
C2404-1616	1	3/4 - 14
C2404-2020	1 1/4	1 1/4 - 11 1/2
C2404-2424	1 1/2	1 1/2 - 11 1/2
C2404-3232	2	2 - 11 1/2

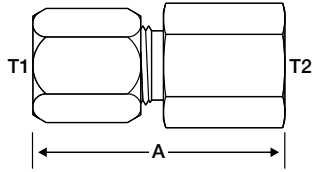
## C2403 FC - FC



Part Number	T1	T2
	FC	FC
C2403-0202	1/8	1/8
C2403-0303	3/16	3/16
C2403-0404	1/4	1/4
C2403-0505	5/16	5/16
C2403-0604	3/8	1/4
C2403-0606	3/8	3/8
C2403-0808	1/2	1/2
C2403-1010	5/8	5/8
C2403-1212	3/4	3/4
C2403-1414	7/8	7/8
C2403-1616	1	1
C2403-2020	1 1/4	1 1/4
C2403-2424	1 1/2	1 1/2
C2403-3232	2	2

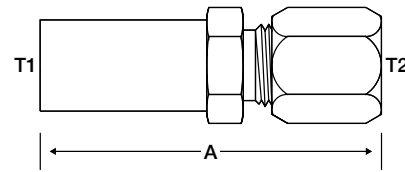
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## C2405 FC - FP



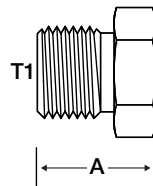
Part Number	T1	T2
	FC	FNPT
C2405-0202	1/8	1/8 - 27
C2405-0402	1/4	1/8 - 27
C2405-0404	1/4	1/4 - 18
C2405-0502	5/16	1/8 - 27
C2405-0604	3/8	1/4 - 18
C2405-0606	3/8	3/8 - 18
C2405-0806	1/2	3/8 - 18
C2405-0804	1/2	1/4 - 18
C2405-0808	1/2	1/2 - 14
C2405-1008	5/8	1/2 - 14
C2405-1212	3/4	3/4 - 14
C2405-1616	1	1 - 11 1/2
C2405-2020	1 1/4	1 1/4 - 11 1/2

## C2406 Stand Pipe - FC



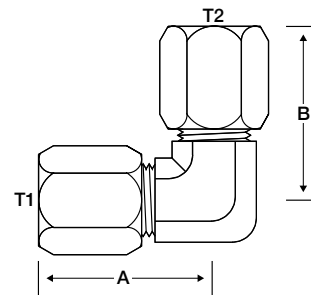
Part Number	T1	T2
	SP	FC
C2406-0604	3/8	1/4
C2406-0804	1/2	1/4
C2406-0806	1/2	3/8
C2406-1008	5/8	1/2
C2406-1208	3/4	1/2
C2406-1612	1	3/4
C2406-2016	1 1/4	1

## C2408 Flareless - Plug



Part Number	T1
	FC
C2408-02	1/8
C2408-04	1/4
C2408-05	5/16
C2408-06	3/8
C2408-08	1/2
C2408-10	5/8
C2408-12	3/4
C2408-16	1

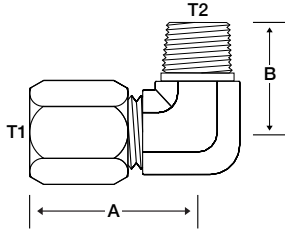
## C2500 FC - FC 90°



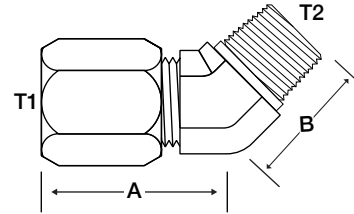
Part Number	T1	T2
	FC	FC
C2500-0404	1/4	1/4
C2500-0505	5/16	5/16
C2500-0606	3/8	3/8
C2500-0808	1/2	1/2
C2500-1010	5/8	5/8
C2500-1212	3/4	3/4
C2500-1616	1	1
C2500-2020	1 1/4	1 1/4
C2500-2424	1 1/2	1 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## C2501 FC - MP 90°



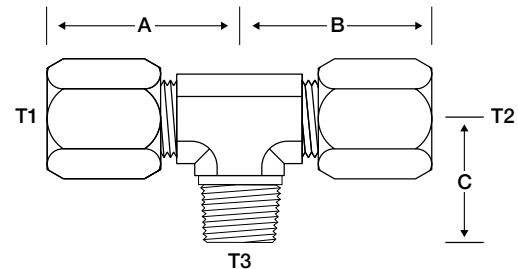
## C2503 FC - MP 45°



Part Number	T1	T2
	FC	MNPT
C2501-0202	1/8	1/8 - 27
C2501-0302	3/16	1/8 - 27
C2501-0402	1/4	1/8 - 27
C2501-0404	1/4	1/4 - 18
C2501-0502	5/16	1/8 - 27
C2501-0504	5/16	1/4 - 18
C2501-0602	3/8	1/4 - 18
C2501-0604	3/8	1/8 - 27
C2501-0606	3/8	3/8 - 18
C2501-0608	3/8	1/2 - 14
C2501-0806	1/2	3/8 - 18
C2501-0804	1/2	1/4 - 18
C2501-0808	1/2	1/2 - 14
C2501-1008	5/8	1/2 - 14
C2501-1006	5/8	3/8 - 18
C2501-1212	3/4	3/4 - 14
C2501-1208	3/4	1/2 - 14
C2501-1412	7/8	3/4 - 14
C2501-1616	1	1 - 11 1/2
C2501-1612	1	3/4 - 14
C2501-2020	1 1/4	1 1/4 - 11 1/2
C2501-2424	1 1/2	1 1/2 - 11 1/2
C2501-3232	2	2 - 11 1/2

Part Number	T1	T2
	FC	MNPT
C2503-0402	1/4	1/8 - 27
C2503-0404	1/4	1/4 - 18
C2503-0502	5/16	1/8 - 27
C2503-0604	3/8	1/4 - 18
C2503-0806	1/2	3/8 - 18
C2503-0808	1/2	1/2 - 14
C2503-1008	5/8	1/2 - 14
C2503-1212	3/4	3/4 - 14
C2503-1616	1	1 - 11 1/2

## C2601 FC - FC - MP Tee

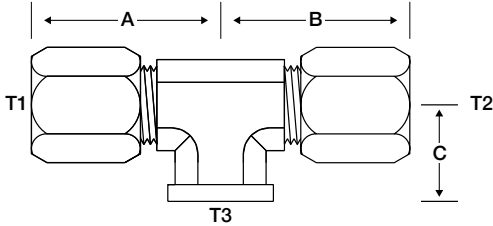


Part Number	T1 / T2	T3
	FC	MNPT
C2601-040402	1/4	1/8 - 27
C2601-040404	1/4	1/4 - 18
C2601-050502	5/16	1/8 - 27
C2601-060604	3/8	1/4 - 18
C2601-080806	1/2	3/8 - 18
C2601-080808	1/2	1/2 - 14
C2601-101008	5/8	1/2 - 14
C2601-121212	3/4	3/4 - 14
C2601-161616	1	1 - 11 1/2

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

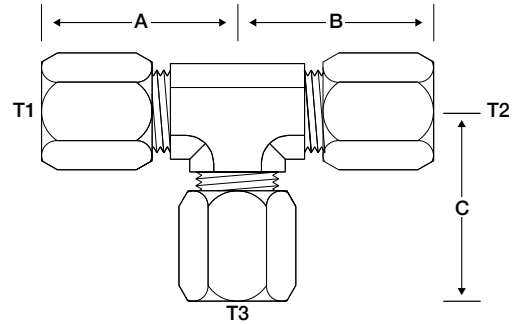


## C2602 FC - FC - FP Tee



Part Number	T1 / T2	T3
	FC	FNPT
C2602-040402	1/4	1/8 - 27
C2602-040404	1/4	1/4 - 18
C2602-060604	3/8	1/4 - 18
C2602-080806	1/2	3/8 - 18
C2602-080808	1/2	3/4 - 16
C2602-101008	5/8	1/2 - 14
C2602-121212	3/4	3/4 - 14
C2602-161616	1	1 - 11 1/2
C2602-202020	1 1/4	1 1/4 - 11 1/2

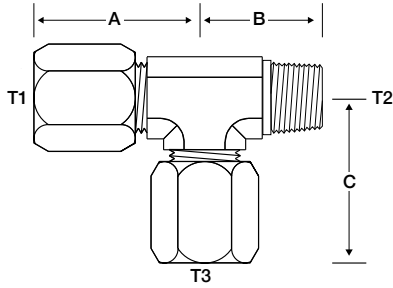
## C2603 FC - FC - FC Tee



Part Number	T1 / T2	T3
	FC	FC
C2603-040404	1/4	1/4
C2603-050505	5/16	5/16
C2603-060606	3/8	3/8
C2603-080806	1/2	1/2
C2603-080808	1/2	1/2
C2603-101010	5/8	5/8
C2603-121212	3/4	3/4
C2603-161616	1	1
C2603-202020	1 1/4	1 1/4

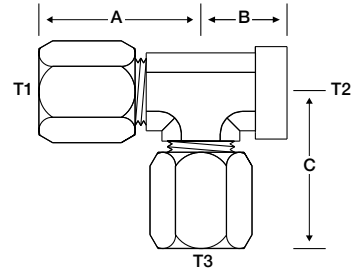
# Flareless Compression

## C2605 FC - MP - FC Tee



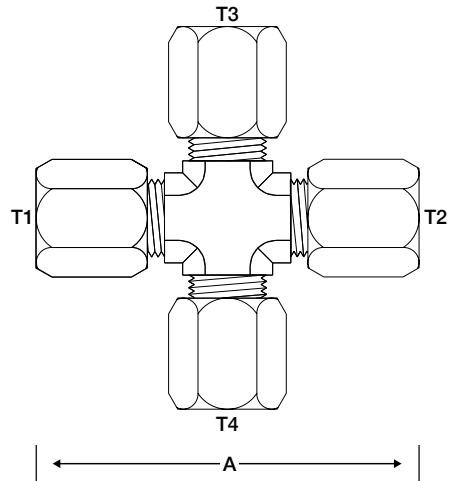
Part Number	T1 / T3	T2
	FC	MNPT
C2605-040404	1/4	1/4 - 18
C2605-050205	5/16	1/8 - 27
C2605-060406	3/8	1/4 - 18
C2605-060606	3/8	3/8 - 18
C2605-080608	1/2	3/8 - 18
C2605-080808	1/2	1/2 - 14
C2605-100810	5/8	1/2 - 14
C2605-121212	3/4	3/4 - 14
C2605-161616	1	1 - 11 1/2

## C2606 FC - FP - FC Tee



Part Number	T1 / T3	T2
	FC	FNPT
C2606-040404	1/4	1/4 - 18
C2606-060406	3/8	1/4 - 18
C2606-080608	1/2	3/8 - 18
C2606-100810	5/8	1/2 - 14
C2606-121212	3/4	3/4 - 14
C2606-141214	7/8	3/4 - 14

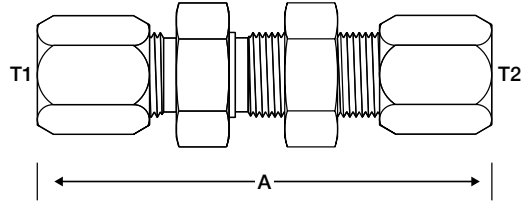
## C2650 FC - FC - FC - FC Cross



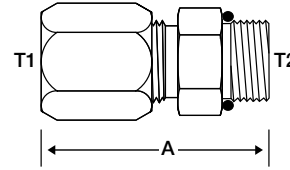
Part Number	T1 / T2	T3 / T4
	FC	FC
C2650-04040404	1/4	1/4
C2650-06060606	3/8	3/8
C2650-08080808	1/2	1/2
C2650-10101010	5/8	5/8
C2650-12121212	3/4	3/4

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## C2700 FC - FC Bulkhead



## C6400 FC - MORB

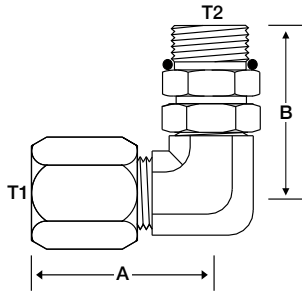


Part Number	T1	T2
	FC	FC
C2700-0404	1/4	1/4
C2700-0606	3/8	3/8
C2700-0808	1/2	1/2
C2700-1010	5/8	5/8
C2700-1212	3/4	3/4
C2700-1616	1	1

Part Number	T1	T2
	FC	MORB
C6400-0404	1/4	7/16 - 20
C6400-0405	1/4	1/2 - 20
C6400-0406	1/4	9/16 - 18
C6400-0505	5/16	1/2 - 20
C6400-0606	3/8	9/16 - 18
C6400-0608	3/8	3/4 - 16
C6400-0806	1/2	9/16 - 18
C6400-0808	1/2	3/4 - 16
C6400-0810	1/2	7/8 - 14
C6400-0812	1/2	1 1/16 - 12
C6400-1010	5/8	7/8 - 14
C6400-1212	3/4	1 1/16 - 12
C6400-1216	3/4	1 5/16 - 12
C6400-1612	1	1 1/16 - 12
C6400-1616	1	1 5/16 - 12
C6400-2020	1 1/4	1 5/8 - 12
C6400-2424	1 1/2	1 7/8 - 12
C6400-3232	2	2 1/2 - 12

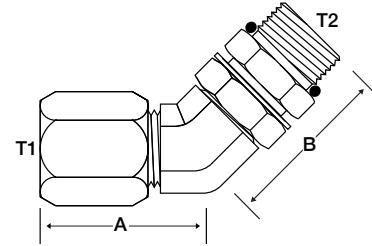
# Flareless Compression

## C6801 FC - MAORB 90°



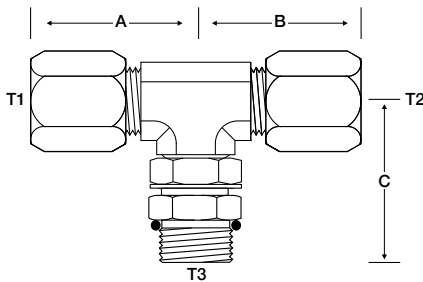
Part Number	T1	T2
	FC	MORB
C6801-0404	1/4	7/16 - 20
C6801-0505	5/16	1/2 - 20
C6801-0606	3/8	9/16 - 18
C6801-0608	3/8	3/4 - 16
C6801-0806	1/2	9/16 - 18
C6801-0808	1/2	3/4 - 16
C6801-0810	1/2	7/8 - 14
C6801-0812	1/2	1 1/16 - 12
C6801-1010	5/8	7/8 - 14
C6801-1208	3/4	3/4 - 16
C6801-1212	3/4	1 1/16 - 12
C6801-1616	1	1 5/16 - 12
C6801-2020	1 1/4	1 5/8 - 12

## C6802 FC - MAORB 45°



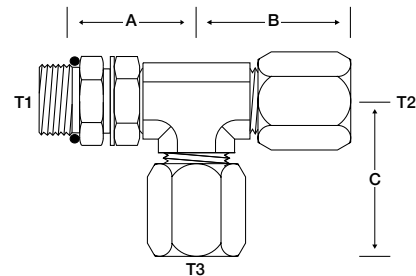
Part Number	T1	T2
	FC	MORB
C6802-0404	1/4	9/16 - 18
C6802-0606	3/8	3/4 - 16
C6802-0808	1/2	3/4 - 16
C6802-1212	3/4	1 1/16 - 12
C6802-1616	1	1 5/16 - 12

## C6803 FC - FC MAORB Tee



Part Number	T1	T2	T3
			MORB
C6803-040404	1/4	1/4	7/16 - 20
C6803-060606	3/8	3/8	9/16 - 18
C6803-080808	1/2	1/2	3/4 - 16

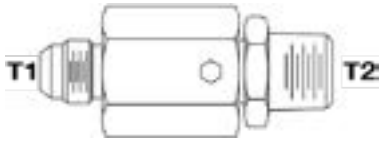
## C6804 MAORB - FC - FC Tee



Part Number	T1	T2 / T3
	MORB	FC
C6804-04	7/16 - 20	1/4
C6804-06	9/16 - 18	3/8
C6804-08	3/4 - 16	1/2

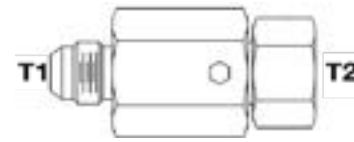
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## MJ-MPX



Part Number	Crossover	WP PSI	T1	T2
			MJIC	MNPT
			Fixed	Swivel
S6J6-P6	LS-2404-0606	3,000	-6	¼
S6J8-P6	LS-2404-0806	3,000	-8	⅜
S8J10-P8	LS-2404-1008	3,000	-10	½
S8J12-P12	LS-2404-1212	3,000	-12	¾
S16J16-P16	LS-2404-1616	3,000	-16	1
S20J20-P20	LS-2404-2020	3,000	-20	1¼
S24J24-P24	LS-2404-2424	3,000	-24	1½
S32J32-P32	LS-2404-3232	3,000	-32	2

## MJ-FPX



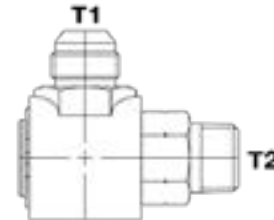
Part Number	Crossover	WP PSI	T1	T2
			MJIC	FNPT
			Fixed	Swivel
S6J6-PF4	LS-2405-0604	3,000	-6	¼
S6J6-PF6	LS-2405-0606	3,000	-8	⅜
S8J10-PF8	LS-2405-1008	3,000	-10	½
S8J12-PF12	LS-2405-1212	3,000	-12	¾
S16J16-PF16	LS-2405-1616	3,000	-16	1
S20J20-PF20	LS-2405-2020	3,000	-20	1¼
S24J24-PF24	LS-2405-2424	3,000	-24	1½
S32J32-PF32	LS-2405-3232	3,000	-32	2

## MJ-MJX



Part Number	Crossover	WP PSI	T1	T2
			MJIC	MJIC
			Fixed	Swivel
S6J6-J6	LS-2403-0606	3,000	-6	-6
S6J8-J8	LS-2403-0808	3,000	-8	-8
S8J10-J10	LS-2403-1010	3,000	-10	-10
S8J12-J12	LS-2403-1212	3,000	-12	-12
S16J16-J16	LS-2403-1616	3,000	-16	-16
S20J20-J20	LS-2403-2020	3,000	-20	-20
S24J24-J24	LS-2403-2424	3,000	-24	-24
S32J32-J32	LS-2403-3232	3,000	-32	-32

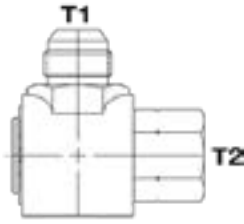
## MJ-MPX 90°



Part Number	Crossover	WP PSI	T1	T2
			MJIC	MNPT
			Fixed	Swivel
9S6J6-P4	LS-2501-0604	8,000	-6	¼
9S6J6-P6	LS-2501-0606	8,000	-6	⅜
9S6J8-P6	LS-2501-0806	8,000	-8	⅜
9S8J8-P8	LS-2501-0808	8,000	-8	½
9S8J10-P8	LS-2501-1008	8,000	-10	½
9S12J12-P12	LS-2501-1212	8,000	-12	¾
9S16J16-P16	LS-2501-1616	8,000	-16	1
9S20J20-P20	LS-2501-2020	4,000	-20	1¼
9S24J24-P24	LS-2501-2424	4,000	-24	1½
9S32J32-P32	LS-2501-3232	2,000	-32	2

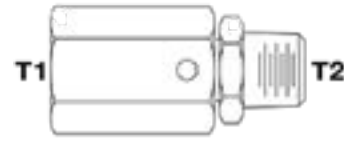
BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## MJ-FPX 90°



Part Number	Crossover	WP	T1	T2
			MJIC	FNPT
		PSI	Fixed	Swivel
9S6J6-PF4	LS-2502-0604	5,000	-6	¼
9S6J6-PF6	LS-2502-0606	5,000	-6	⅜
9S6J8-PF6	LS-2502-0806	5,000	-8	⅜
9S8J8-PF8	LS-2502-0808	5,000	-8	½
9S8J10-PF8	LS-2502-1008	5,000	-10	½
9S12J12-PF12	LS-2502-1212	5,000	-12	¾
9S16J16-PF16	LS-2502-1616	5,000	-16	1
9S20J20-PF20	LS-2502-2020	4,000	-20	1¼
9S24J24-PF24	LS-2502-2424	4,000	-24	1½
9S32J32-PF32	LS-2502-3232	3,000	-32	2

## FP-MPX



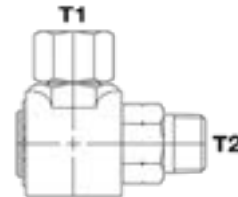
Part Number	Crossover	WP	T1	T2
			FNPT	MNPT
		PSI	Fixed	Swivel
S6PF4-P4	LS-5405-0404	3,000	¼	¼
S6PF6-P6	LS-5405-0606	3,000	⅜	⅜
S8PF8-P8	LS-5405-0808	3,000	½	½
S8PF12-P12	LS-5405-1212	3,000	¾	¾
S16PF16-P16	LS-5405-1616	3,000	1	1
S20PF20-P20	LS-5405-2020	3,000	1¼	1¼
S24PF24-P24	LS-5405-2424	3,000	1½	1½
S32PF32-P32	LS-5405-3232	3,000	2	2

## FP-FPX



Part Number	Crossover	WP	T1	T2
			FNPT	FNPT
		PSI	Fixed	Swivel
S6PF4-PF4	LS-5000-0404	3,000	¼	¼
S6PF6-PF6	LS-5000-0606	3,000	⅜	⅜
S8PF8-PF8	LS-5000-0808	3,000	½	½
S8PF12-PF12	LS-5000-1212	3,000	¾	¾
S16PF16-PF16	LS-5000-1616	3,000	1	1
S20PF20-PF20	LS-5000-2020	3,000	1¼	1¼
S24PF24-PF24	LS-5000-2424	3,000	1½	1½
S32PF32-PF32	LS-5000-3232	3,000	2	2

## FPX-MPX 90°



Part Number	Crossover	WP	T1	T2
			FNPSM	MNPT
		PSI	Fixed	Swivel
9S6PU4-P4	LS-5502-0404	3,000	¼	¼
9S6PU6-P6	LS-5502-0606	3,000	⅜	⅜
9S8PU8-P8	LS-5502-0808	3,000	½	½
9S12PU12-P12	LS-5502-1212	3,000	¾	¾
9S16PU16-P16	LS-5502-1616	3,000	1	1
9S20PU20-P20	LS-5502-2020	3,000	1¼	1¼
9S24PU24-P24	LS-5502-2424	3,000	1½	1½
9S32PU32-P32	LS-5502-3232	3,000	2	2

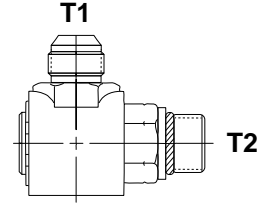
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## MJ-FJX



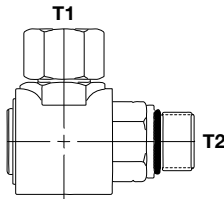
Part Number	Crossover	WP	T1	T2
			MJIC	FJIC
		PSI	Fixed	Swivel
S6J6-JF6	LS-2406-0606	3,000	-6	-6
S6J8-JF8	LS-2406-0808	3,000	-8	-8
S8J10-JF10	LS-2406-1010	3,000	-10	-10
S8J12-JF12	LS-2406-1212	3,000	-12	-12
S16J16-JF16	LS-2406-1616	3,000	-16	-16
S20J20-JF20	LS-2406-2020	3,000	-20	-20
S24J24-JF24	LS-2406-2424	3,000	-24	-24
S32J32-JF32	LS-2406-3232	3,000	-32	-32

## MJ-MORBX



Part Number	Crossover	WP	T1	T2
			MJIC	MORBX
		PSI	Fixed	Swivel
9S6J6-06	LS-6801-0606	5,000	-6	-6
9S6J6-08	LS-6801-0608	5,000	-6	-6
9S6J8-08	LS-6801-0808	5,000	-8	-8
9S8J10-010	LS-6801-1010	5,000	-10	-10
9S12J12-012	LS-6801-1212	5,000	-12	-12
9S16J16-016	LS-6801-1616	5,000	-16	-16
9S20J20-020	LS-6801-2020	4,000	-20	-20
9S24J24-024	LS-6801-2424	4,000	-24	-24
9S32J32-032	LS-6801-3232	3,000	-32	-32

## MORBX-FPX 90°



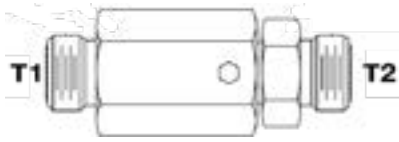
Part Number	Crossover	WP	T1	T2
			FNPSM	MORBX
		PSI	Swivel	Swivel
9S6PU4-06	LS-6901-0406	5,000	¼	-6
9S6PU6-06	LS-6901-0606	5,000	⅜	-6
9S6PU8-08	LS-6901-0608	5,000	½	-8
9S8PU8-010	LS-6901-0810	5,000	½	-10
9S12PU12-012	LS-6901-1212	5,000	¾	-12
9S16PU16-016	LS-6901-1616	5,000	1	-16
9S20PU20-020	LS-6901-2020	4,000	1¼	-20
9S24PU24-024	LS-6901-2424	4,000	1½	-24
9S32PU32-032	LS-6901-3232	3,000	2	-32

## Seal Kits

Straight	90° Elbow
S6-1	9S6-1
S8-1	9S8-1
--	9S12-1
S16-1	9S16-1
S20-1	9S20-1
S24-1	9S24-1
S32-1	9S32-1

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## MF-MFX



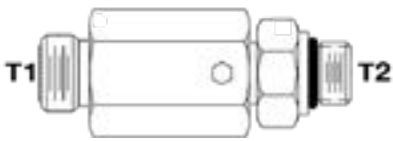
Part Number	Crossover	WP	T1	T2
			MORFS	MORFS
		PSI	Fixed	Swivel
S6F6-F6	LS-FS2403-0606	3,000	-6	-6
S6F8-F8	LS-FS2403-0808	3,000	-8	-8
S8F10-F10	LS-FS2403-1010	3,000	-10	-10
S8F12-F12	LS-FS2403-1212	3,000	-12	-12
S16F16-F16	LS-FS2403-1616	3,000	-16	-16
S20F20-F20	LS-FS2403-2020	3,000	-20	-20
S24F24-F24	LS-FS2403-2424	3,000	-24	-24

## MF-FFX



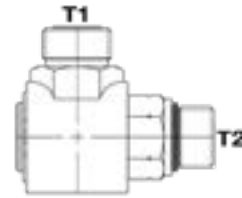
Part Number	Crossover	WP	T1	T2
			MORFS	FORFS
		PSI	Fixed	Swivel
S6F6-FF6	LS-FS2406-0606	3,000	-6	-6
S6F6-FF8	LS-FS2406-0608	3,000	-8	-8
S6F8-FF8	LS-FS2406-0808	3,000	-10	-10
S8F12-FF12	LS-FS2406-1212	3,000	-12	-12
S16F16-FF16	LS-FS2406-1616	3,000	-16	-16
S20F20-FF20	LS-FS2406-2020	3,000	-20	-20
S24F24-FF24	LS-FS2406-2424	3,000	-24	-24

## MF-MOBX



Part Number	Crossover	WP	T1	T2
			MORFS	MORB
		PSI	Swivel	Fixed
S6F6-06	LS-FS6400-0606	3,000	-6	-6
S6F6-08	LS-FS6400-0608	3,000	-6	-8
S6F8-08	LS-FS6400-0808	3,000	-8	-8
S6F8-010	LS-FS6400-0810	3,000	-8	-10
S8F10-010	LS-FS6400-1010	3,000	-10	-10
S12F12-012	LS-FS6400-1212	3,000	-12	-12
S16F16-016	LS-FS6400-1616	3,000	-16	-16

## MF-MOBX



Part Number	Crossover	WP	T1	T2
			MORFS	MOB
		PSI	Fixed	Swivel
9S4F4-04	LS-FS6801-0404	5,000	-4	-4
9S6F4-06	LS-FS6801-0606	5,000	-4	-4
9S6F6-06	LS-FS6801-0606	5,000	-6	-6
9S6F6-08	LS-FS6801-0608	5,000	-8	-8
9S6F8-06	LS-FS6801-0806	5,000	-6	-6
9S8F8-08	LS-FS6801-0808	5,000	-8	-8
9S8F10-010	LS-FS6801-1010	5,000	-10	-10
9S12F12-012	LS-FS6801-1212	5,000	-12	-12
9S16F16-016	LS-FS6801-1616	4,000	-16	-16

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## Nylon Sleeving



- High abrasion resistance
- Resistant to water, oil and hydraulic fluids
- Useful for bundling 2 or more hose
- MSHA approved flame resistant
- Temperature range: -40°C to 125°C (-40°F to 250°F)

Part Number	Flat Width	Round ID	Standard Pack
	in	in	ft
NS-077	1.38	0.77	300
NS-090	1.59	0.90	300
NS-100	1.66	1.00	300
NS-114	1.81	1.14	300
NS-122	2.05	1.22	300
NS-138	2.36	1.38	300
NS-159	2.64	1.59	300
NS-181	2.87	1.81	300
NS-219	3.58	2.19	300
NS-238	3.94	2.38	300
NS-263	4.21	2.63	300
NS-296	4.96	2.96	300
NS-366	5.81	3.66	300

## Nylon Sleeve - Velcro



- For easy installation and simple retrofits

Part Number	Flat Width	Round ID	Standard Pack
	in	in	ft
NSV-200B	7.75	2.00	150
NSV-300B	10.90	3.00	150
NSV-400B	14.00	4.00	150
NSV-500B	17.25	5.00	150
NSV-600B	20.38	6.00	150
NSV-700B	23.50	7.00	150
NSV-800B	26.62	8.00	150

## Polyurethane Sleeving



- Ideal for abrasion protection or bundling hose assemblies
- MSHA approved
- Temperature range: -40°C to 125°C (-40°F to 250°F)

Black Part Number	Yellow Part Number	Wall Thickness	Nominal ID B	Standard Package
		in	in	ft
PS-0625B	PS-0625Y	0.045	0.625	30
PS-0750B	PS-0750Y	0.045	0.750	30
PS-0875B	PS-0875Y	0.045	0.875	30
PS-1000B	PS-1000Y	0.045	1.000	30
PS-1125B	PS-1125Y	0.045	1.125	30
PS-1250B	PS-1250Y	0.045	1.250	30
PS-1375B	PS-1375Y	0.045	1.375	30
PS-1500B	PS-1500Y	0.045	1.500	30
PS-1625B	PS-1625Y	0.045	1.625	30
PS-1750B	PS-1750Y	0.045	1.750	30
PS-2000B		0.060	2.000	30
	PS-2125Y	0.060	2.125	30

# 7

## Fire Sleeving



- 500°F (260°C) continuous
- 2000°F (1090°C) for 15-20 minutes
- 3000°F (1650°C) for 15-20 seconds
- Fibreglass sleeve coated with a thick iron oxide red silicon rubber
- Protects hoses from molten metal splash, radiant heat, abrasion, chemical, vibration and electricity

Part Number	Nominal ID B	Standard Package
	in	ft
FS-050	0.50	50
FS-063	0.63	50
FS-075	0.75	50
FS-088	0.88	50
FS-100	1.00	50
FS-113	1.13	50
FS-138	1.38	50
FS-163	1.63	50
FS-175	1.75	50
FS-200	2.00	50

Fire Sleeve Tape  
PST-16 1" WIDE  
PST-24 1½" WIDE

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## Plastic Wrap - Medium Duty



- Ideal for abrasion protection or bundling hose assemblies
- Resistant to water, oil and fuels
- Temperature Range: -50°C to 77°C (-58°F to 170°F)

Black Part Number	Yellow Part Number	ID	Wall Thickness	Length
		in	in	ft
PWMD-040B	PWMD-040Y	0.40	0.06	100
PWMD-050B	PWMD-050Y	0.50	0.06	100
PWMD-065B	PWMD-065Y	0.65	0.08	100
PWMD-080B	PWMD-080Y	0.80	0.09	100
PWMD-110B	PWMD-110Y	1.10	0.09	100
PWMD-140B	PWMD-140Y	1.40	0.10	100
PWMD-170B	PWMD-170Y	1.70	0.14	100
PWMD-220B	PWMD-220Y	2.20	0.16	100
PWMD-260B	PWMD-260Y	2.60	0.16	75
PWMD-320B	PWMD-320Y	3.20	0.18	50
PWMD-390B	PWMD-390Y	3.90	0.18	50
PWMD-450B	PWMD-450Y	4.50	0.18	40

\* Yellow is non stock.

## Plastic Wrap - Heavy Duty



- Ideal for abrasion protection or bundling hose assemblies
- Resistant to water, oil and fuels
- Temperature range: -50°C to 77°C (-58°F to 170°F)

Black Part Number	Yellow Part Number	ID	Wall Thickness	Length
		in	in	ft
PWHD-050B	PWHD-050Y	0.50	0.07	100
PWHD-075B	PWHD-075Y	0.75	0.12	100
PWHD-100B	PWHD-100Y	1.00	0.12	100
PWHD-125B	PWHD-125Y	1.25	0.13	100
PWHD-150B	PWHD-150Y	1.50	0.14	100
PWHD-200B	PWHD-200Y	2.00	0.16	100
PWHD-250B	PWHD-250Y	2.50	0.21	50
PWHD-300B	PWHD-300Y	3.00	0.22	35
PWHD-350B	PWHD-350Y	3.50	0.25	25
PWHD-400B	PWHD-400Y	4.00	0.25	20
PWHD-600B	PWHD-600Y	6.00	0.25	15

\* Yellow is non stock.

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## Steel Spring Guard



• Steel spring guard is designed to provide a hose assembly with abrasion and kink resistance. It should fit tightly to the hose cover.

Part Number	ID	Pitch	Wide Gauge	Length / Box
	in			
SG-0550	0.55	7/32	0.08	1 x 25'
SG-0650	0.65	7/32	0.08	1 x 25'
SG-0750	0.75	7/32	0.08	1 x 25'
SG-0835	0.84	7/32	0.08	1 x 25'
SG-0900	0.90	7/32	0.08	1 x 25'
SG-1055	1.06	7/32	0.08	1 x 25'
SG-1240	1.24	11/32	0.12	1 x 25'
SG-1300	1.30	11/32	0.12	1 x 25'
SG-1380	1.38	11/32	0.12	1 x 25'
SG-1630	1.63	11/32	0.12	1 x 25'
SG-1810	1.81	11/32	0.12	1 x 25'
SG-2000	2.00	11/32	0.12	1 x 25'
SG-2125	2.13	11/32	0.12	2 x 10'
SG-2300	2.30	11/32	0.12	2 x 10'



## Tube Clamps - Standard

Group	Hose Size		Pipe Size	Tube OD	Standard Clamps		
	in	mm	in	in	Standard	Twin Standard	
1	0.25	6.4	1/8	1/4	TCS1-6.4A	TCT1-6.4A	
	0.38	9.5		3/8	TCS1 - 9.5A	TCT1-9.5A	
	0.47	12			TCS1-12A	TCS1 - 12A	
2	0.50	12.7	1/4	1/2	TCS2-12.7A	TCT2-12.7A	
	0.53	13.5			TCS2-13.5A	TCT2-13.5A	
	0.63	16	3/8	5/8	TCS2-16A	TCT2-16A	
	0.67	17.2			TCS2-17.2A	TCT2-17.2A	
	0.71	18			TCS2-18A	TCT2-18A	
3	0.75	19	1/2	3/4	TCS3-19A	TCT3-19A	
	0.79	20				TCS3-20A	TCT3-20A
	0.84	21.3				TCS3-21.3A	TCT3-21.3A
	1.00	25.4		1	TCS3-25.4A	TCT3-25.4A	
4	1.06	26.9	3/4		TCS4-26.9A	TCT4-26.9A	
	1.10	28			TCS4-28A	TCT4-28A	
5	1.25	32	1	1 1/4	TCS5-32A	TCT5-32A	
	1.31	33.7			TCS5-33.7A	TCT5-33.7A	
	1.50	38		1 1/2	TCS5-38A	TCT5-38A	
	1.57	40			TCS5-40A	TCT5-40A	
	1.66	42			TCS5-42A	TCT5-42A	
6	1.75	44.5	1 1/2	1 3/4	TCS6-44.5A	--	
	1.90	48.3			TCS6-48.3A	--	
	2.00	50.8		2	TCS6-50.8A	--	

\* Stacking nuts and bolt are available



## Tube Clamps - Heavy

Group	Hose Size		Pipe Size	Tube OD	Clamps
	in	mm	in	in	
H1	0.25	6.4		1/4	TCH1-6.4A
	0.38	9.5	1/8	3/8	TCH1-9.5A
	0.50	12.7		1/2	TCH1-12.7A
	0.53	13.5	1/4		TCH1-13.5A
	0.63	16		5/8	TCH1-16A
	0.67	17.2	3/8		TCH1-17.2A
H2	0.75	19		3/4	TCH2-19A
	0.79	20			TCH3-20A
	0.84	21.3	1/2		TCH2-21.3A
	1.00	25.4		1	TCH2-25.4A
	1.06	26.9	3/4		TCH2-26.9A
	1.10	28			TCH2-28A
H3	1.25	32		1 1/4	TCH3-32A
	1.31	33.7	1		TCH3-33.7A
	1.50	38		1 1/2	TCH3-38A
	1.66	42			TCH3-42A
H4	1.75	44.5		1 3/4	TCH4-44.5A
	1.90	48.3	1 1/2		TCH4-48.3A
	2.00	50.8		2	TCH4-50.8A
	2.24	57		2 1/4	TCH4-57A
	2.38	60.3	2		TCH4-60.3A
	2.50	63.5		2 1/2	TCH4-63.5A
	2.75	70		2 3/4	TCH4-70A
H5	2.87	73	2 1/2		TCH5-73A
	3.00	76.1		3	TCH5-76.1A
	3.50	88.9	3	3 1/2	TCH5-88.9A
	4.50	114.3	4	4 1/2	TCH6-114.3A

\* Stacking nuts and bolt are available

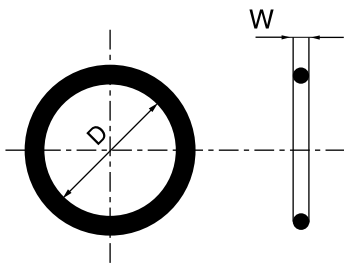
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## CL Vinyl Coated Support Clamps

Part Number	Crossover	Inside Diameter	Bolt Hole
		in	in
CL-05	HK-0509	1/4	9/32
CL-07	HK-0709	3/8	9/32
CL-08	HK-0809	7/16	9/32
CL-09	HK-0913	1/2	13/32
CL-10	HK-1013	9/16	13/32
CL-11	HK-1113	5/8	13/32
CL-12	HK-1213	11/16	13/32
CL-13	HK-1313	3/4	13/32
CL-14	HK-1413	13/16	13/32
CL-15	HK-1513	7/8	13/32
CL-16	HK-1613	15/16	13/32
CL-17	HK-1713	1	13/32
CL-18	HK-1813	1 1/16	13/32
CL-19	HK-1913	1 1/8	13/32
CL-21	HK-2117	1 1/4	17/32
CL-23	HK-2317	1 3/8	17/32
CL-25	HK-2517	1 1/2	17/32
CL-29	HK-2917	1 3/4	17/32
CL-31	HK-3117	1 7/8	17/32
CL-32	HK-3217	1 5/16	17/32
CL-33	HK-3317	2	17/32
CL-34	HK-3417	2 5/32	17/32
CL-38	HK-3817	2 21/32	17/32

## Boss O-Rings



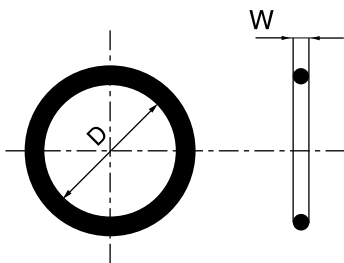
Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	O-Ring ID	Wall Diameter
	in	
OB-02	0.239	0.064
OB-03	0.301	0.064
OB-04	0.351	0.072
OB-05	0.414	0.072
OB-06	0.468	0.078
OB-08	0.644	0.087
OB-10	0.755	0.097
OB-12	0.924	0.116
OB-14	1.048	0.116
OB-16	1.170	0.116
OB-20	1.475	0.118
OB-24	1.720	0.118
OB-32	2.337	0.118

\*Also available in viton. Add suffix V. For example OB-06V

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## Face Seal O-Rings



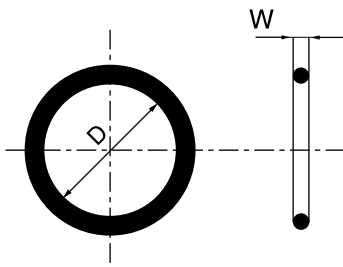
Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	O-Ring ID	Wall Diameter
	in	
OR-04	0.301	0.070
OR-06	0.364	0.070
OR-08	0.489	0.070
OR-10	0.614	0.070
OR-12	0.739	0.070
OR-16	0.926	0.070
OR-20	1.176	0.070
OR-24	1.489	0.070

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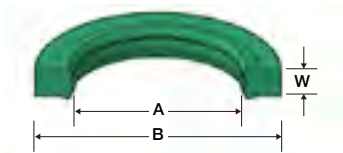
## Standard 61/62 O-Rings



Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	O-Ring ID	WALL Diameter
	in	
OF-08	0.734	0.139
OF-12	0.984	0.139
OF-16	1.296	0.139
OF-20	1.484	0.139
OF-24	1.859	0.139
OF-32	2.234	0.139
OF-40	2.734	0.139
OF-48	3.359	0.139
OF-56	3.859	0.139
OF-64	4.359	0.139

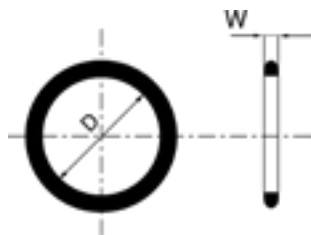
## High Pressure 61/62 O-Rings



Materials: Polyurethane  
 Hardness: 90 shore  
 Temperature Range:  
 -40°C to 100°C (-40°F to 212°F)

Part Number	O-Ring ID	WALL Diameter
	in	
OO-08	0.734	0.139
OO-12	0.984	0.139
OO-16	1.296	0.139
OO-20	1.484	0.139
OO-24	1.859	0.139
OO-32	2.234	0.139

## Cat® Flange D-Rings

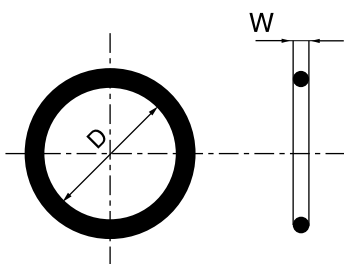


Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	D-Ring ID	WALL Diameter
	in	
OC-08	0.734	0.139
OC-12	0.984	0.139
OC-16	1.296	0.139
OC-20	1.484	0.139
OC-24	1.859	0.139
OC-32	2.234	0.139

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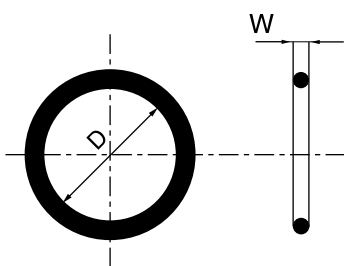
## BSP Cone O-Rings - Crimp Couplings



Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	BSP Dash Size	O-Ring ID	WALL Diameter
		in	
OBSP-04	-4	6.5	1.0
OBSP-06	-6	8.5	1.5
OBSP-08	-8	11.5	1.5
OBSP-10	-10	13	1.5
OBSP-12	-12	17	1.5
OBSP-16	-16	22	1.5
OBSP-20	-20	28.3	1.5
OBSP-24	-24	33.05	1.78
OBSP-32	-32	44.17	1.78

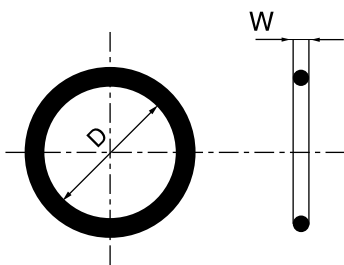
## DKOL Cone O-Rings - Crimp Couplings



Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	DKOL	O-Ring ID	WALL Diameter
		in	
OM-5X1	M12 x 1.5	5	1.0
OM-6X1.5	M14 x 1.5	6	1.5
OM-7.5X1.5	M16 x 1.5	7.5	1.5
OM-9X1.5	M18 x 1.5	9	1.5
OM-12X2	M22 x 2	12	2.0
OM-15X2	M26 x 2	15	2.0
OM-20X2	M30 x 2	20	2.0
OM-26X2	M36 x 2	26	2.0
OM-32X2.5	M45 x 2	32	2.5
OM-38X2.5	M52 x 2	38	2.5

## DKOS Cone O-Rings - Crimp Couplings



Materials: NBR  
 Hardness: 90 shore  
 Temperature Range:  
 -25°C to 125°C (-13°F to 257°F)

Part Number	DKOS	O-Ring ID	WALL Diameter
		in	
OM-5X1	M14 x 1.5	5	1.5
OM-6X1.5	M16 x 1.5	6	1.5
OM-7.5X1.5	M18 x 1.5	7.5	1.5
OM-9X1.5	M20 x 1.5	9	1.5
OM-10X2	M22 x 1.5	10	2.0
OM-12X2	M24 x 1.5	12	2.0
OM-16.3X2.4	M30 x 2	16.3	2.4
OM-20.3X2.4	M36 x 2	20.3	2.4
OM-26X2	M42 x 2	26	2.4
OM-32X2.5	M52 x 2	32	2.4

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## O-Ring Kit



Part Number	Description
OK-10	O-Ring Boss Kit (212 pieces)
OK-20	O-Ring Face Seal Kit (155 pieces)
OK-30	SAE Flange O-Ring Kit (70 pieces)
OK-40	Caterpillar Flange O-Ring Kit (80 pieces)
OK-50	O-Ring Boss, Face Seal & Flange 61/62 Kit (260 pieces)
OK-60EB90	European Metric Standard O-Ring Kit (500 pieces)
OK-60JB90	Japanese Metric Standard O-Ring Kit (380 pieces)

**These kits contain the most popular size 90 durometer nitrile O-rings, individually boxed, which will supply your shop, service truck, or parts counter with the size you need. Match the O-ring dash size to the dash size of the fitting.**

## Steel Cap/Plug Kit



Part Number	Description
PCDK-45	Domestic Cap & Plug Kit (148 pieces)

This kit contain the following:

- JIC Caps
- ORFS Caps
- MORB Plugs
- JIC Plugs
- NPT Plugs
- ORFS Plugs

# Accessories

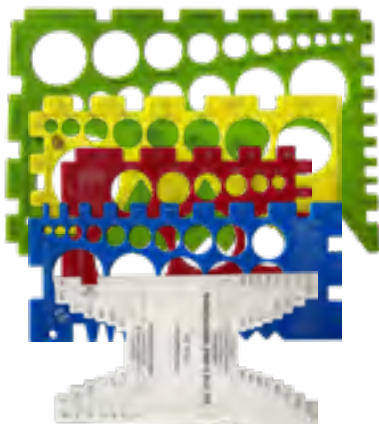
## Metric Thread ID Kit



Part Number	Cap and Plug Kits
MTK-31	Metric Thread ID Kit

Thread Identification Kits for male and female threads include:

- M8 x 1.0 through M52 x 2.0 metric thread gauges
- 1/8" BSPP through 2" BSPP thread gauges
- 31 dual threaded aluminum gauges



## Plastic Thread Gauge Kits

Part Number	Description
TGK-01-NPT	NPT (Red)
TGK-02-SAE	SAE (Green)
TGK-03-BSP	BSP (Yellow)
TGK-04-METRIC	Metric (Blue)
TGK-05-FLANGE	Flange (White)

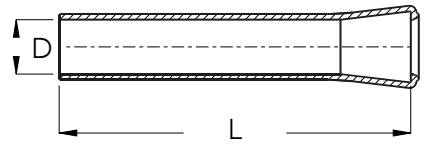
## Velcro Straps



• For bundling two or more hoses together

Part Number	Length
	in
CGVS-19	19
CGVS-30	30

## Vinyl Bend Restrictors



• Bend restricter reduces bending stress at hose and coupling junction, thereby extending hose life.

Part Number	ID	Length	Hose Type
	in	in	
TPG-530	0.53	5.75	PW4000B-04 (1/4"-1SC)
TPG-625	0.63	5.00	PW4000B-06 (3/8"-1SC)
TPG-700	0.70	5.25	PW6000G-06 (3/8"-2SC)
TPG-835	0.83	7.00	SK20-08 (1/2"-2SC)

## Flange Lock



• These caps do not hold pressure (0 PSI).

Size	Color	Code 61	Code 62	CAT
1/2"	Orange	FLT-0862ARU	FLT-0862ARU	--
5/8"	Silver	FLT-1061	--	--
3/4"	Blue	FLT-1262ARU	FLT-1262ARU	FLT-1262ARU
1"	Green	FLT-1662ARU	FLT-1662ARU	FLT-1662ARU
1 1/4"	Red	FLT-2062ARU	FLT-2062ARU	FLT-2062ARU
1 1/2"	Purple	FLT-2462ARU	FLT-2462ARU	FLT-2462ARU
2"	Black	FLT-3261AR	FLT-3262ARK	FLT-3262ARK
3"	Black	FLT-4861ARU	--	--

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## Dry Stabilizer Gauges - Vibration Control



**2½" Dry Stabilizer Gauge**

A stabilizer dampened movement that eliminates pointer flutter caused by vibration. This makes pressure reading much easier. No more leaky gauges. Won't fog in cold temperatures.

- Stainless steel case
- Brass internals
- +1.5% accuracy
- -20°C to 65°C (-4°F to 150°F)

Range	2½" Dial ¼" Lower Mount	2½" Dial ¼" Center Back
30" - 0 - 30 psi	PGCD2.5-30/30LM	PGCD2.5-30/30CB
0 - 15 psi	PGDS2.5-15LM	PGDS2.5-15CB
0 - 30 psi	PGDS2.5-30LM	PGDS2.5-30CB
0 - 60 psi	PGDS2.5-60LM	PGDS2.5-60CB
0 - 100 psi	PGDS2.5-100LM	PGDS2.5-100CB
0 - 160 psi	PGDS2.5-160LM	PGDS2.5-160CB
0 - 200 psi	PGDS2.5-200LM	PGDS2.5-200CB
0 - 300 psi	PGDS2.5-300LM	PGDS2.5-300CB
0 - 600 psi	PGDS2.5-600LM	PGDS2.5-600CB
0 - 1,000 psi	PGDS2.5-1000LM	PGDS2.5-1000CB
0 - 3,000 psi	PGDS2.5-3000LM	PGDS2.5-3000CB
0 - 5,000 psi	PGDS2.5-5000LM	PGDS2.5-5000CB
0 - 10,000 psi	PGDS2.5-10000LM	PGDS2.5-10000CB

# 7



**1½" Dry Gauge**

- Stainless steel case
- Brass internals
- +1.5% accuracy
- -20°C to 65°C (-4°F to 150°F)

## Dry Gauge - Standard

Range	1½" Dial ¼" Lower Mount
0 - 30 psi	PGD1.5-30CB
0 - 60 psi	PGD1.5-60CB
0 - 100 psi	PGD1.5-100CB
0 - 160 psi	PGD1.5-160CB
0 - 200 psi	PGD1.5-200CB

## Liquid Filled Gauges



### 2½" Stainless Steel Liquid Filled Gauge

- Stainless steel case
- Glycerin filled
- Brass internals
- +1.5% accuracy
- - 20°C to 65°C (-4°F to 150°F)

Range	2½" Dial ¼" Lower Mount	2½" Dial ¼" Center Back
30" - 0 - 30 psi	PGCL2.5-30/30LM	PGCL2.5-30/30CB
0 - 15 psi	PGL2.5-15LM	PGL2.5-15CB
0 - 30 psi	PGL2.5-30LM	PGL2.5-30CB
0 - 60 psi	PGL2.5-60LM	PGL2.5-60CB
0 - 100 psi	PGL2.5-100LM	PGL2.5-100CB
0 - 160 psi	PGL2.5-160LM	PGL2.5-160CB
0 - 200 psi	PGL2.5-200LM	PGL2.5-200CB
0 - 300 psi	PGL2.5-300LM	PGL2.5-300CB
0 - 600 psi	PGL2.5-600LM	PGL2.5-600CB
0 - 1,000 psi	PGL2.5-1000LM	PGL2.5-1000CB
0 - 1,500 psi	PGL2.5-1500LM	PGL2.5-1500CB
0 - 2,000 psi	PGL2.5-2000LM	PGL2.5-2000CB
0 - 3,000 psi	PGL2.5-3000LM	PGL2.5-3000CB
0 - 5,000 psi	PGL2.5-5000LM	PGL2.5-5000CB
0 - 6,000 psi	PGL2.5-6000LM	PGL2.5-6000CB
0 - 10,000 psi	PGL2.5-10000LM	PGL2.5-10000CB

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## Gauge Accessories



Part Number	Description
PGL2.5-UC	2½" U-Clamp
PGL2.5-FF	2½" Panel Mount

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**HIGH PRESSURE BALL VALVE (NPT THREAD)**

Size in	Part Number	WP psi
1/4	BV-025HPN	7250
3/8	BV-038HPN	7250
1/2	BV-050HPN	7250
3/4	BV-075HPN	5800
1	BV-100HPN	5075
1 1/4	BV-125HPN	5075
1 1/2	BV-150HPN	5075
2	BV-200HPN	5075



**HIGH PRESSURE BALL VALVE (HPSAE THREAD)**

Size in	Part Number	WP psi
1/4	BV-025HPSAE	7250
1/4	BV-038HPSAE	7250
1/2	BV-050HPSAE	7250
3/4	BV-075HPSAE	5800
1	BV-100HPSAE	5075
1 1/4	BV-125HPSAE	5075
1 1/2	BV-150HPSAE	5075
2	BV-200HPSAE	5075



**3-WAY HIGH PRESSURE BALL VALVE (NPT THREAD) L PORT**

Size in	Part Number	WP psi
1/4	BV-025HPN-3W	7250
3/8	BV-038HPN-3W	7250
1/2	BV-050HPN-3W	7250
3/4	BV-075HPN-3W	5800
1	BV-100HPN-3W	5075
1 1/4	BV-125HPN-3W	5075
1 1/2	BV-150HPN-3W	5075
2	BV-200HPN-3W	5075



**3-WAY HIGH PRESSURE BALL VALVE (SAE THREAD) L PORT**

Size in	Part Number	WP psi
1/4	BV-025HPNSAE-3W	7250
3/8	BV-038HPNSAE-3W	7250
1/2	BV-050HPNSAE-3W	7250
3/4	BV-075HPNSAE-3W	5800
1	BV-100HPNSAE-3W	5075
1 1/4	BV-125HPNSAE-3W	5075
1 1/2	BV-150HPNSAE-3W	5075
2	BV-200HPNSAE-3W	5075



**CSA BRASS - FULL PORT**

Size in	Part Number	WP psi
1/4	BV-025BRN	600
3/8	BV-038BRN	600
1/2	BV-050BRN	600
3/4	BV-075BRN	600
1	BV-100BRN	600
1 1/4	BV-125BRN	600
1 1/2	BV-150BRN	600
2	BV-200BRN	600
2 1/2	BV-250BRN	400
3	BV-300BRN	400
4	BV-400BRN	400



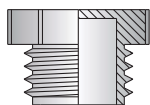
**CARBON STEEL - REDUCED PORT**

Size in	Part Number	WP psi
1/4	BV-025CS	2000
3/8	BV-038CS	2000
1/2	BV-050CS	2000
3/4	BV-075CS	2000
1	BV-100CS	2000
1 1/4	BV-125CS	2000
1 1/2	BV-150CS	2000
2	BV-200CS	2000

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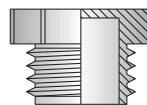
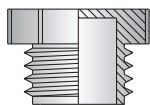
# Accessories

## Plastic Caps & Plugs



Thread Size in	Plug for Female BSP & NPSM	Cap for Male BSP & NPT
1/4	TPP-04FBSPP	TPC-04MP
3/8	TPP-06FBSPP	TPC-06MP
1/2	TPP-08FBSPP	TPC-08MP
3/4	TPP-12FBSPP	TPC-12MP
1	TPP-16FBSPP	TPC-16MP
1 1/4	TPP-20FBSPP	TPC-20MP
1 1/2	TPP-24FBSPP	TPC-24MP
2	TPP-32FBSPP	TPC-32MP

## 7



Dash Size	Plug for Female JIC, ORB	Cap for Male JIC, ORB	Plug for Female ORFS	CAP for Male ORFS
-04	TPP-04FJ	TPC-04MJ	TPP-04FF	TPC-04MF
-05	TPP-05FJ	TPC-05MJ	TPP-05FF	TPC-05MF
-06	TPP-06FJ	TPC-06MJ	TPP-06FF	TPC-06MF
-08	TPP-08FJ	TPC-08MJ	TPP-08FF	TPC-08MF
-10	TPP-10FJ	TPC-10MJ	TPP-10FF	TPC-10MF
-12	TPP-12FJ	TPC-12MJ	TPP-12FF	TPC-12MF
-16	TPP-16FJ	TPC-16MJ	TPP-16FF	TPC-16MF
-20	TPP-20FJ	TPC-20MJ	TPP-20FF	TPC-20MF
-24	TPP-24FJ	TPC-24MJ	TPP-24FF	TPC-24MF
-32	TPP-32FJ	TPC-32MJ	TPP-32FF	TPC-32MF

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## DMR100



**Capacity:**

Braided Hose: -3 thru -16  
4 Wire Hose: -6 thru -12

**Power Source:** Not included

**Available Source:**

Pump-01 10,000 PSI Handpump  
Pump-02 10,000 PSI Electric (110v)  
Pump-03 10,000 PSI Air/Hydraulic

**Dimensions:** 12.5" D, 12.5" W, 21.5" H

**Weight:** 48 lbs.

**Dies Included:** None

**Available Dies:**

Dies	Color	Dies	Color
DR100-07	Black	DR100-23	Yellow
DR100-09	Black	DR100-27	Brown
DR100-12	Black	DR100-31	Silver
DR100-14	Black	DR100-39	Red
DR100-16	Blue	DR100-41	Orange
DR100-19	Green	DR100-48	Black

## DMR165-SE



**Capacity:**

Braided Hose: -3 thru -20  
4 Wire Hose: -6 thru -20  
6 Wire Hose: -12 thru -16

**Power Source:** 1-HP, 110V AC, single phase

**Dimensions:** 22.5" D, 13" W, 27.5" H

**Weight:** 154 lbs.

**Dies Included:** None



Die

Cage

**Replacement Parts:**

- 100813:** Pusher - DMR100
- 100825:** Pusher - DMR165
- 104651:** Top press plate - DMR100
- 103270:** Top press plate - DMR165
- 104662:** Top press plate notched - DMR165
- 101349:** Pneumatic Start/Stop Switch
- 104162:** High-pressure grease in a 3 oz. tube

- Pump-01:** Two Stage Hand Pump
- Pump-02:** 1.5 HP, 110V Electric Pump
- Pump-03:** Air/Hydraulic Pump
- Shelf-01:** Die storage shelf



Notched

Press Plate

Shelf

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## DM205



**Capacity:**

Braided Hose: -3 thru -20  
 4 Wire Hose: -6 thru -20  
 6 Wire Hose: -12 thru -20

**Power Source:** 2-HP, 220V AC, single phase

**Dimensions:** 32" D, 17" W, 29" H  
**Weight:** 305 lbs.

**Dies Included:** 16mm, 19mm, 23mm, 31mm, 39mm

## DM206



**Capacity:**

Braided Hose: -3 thru -20  
 4 Wire Hose: -6 thru -20  
 6 Wire Hose: -12 thru -20

**Power Source:** 1-HP, 110V AC, single phase

**Dimensions:** 32" D, 17" W, 29" H  
**Weight:** 305 lbs.

**Dies Included:** 16mm, 19mm, 23mm, 31mm, 39mm



Crimper

**Standard Dies:**

- D200-16
- D200-19
- D200-23
- D200-31
- D200-39

**Optional Dies:**

- D200-08
- D200-10
- D200-12
- D200-14
- D200-27
- D200-34
- D200-48

**Replacement Parts:**

- D200-Screw:** Die Screw
- D200-Die Spring:** Die Spring
- D200-Die Ring:** Die Ring
- D200-Pusher:** Pusher
- 100712:** Top press plate
- 101349:** Pneumatic start/stop switch
- 104162:** High-pressure grease in a 3 oz. tube
- Shelf-02:** Die storage shelf



Screws & Springs



Die



Shelf

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## FT1380-115-5

The FT1380 crimps all your hose needs up to and including -16 spiral wire hose. The FT1380 is electronically controlled to give fast, accurate crimps the first time and every time you need a hose assembly. The electronic keypad is easy to adjust, with up to 10 programmable crimp settings. For those hose styles used less frequently, simply enter the 3 digit code of that hose.



**Capacity:**

Braided Hose: -3 thru -16  
 4 Wire Hose: -6 thru -16  
 6 Wire Hose: -12 thru -16

**Power Source:** 1.5-HP, 115V AC, single phase

**Dimensions:** 19.5" D, 12.5" W, 28.5" H

**Weight:** 238 lbs.

**Die Included:** M150, M210, M240, M320, M370

**Dies:**

- FT1380-200-M150
- FT1380-200-M180
- FT1380-200-M210
- FT1380-200-M240
- FT1380-200-M320
- FT1380-200-M370
- FT1380-200-M420
- FT1380-200-M465

FT1382-200-M465(Long)

**Replacement Parts:**

- FT1380-2-4:** Die Holder
- FT1380-2-9:** Die Cage Repair Kit
- FT1380-2-9-21:** Die Spring (16pcs)
- FT1380-3-3:** Rocker Switch



Die

## FC100-AP



**Capacity:**

Braided Hose: -3 thru -16  
4 Wire Hose: -6 thru -16

**Power Source:** Air/hydraulic

**Dimensions:** 9" D, 10" W, 12.5" H

**Weight:** 57 lbs

**Dies Included:** 16mm, 19mm, 23mm, 27mm, 31mm, 37mm

## FC100-HP



**Capacity:**

Braided Hose: -3 thru -16  
4 Wire Hose: -6 thru -16

**Power Source:** Hand pump

**Dimensions:** 9" D, 10" W, 12.5" H

**Weight:** 57 lbs

**Dies Included:** 16mm, 19mm, 23mm, 27mm, 31mm, 37mm

**Standard Dies:**

- FC100-D16
- FC100-D19
- FC100-D23
- FC100-D27
- FC100-D31
- FC100-D37

**Optional Dies:**

- FC100-D08
- FC100-D10
- FC100-D12
- FC100-D14



Die

## FC130

The FC130 series 1¼" crimper is a stable and reliable workshop crimper. The digital control panel is simple & user friendly.



**Capacity:**

Braided Hose: -3 thru -20  
 4 Wire Hose: -6 thru -20  
 6 Wire Hose: -12 thru -20

**Power Source:**

1½-HP, 110V AC, 1 phase

**Dimensions:** 24" D, 24" W, 24" H

**Weight:** 440 lbs.

**Dies Included:**

FC130-D12 12mm  
 FC130-D14 14mm  
 FC130-D16 16mm  
 FC130-D19 19mm  
 FC130-D22 22mm  
 FC130-D26 26mm  
 FC130-D30 30mm  
 FC130-D34 34mm  
 FC130-D39 39mm

**Optional Dies:**

FC130-D08 8mm  
 FC130-D10 10mm  
 FC130-D48 48mm



Die

**Replacement Parts:**

FC130-Pin  
 FC200-QC-Tool



Pin



Quick Change Tool

## FC200

The FC200 series 2" crimper is a stable and reliable workshop crimper. The digital control panel is simple & user friendly.



### Capacity:

Braided Hose: -3 thru -32

4 Wire Hose: -6 thru -32

6 Wire Hose: -6 thru -24

### Power Source:

2-HP, 220V AC, 3 phase

\*Available in a 220V AC single phase

**Dimensions:** 26" D, 24" W, 55" Hs

**Weight:** 594 lbs.

### Dies Included:

FC200-D12 12mm

FC200-D14 14mm

FC200-D16 16mm

FC200-D19 19mm

FC200-D23 23mm

FC200-D26 26mm

FC200-D30 30mm

FC200-D34 34mm

FC200-D39 39mm

FC200-D48 48mm

FC200-D56 56mm

FC200-D69 69mm

### Optional Dies:

FC200-D08 8mm

FC200-D10 10mm



Die

### Replacement Parts:

P32-Pin

FC200-QC-Tool



Pin



Quick Change Tool



## FC400

The FC400 series 4" crimper is a stable and reliable workshop crimper. The digital control panel is simple & user friendly.



**Capacity:**

Braided Hose: -3 thru -32  
 4 Wire Hose: -6 thru -32  
 6 Wire Hose: -6 thru -32  
 Industrial Hose: ¼" thru 4"

**Power Source:**

**FC400:** 7 HP, 230V, 3 phase

**Dimensions:** 39" D, 40" W, 63" H

**Weight:** 2,970 lbs.

**Dies Included:**

FC200-D12	12mm
FC200-D14	14mm
FC200-D16	16mm
FC200-D19	19mm
FC200-D23	23mm
FC200-D26	26mm
FC200-D30	30mm
FC200-D34	34mm
FC200-D39	39mm
FC200-D45	45mm
FC200-D51	51mm
FC200-D57	57mm
FC200-D63	63mm
FC200-D69	69mm
FC200-D74	74mm
FC200-D80	80mm
FC200-D89	89mm
FC200-D109	109mm
FC200-D119	119mm

**Optional Dies:**

FC200-D08	8mm
FC200-D10	10mm



Die

**Replacement Parts:**

P32-Pin  
 FC200-QC-Tool



Pin



Quick Change Tool

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## Air Conditioning Portable Crimper



**Part Number:** FC-AC100

**Description:** Air conditioning crimper is designed for crimping ZN air conditioning hose with Z series couplings. Dies included with the crimper have capability to crimp -6, -8, -10, and -12 assemblies.

**Features:**

- Portable hand operation.
- Bubble crimp.
- Does not require tools to change die sizes.
- Lightweight for easy handling, less than six pounds.
- Includes seven colour-coded die sets.
- No electrical requirement.

## HS150 HOSE SAW



### HS150 Hose Saw

**Capacity:** Braided Hose -4 through -20  
Spiral Hose -6 through -16

**Power:** 1 HP, 115V

**Dimensions:** 29" D, 21"W, 13" H

**Weight:** 70 lbs

**Blade Part Number:** Blade-S-10-1.000

**Blade Dimension:** 10" serrated blade - 1" arbor

## HS510 HOSE SAW



### HS510 Hose Saw

**Capacity:** Braided Hose -4 through -32  
Spiral Hose -6 through -32

**Power:** 4 HP, 220V, 3 phase

**Dimensions:** 29" D, 19"W, 21" H

**Weight:** 121 lbs

**Blade Part Number:** Blade-S-10-1.000

**Blade Dimension:** 350mm bevelled (slot)  
- 32mm arbor

## HS210 HOSE SAW



### HS210 Hose Saw

**Capacity:** Braided Hose -4 through -32  
Spiral Hose -6 through -32

**Power:** 5 HP, 230V, 3 phase

**Dimensions:** 19" D, 29"W, 36" H

**Weight:** 264 lbs

**Blade Part Number:** HS210-Blade

**Blade Dimension:** 300mm bevelled (slot) - 1.5" arbor

## HS500 HOSE SAW



### HS500 Hose Saw

**Capacity:** Braided Hose - 4 through -32  
Spiral Hose - 6 through -32

**Weight:** 156 lbs

**HS500-1:** 5 HP, 220V, 1 phase

**HS500-3:** 5 HP, 220 V, 3 phase

**Blade Part Number:** Blade-S-12-1.000

**Blade Dimension:** 12" serrated - 1" arbor

## 14" CHOP SAW ATTACHMENT



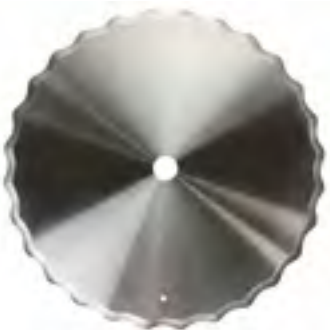
(Chop saw not included)

**Part Number:** TP-HS200  
**Capacity:** Braided hose -4 through -20  
 Spiral Hose -6 through -20  
**Weight:** 14 lbs (Attachment only)  
**Blade:** **Designed for 12" blade only.**



TP-HS200

## STEEL SAW BLADES



Part Number	Type	Diameter in	Arbor
BLADE-S-7-0.625	Scalloped	7	0.63
BLADE-S-10-0.625	Scalloped	10	0.63
BLADE-S-10-0.750	Scalloped	10	0.75
BLADE-S-12-1.000	Scalloped	12	1.00
BLADE-S-14-1.000	Scalloped	14	1.00

## HOSE REEL 7

HR7 can be used for hoses of dimensions from  $\frac{3}{16}$ " -  $1\frac{1}{4}$ ". All baskets (except the bottom one) can be swung outward horizontally in order to easily put the hose in place.

**Part Number:** HR7

**Weight:** 352 lbs

**Depth:** 50 in

**Width:** 40 in

**Height:** 88 in

**Coil ID:** 11.8 in

**Coil OD:** 33.4 in

**Coil Height:** 7.8 in



## Twinline Hose Separation Tool



Part Number	Description
Splitter-B170T-06	$\frac{3}{8}$ " One Wire Hose Splitter
Splitter-B270T-06	$\frac{3}{8}$ " Two Wire Hose Splitter
Splitter-B270T-06	$\frac{1}{2}$ " Two Wire Hose Splitter

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## HOSE SKIVE KIT



**Part Number:** HSK-16

**External Skive Heads:** 1/4", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4", 1 1/2", 2"

**Internal Skive Heads:** 3/4", 1", 1 1/4", 1 1/2", 2"

## 72 BIN STORAGE CABINET



**Part Number:** DFC72

**Size:** 24" D, 40" W, 46 1/4" H

## HCS-100

A quick and simple system using compressed air to clean hose. The tool is delivered with two coned nozzles, one for hoses from  $\frac{3}{16}$ " to 1" and the other for 1" to 2". The hose is pressed against the nozzle opening a valve to allow the compressed air to clean the hose tube.

**Replacement Part:**

- 9036001 Small Nozzle
- 9036002 Large Nozzle



Air Cleaning Systems

## UC-EL-8-DP

The projectile launcher can quickly and effectively clean hose, tubes and pipes reducing the need for current costly cleaning methods. It works by firing a foam pellet/projectile that is approximately 20% larger than the internal diameter of the hose, tube or pipe to be cleaned. When propelled through the line, the foam projectile cleans by wiping the internal surface forcing the contamination out of the open end.

- Projectile launcher
- Includes 8 nozzles for cleaning up to 1 1/4" hose/tube
- Includes 11 bags of projectiles from 7mm to 40mm
- Carrying case



Projectile Launcher

**Available Projectiles:**

**Description:**

**Bag Quantity:**

UC-07	$\frac{3}{16}$ " Hose (7mm)	100
UC-10	$\frac{1}{4}$ " Hose (10mm)	100
UC-12	$\frac{1}{4}$ " Hose (12mm)	100
UC-14	$\frac{3}{8}$ " Hose (14mm)	100
UC-16	$\frac{3}{8}$ " Hose (16mm)	100
UC-18	$\frac{1}{2}$ " Hose (18mm)	100
UC-20	$\frac{1}{2}$ " Hose (20mm)	50
UC-22	$\frac{5}{8}$ " Hose (22mm)	50
UC-26	$\frac{3}{4}$ " Hose (26mm)	50
UC-28	$\frac{3}{4}$ " Hose (28mm)	40
UC-30	1" Hose (30mm)	40
UC-36	1" Hose (36mm)	30
UC-40	1 1/4" Hose (40mm)	30
UC-50	1 1/2" Hose (50mm)	20
UC-55	1 1/2" Hose (55mm)	15
UC-60	2" Hose (60mm)	15
UC-65	2" Hose (65mm)	10
UC-80	3" Hose (80mm)	10

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## GUIDELINES - LIABILITY

FORSAFLEX DISCLAIMS ANY RESPONSIBILITY OR LIABILITY FOR ANY CRIMPED HOSE ASSEMBLIES THAT HAVE NOT BEEN MADE EXCLUSIVELY FROM GENUINE FORSAFLEX HOSE, HOSE FITTINGS AND APPROVED EQUIPMENT. THIS IS IN CONFORMANCE WITH CURRENT FORSAFLEX GUIDELINES FOR EACH SPECIFIC HOSE ASSEMBLY.

Forsaflex products are part of an engineered system which must be assembled and used in accordance with Forsaflex instructions and limitations. Forsaflex hose, couplings and crimping machines are a reliable assembly system designed by our engineering group. The use of other than Forsaflex components (hose, couplings, equipment) may produce assemblies that will not meet the rated performance. Failure to follow Forsaflex guidelines could lead to premature hose failures resulting in property damage, serious injury or death.

Forsaflex's limited warranty shall only apply if the customer uses the hose, hose fittings and crimping equipment specifically approved by Forsaflex's engineers.

Forsaflex will not be responsible when interchanging hose and/or couplings with hose and/or couplings with any other manufacturer. Forsaflex's liability ends and customer's begins when data is ignored or altered and products, other than Forsaflex's are assembled together.

Product Liability Responsibility for Such Hose Assemblies Become the Personal Responsibility of the Assembler or the Company Endorsing These Practices.

There is the argument that hoses branded with the same SAE specification are the same and can be interchanged and used with our couplings. That is false! Hose can only be expected to perform to the requirements of SAE when they are assembled with manufacturer approved couplings. This fact is recognized by SAE in their SAE J1273 handbook:

Proper End Fitting – Care must be taken to insure proper compatibility exists between the hose and coupling selected based on the manufactures' recommendation substantiated by testing to industry standards such as SAE J517.

All Forsaflex customers need to recognize the following critical points:

1. The data supplied with the Forsaflex crimper was developed after extensive testing with Forsaflex hose and couplings.
2. The data that Forsaflex supplies is only good with products bearing the Forsaflex name and catalog part number.
3. Forsaflex couplings, used with other manufacturer's hose, will not necessarily produce an acceptable assembly. Hose styles with identical SAE specs, for instance, are not necessarily the same when it comes to performance with Forsaflex couplings.
4. Hose compatibility with various materials is a reference only. The purchaser is responsible for the verification of suitability. Consult Forsaflex if there is any doubt.
5. Minimum burst pressure ratings listed in our catalog, are for reference and design purposes only. Minimum burst pressure ratings give no indication that the product should be used above the indicated rated working pressure.

## **AIRCRAFT APPLICATION GUIDELINES**

There are no Forsaflex products that we would endorse to be used in any aircraft applications. Our hose and coupling (includes belts) product lines are not designed for any types of aircraft, including helicopters, commercial or private airplanes, ultra-light planes and lighter-than-air craft.

If the user violates the above policy by using Forsaflex product on an aircraft application, that user assumes the sole and exclusive responsibility and liability and Forsaflex assumes no responsibility or liability regarding same.

## SAE J1273 HYDRAULIC GUIDELINES

**Foreword** - This SAE Recommended Practice is intended as a guide to consider when selecting, routing, fabricating, installing, replacing, maintaining, and storing hose for fluid power systems. It is subject to change to keep pace with experience and technical advances. For those new to hose use in a fluid-power system, this guide outlines practices to note during each phase of system design and use. Experienced designers and users skilled in achieving proper results, as well as the less experienced, can use this outline as a list of considerations to keep in mind.

Fluid power systems are complex and require extensive knowledge of both system requirements and the various types of hose. Therefore, all-inclusive, detailed, step-by-step instructions are not practical and are beyond the scope of this document. Less experienced designers and users who need more information can consult specialists such as hose suppliers and manufacturers. This guide can improve the communication process.

**Safety Considerations** - These recommended practices involve safety considerations; note these carefully during all phases of design and use of hose systems. Improper selection, fabrication, installation, or maintenance of hose and hose assemblies for fluid-power systems, may result in serious personal injury or property damage. These recommended practices can reduce the likelihood of component or system failure, thereby reducing the risk of injury or damage.

**1. Scope** - SAE J1273 provides guidelines for selection, routing, fabrication, installation, replacement, maintenance and storage of hose and hose assemblies for fluid-power systems. Many of these SAE Recommended Practices also may be suitable for other hoses and systems.

### 2. References

**2.1 Application Documents** - The following publications form a part of this specification to the extent specified herein. Unless otherwise specified, the latest issue of SAE publications shall apply.

- a. **SAE J343** - Test and Procedures for SAE 100R Series Hydraulic Hose and Hose Assemblies
- b. **SAE J514** - Hydraulic Tube Fittings
- c. **SAE J517** - Hydraulic Hose
- d. **SAE J1927** - Cumulative Damage Analysis for Hydraulic Hose Assemblies.

**2.1.2 ISO Publication** - Available from ANSI, 25 W. 43rd St. New York, NY 10036-8002

**3. Definitions** - These explanations serve only to clarify this document and are not intended to stand alone. They are presented sequentially, with the former helping to explain the latter.

**3.1 Fluid Power** - Energy transmitted and controlled using pressurized hydraulic fluids or compressed air.

**3.2 Hose** - Flexible conductor. In this document, the term hose also may refer to a hose assembly with related accessories used in fluid power applications.

**3.3 Hose Fitting or Fitting** - Connector which can be attached to the end of the hose.

**3.4 Hose Assembly** - Hose with hose fittings attached.

**3.5 Hose Failure** - Occurrence in which a hose stops meeting system requirements.

**3.6 Hose Service Life** - Length of time a hose meets system requirements without needing replacement.

**4. Safety Considerations** - Listed in 4.1 to 4.7 are some potential conditions and situations that may lead to personal injury and/or property damage. This list is not necessarily all inclusive. Consider reasonable and feasible means, including those described in this section, to reduce the risk of injuries or property damage.

**4.1 Fluid Injections** - Fine streams of escaping pressurized fluid can penetrate skin and enter a human body. These fluid injections may cause severe tissue damage and loss of limb.

Consider various means to reduce the risk of fluid injections, particularly in areas normally occupied by

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operators. Consider careful routing, adjacent components, warnings, guards, shields and training programs. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Avoid contact with escaping fluids. Treat all leaks as though pressurized and hot enough to burn skin. Never use any part of your body to check for leaks. If a fluid-injection accident occurs, see a doctor immediately.

**DO NOT DELAY OR TREAT AS A SIMPLE CUT!** Any fluid injected into the skin must be surgically removed within a few hours, or gangrene may result. Doctors unfamiliar with this type of injury should consult a knowledgeable medical source.

**4.2 Whipping Hose** - If a pressurized hose assembly blows apart, the fittings can be thrown off at high speed, and the loose hose can flail or whip with great force. This particularly true in compressible fluid systems. When the risk exists, consider guards and restraints to protect against injury.

**4.3 Burns from Conveyed Fluids** - Most fluidpower media may reach temperatures that can burn the human skin. If there is a risk of burns from escaping fluids, consider guards and shields to prevent injury to prevent injury, particularly in areas normally occupied by operators.

**4.4 Fire and Explosions from Conveyed Fluids** - Most fluid-power media, including fire resistant hydraulic fluids, will burn under certain conditions. Fluids which escape from pressurized systems may form a mist or fine spray which can flash or explode upon contact with an ignition source. Consider selecting, guarding and routing hose to minimize the risk of combustion. (See section 5 and ISO 3457).

**4.5 Fire and Explosions from Static-Electric Discharge** - Fluid passing through hose can generate static electricity, resulting in static-electric discharge. This may create sparks that can ignite system fluids in the surrounding atmosphere. When this potential exists, select hose specifically designed to carry the static-electric charge to ground.

**4.6 Electrical Shock** – Electrocutation could occur if hose conducts electricity through a person. Most hoses are conductive. Many contain metal or have metal fittings. Even nonconductive hoses can be conduits for electricity if they carry conductive fluids.

Be aware of routing or using hose near electrical sources. When this cannot be avoided, select appropriate hose. Non-conductive hoses should be considered. SAE J517 – 100R7 and 100R8, with orange covers marked “Non-conductive”

are available for applications requiring nonconductive hose.

**4.7 Mechanisms Controlled by Fluid Power–**

Mechanisms controlled by fluids in hoses can become hazardous when a hose fails. For example, when a hose bursts, objects supported by fluid pressure may fall, or vehicles or machines may lose their brakes or steering. If mechanisms are controlled by fluid power, consider safe modes of failure that minimize risks of injury or damage.

**5.0 Hose Selection and Routing** – A wide variety of interacting factors influence hose service life and the ability of each fluid-power system to operate satisfactorily, and the combined effects of these factors on service life are often unpredictable. Therefore, these documents should not be construed as design standards.

For applications outside the specification in SAE J517, SAE J514 or other relevant design standards, performance of hose assemblies should be determined by appropriate testing. Carefully analyze each system. Then design routings and select hose and related components to meet the system-performance and hose-service-life requirements, and to minimize the risks of personal injury and/or property damage. Consider the following factors:

**5.1 – System Pressures** – Excessive pressure can accelerate hose assembly failure. Analyze the steady-state pressure, and the frequency and amplitude of pressure surges, such as pulses and spikes.

These are rapid and transient rises in pressure which may not be indicated on many common pressure gauges and can be identified best on high-frequency-response electronic measuring instruments. For maximum hose service life, hose selection should be based on system pressure. Hose may be used above its maximum working pressure where reduced life expectancy is acceptable.

SAE J1927 provides one method to help predict wear-reinforced hose service life for a given hydraulic application, where the surge pressure peaks vary, and/or the highest pressure peaks occur infrequently.

**5.2 – Suction** – For suction applications, such as inlet flow to pumps, select hose to withstand both the negative and positive pressures the system imposes on the hose.

**5.3 - External Pressure** – In certain applications, such as in autoclaves or under water, the external environment pressures may exceed the fluid pressure inside the hose. In these applications, consider the external pressures, and, if necessary, consult the manufacturers.

**5.4 – Temperature** – Exceeding hose temperature ratings may significantly reduce hose life. Select hose so the fluid and ambient temperatures, both static and transient, fall within the hose ratings. The effects of external heat sources should not raise the temperature of the hose above its operating maximum temperature. Select hose, heat shields, sleeving and other methods for these requirements, and route or shield hose to avoid hose damage from external heat sources.

**5.5 – Permeation** – Permeation, or effusion, is seepage of fluid through the hose. Certain materials in hose construction are more permeable than others. Consider the effects of permeation when selecting hose, especially with gaseous fluid. Consult the hose and fluid manufacturers for permeability information.

**5.6 – Hose-Material Compatibility** – Variables that can affect compatibility of system fluids with hose materials include, but are not limited to: a) Fluid Pressure, b) Temperature, c) Concentration and d) Duration of Exposure.

Because of permeation (see 5.5), consider compatibility of system fluids with the hose, tube, cover, reinforcement and fittings. Consult the fluid and hose manufacturers for compatibility information.

**NOTE** – Many fluid/elastomer compatibility tables in manufacturer’s catalogs show ratings based at room temperature (21°C). These ratings may change at other temperatures. Carefully read the notes on the compatibility tables, and if in doubt, consult the manufacturer.

**5.7 – Environment** – Environmental conditions can cause hose and fitting degradation. Conditions to evaluate include, but are not limited to: a) Ultraviolet Light, b) Salt Water, c) Air Pollutants, d) Temperature (see 5.4), e) Ozone, f) Chemicals, g) Electricity and h) Abrasion. If necessary, consult the manufacturer for more information.

**5.8 – Static-Electric Discharge** – Fluid passing through the hose can generate static electricity resulting in static-electric discharge. This may create sparks that can puncture hose. If this potential exists, select hose with sufficient conductivity to carry the static-electric charge to ground.

**5.9 – Sizing** – The power transmitted by pressurized fluid varies with pressure and rate of flow. Select hose with adequate size to minimize pressure loss,

and to avoid hose damage from heat generation or excessive velocity. Conduct calculations, or consult the manufacturer for sizing at flow velocities.

**5.10 – Unintended Uses** – Hose assemblies are designed for the internal forces of conducted fluids. Do not pull hose or use it for purposes that may apply external forces for which the hose or fittings were not designed.

**5.11 – Specifications and Standards** – When selecting hose and fittings for specific applications, refer to applicable government, industry and manufacturer’s specifications and standards.

**5.12 – Unusual Applications** – Applications not addressed by the manufacturer or by industry standards, may require special testing prior to selecting a hose.

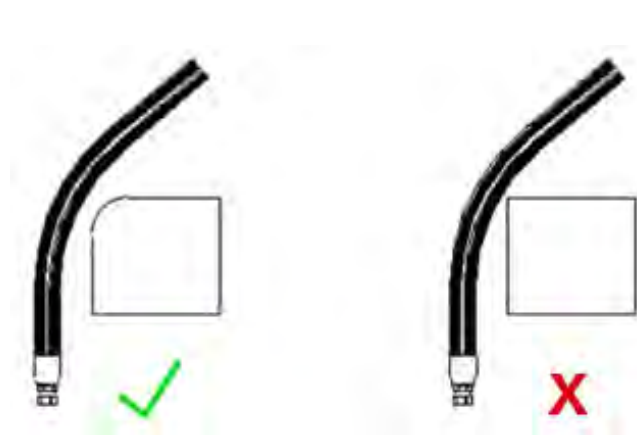
**5.13 – Hose Cleanliness** – The cleanliness requirements of system components, other than hose, will determine the cleanliness requirements of the application. Consult the components manufacturer’s cleanliness information for all components in the system. Hose assemblies vary in cleanliness levels; therefore, specify hose assemblies with adequate cleanliness for the system.

**5.14 – Hose Fittings** – Selection of the proper hose fittings for the hose and application is essential for proper operation and safe use of hose and related assembly equipment. Hose fittings are qualified with the hose.

Therefore, select only hose fittings compatible with the hose for the applications. Improper selection of hose fittings or related assembly equipment for the application can result in injury or damage from leaks, or from hose assemblies blowing apart. (See 4.2, 6.2, 6.3 and 6.4)

**5.15 – Vibration** – Vibration can reduce hose service life. If required, conduct tests to evaluate the frequency and amplitude of system vibration. Clamps or other means may be used to reduce the effects of vibration. Consider the vibration requirements when selecting hose and predicting service life.

**5.16 – Hose Cover Protection** – Protect the hose cover from abrasion, erosion, snagging and cutting. Special abrasion-resistant hoses and hose guards are available for additional protection. Route hose to reduce abrasion from hose rubbing other hose or objects that may abrade it.



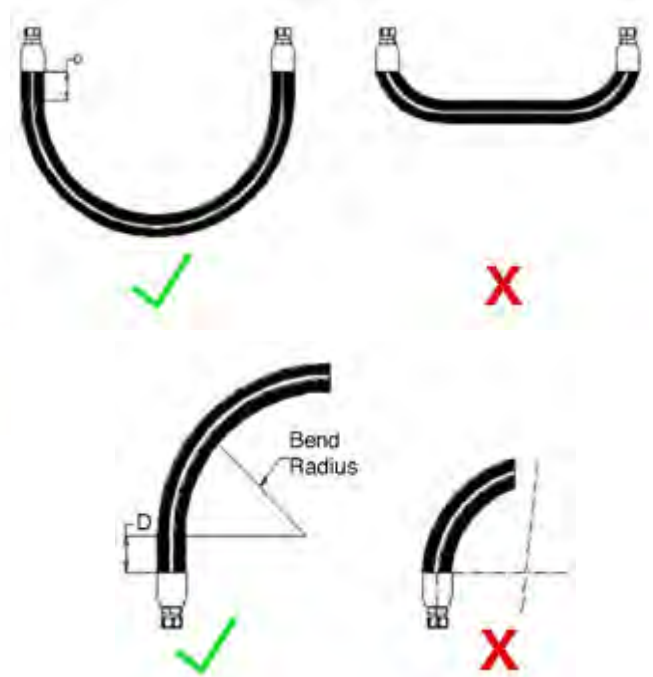
**5.17 – Physical Abuse** – Route hose to avoid:  
 a) Tensile Loads, b) Side Loads, c) Flattening, d) Thread Damage, e) Kinking, f) Damage to Sealing Surfaces, g) Abrasion and h) Twisting.

**5.18 – Swivel-Type Adapters** – Swivel-type fittings or adapters do not transfer torque to hose while being tightened. Use these as needed to prevent twisting during installation.

**5.19 – Live Swivels** – If two components in the system are rotating in relation to each other, live swivels may be necessary. These connectors reduce the torque transmitted to the hose.

**5.20 – Slings and Clamps** – Use slings and clamps to support heavy or long hose and to keep it away from moving parts. Use clamps that prevent hose movement that will cause abrasion.

**5.21 – Minimum Bend Radius** – The minimum bend radius is defined in SAE J343 and is specified in other SAE standards and hose manufacturer’s product literature. Routing at less than minimum bend radius may reduce hose life. Sharp bending at the hose/fitting juncture may result in leaking, hose rupturing or in the hose assembly blowing apart.

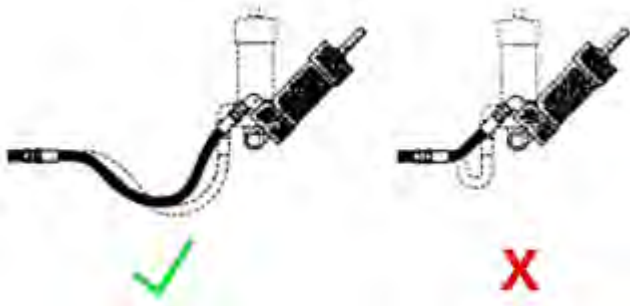


**5.22 – Elbows and Adapters** – In special cases, use elbows or adapters to relieve hose strain. (See Figure 3).

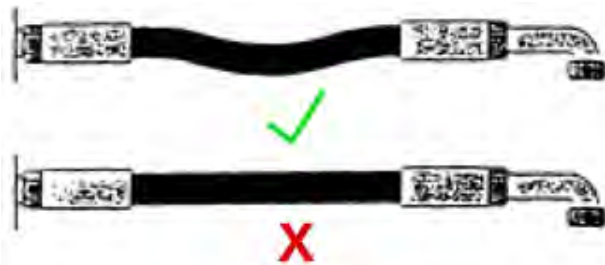


**5.23 – Lengths** – Unnecessarily long hose can increase pressure drop and affect system performance. When pressurized, hose that is too short may pull loose from its fittings, or stress the fitting connections, causing premature metallic or seal failures.

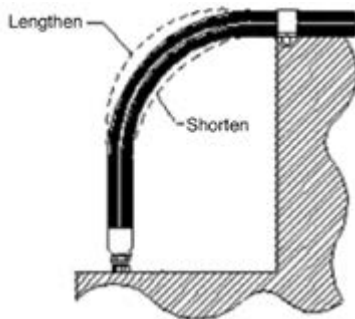
**5.23.1 – Motion Absorption** – Provide adequate hose length to distribute movement and prevent bends smaller than the minimum bend radius.



**5.23.2 – Hose and Machine Tolerances** – Design hose to allow for changes in length due to machine motion and tolerances.



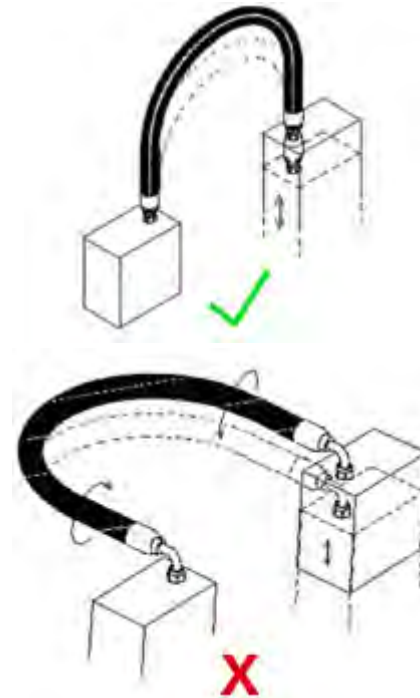
**5.23.3 – Hose Length Change Due to Pressure** – Design hose to accommodate length changes from changing pressures. DO NOT cross or clamp together high and low pressure hoses. The difference in length changes could wear the hose covers.



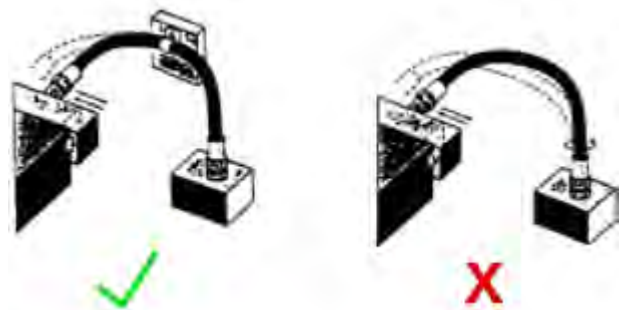
**5.24 – Hose Movement and Bending** – Hose allows relative motion between system components. Analyze this motion when designing hose systems.

The number of cycles may significantly affect hose life. Also avoid multiple planes of motion and twisting motion. Consider the motion of the hose when selecting hose and predictable service life.

**5.24.1 – Bend in Only in One Plane to Avoid Twisting.**



**5.24.2 – Prevent Hose Bending in More Than One Plane** – if the hose follows a compound bend, couple it into separate segments that flex only in one place.



**6 Hose-Assembly Fabrication** – Persons fabricating hose assemblies should be trained in the proper use of equipment and materials. The manufacturers' instructions and the practices listed as follows must be followed. Properly assembled fittings are vital to the integrity of a hose assembly.

Improperly assembled fittings can separate from the hose and may cause serious injury or property damage from whipping hose, or from fire or explosion of vapor expelled from the hose.

**6.1 – Component Inspection** – Prior to assembly, examine components for:

- a) Style or type
- b) Cleanliness
- c) Loose covers
- d) Nicks
- e) Inside obstructions
- f) Size
- g) Visible defects
- h) Damage
- i) Length
- j) Blisters
- k) Burrs

**6.2 – Hose Fittings** – Hose fitting components from one manufacturer are not usually compatible with fitting components supplied by another manufacturer. For example, do not use a hose fitting nipple from one manufacturer with a hose socket from another manufacturer.

It is the responsibility of the fabricator to consult the manufacturer’s written instructions or the manufacturer directly for information on proper fitting components.

**6.3 – Hose and Fitting Compatibility** – Care must be taken to determine proper compatibility between the hose and the fitting. Base selection on the manufacturer’s recommendations substantiated by testing to industry standards, such as SAEJ517.

Hose from one manufacturer is not usually compatible with fittings from another. Do not intermix hose and fittings from two manufacturers without approval from both manufacturers.

**6.4 – Hose Assembly Equipment** –

Assembly equipment from one manufacturer is usually not interchangeable with that from another manufacturer. Hose and fittings from one manufacturer should not generally be assembled with the equipment of another manufacturer.

**6.5 – Safety Equipment** – During fabrication, use proper safety equipment, including eye protection, breathing apparatus and adequate ventilation.

**6.6 – Reuse of Hose and Fittings** – When fabricating hose assemblies, do not reuse:

- a) Field-attachable (reusable) fittings that have blown or pulled off the hose.
- b) Any part of hose fittings that were permanently crimped or swaged to hose.
- c) Hose that has been in service after system checkout.

**6.7 – Cleanliness of Hose Assemblies** – Hose assemblies may be contaminated during fabrication. Clean hoses to specified cleanliness levels.

**7. Hose Installation and Replacement** – Use the following practices when installing hose assemblies in new systems or replacing hose assemblies in existing systems:

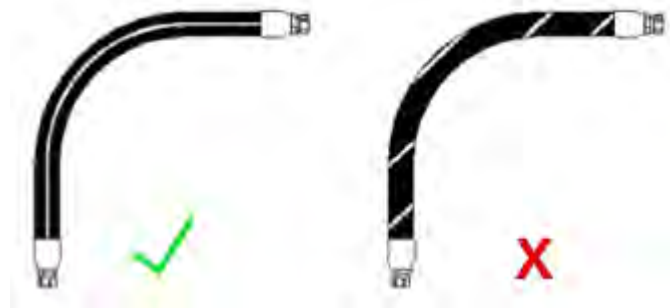
**7.1 – Pre-Installation Inspection** – Before installing hose assemblies, examine:

- a) Hose length and routing for compliance with original design.
- b) Assemblies for correct style, size, length and visible non-conformities.
- c) Fitting sealing surfaces for burrs, nicks or other damage.

**NOTE:** When replacing hose assemblies in existing systems, verify that the replacement is of equal quality to the original assembly.

**7.2 – Handling During Installation** – Handle hose with care during installation. Kinking hose, or bending at less than minimum bend radius may reduce hose life. Avoid sharp bending at the hose/fitting juncture. (See 5.21).

**7.3 – Twist Angle and Orientation** – Pressure applied to a twisted hose may shorten the life of the hose or loosen the connections. To avoid twisting, use the lay line or marking as a reference (see Figure 9).



**7.4 – Securement and Protection** – Install necessary restraints and protective devices. Determine that such devices do not create additional stress or wear points.

**7.5 – Routing** – Review proper routing practices provided in Section 5 and make appropriate corrections to obtain optimum performance.



**7.6 – Assembly Torque** – The connection end of a hose fitting is normally threaded to obtain tight pressure seal when attached to a port, an adapter or another fitting. Sometimes bolts or screws provide the threaded connection. Each size and type of connection requires different torque values, and these may vary due to type of material or exterior coating. Follow appropriate torquing instructions to obtain a proper pressure seal without overtorquing.

A properly calibrated torque wrench should be used to tighten each connection, except when the manufacturer specifies tightening a specified number of hex flat turns beyond finger tight to obtain a seal.

**7.7 – System Checkouts** – In hydraulic or other liquid systems, eliminate all air entrapment after completing the installation. Follow manufacturers' instructions to test the system for possible malfunctions and leaks.

**7.7.1** – To avoid injury during system checkouts:

- a) Do not touch any part of the system when checking for leaks (see 4.1).
- b) Stay out of potentially hazardous areas while testing hose systems (see Section 4).
- c) Relieve system pressure before tightening connections.

**8. Maintenance Inspection** – A hose and fitting maintenance program may reduce equipment downtime, maintain peak operating performance, and reduce the risk of personal injury and/or property damage. The user should design and implement a maintenance program that suits a specific application and each specific hose in that application.

**8.1 – Inspection Frequency** – Evaluate factors such as the nature and severity of the application, past history and manufacturers' information to establish the frequency of visual inspections and functional tests.

**8.2 – Visual Inspection (Hose & Fittings)** – Visually inspect hose and fittings for:

- a) Leaks at the hose fitting or in the hose
- b) Damaged, cut or abraded cover
- c) Exposed reinforcement
- d) Kinked, crushed, flattened or twisted hose
- e) Hard, stiff, heat cracked or charred hose
- f) Blistered, soft, degraded or loose cover
- g) Cracked, damaged or badly corroded fittings
- h) Fitting slippage on hose

i) Other signs of significant deterioration

If any of these conditions exist, evaluate those hose assemblies for correction or replacement.

**8.3 – Visual Inspection (All Other Components)** – When visually inspecting hose and fittings, inspect for related items including:

- a) Leaking ports
- b) Damaged or missing hose clamps, guards or shields
- c) Excessive dirt and debris around hose.
- d) System fluid: level, type, contamination, condition and air entrainment.

If any of these are found, address them appropriately.

**8.4 – Functional Test** – Functional tests determine if systems with hose are leak free and operating properly. Carry out functional tests per information from equipment manufacturers.

**9. Hose Storage** – Age control and the manner of storage can affect hose life. Use the following practices when storing hose.

**9.1 – Age Control** – Maintain a system of age control to determine that hose is used before its shelf life has expired. Shelf life is the period of time when it is reasonable to expect the hose to retain full capabilities for rendering the intended service. Store in a manner that facilitates age control and first-in, first-out usage based on manufacturing date on the hose or hose assembly. Per SAE J517:

- a) Shelf life of rubber hose in bulk form, or in hose assemblies passing visual inspection and proof test, is forty quarters (ten years) from the date of manufacture.
- b) Shelf life of thermoplastic and PTFE hose is considered to be unlimited.

**9.2 – Storage** – Store hose and hose assemblies in a cool, dark, dry area with ends capped. When storing hose, take care to avoid damage that could reduce hose life, and follow the manufacturers' information for storage and shelf life.

Examples of factors that can adversely affect hose products in storage are:

- |                             |                                 |
|-----------------------------|---------------------------------|
| <b>a)</b> Temperature       | <b>f)</b> Humidity              |
| <b>b)</b> Ozone             | <b>g)</b> Ultraviolet light     |
| <b>c)</b> Oils              | <b>h)</b> Solvents              |
| <b>d)</b> Corrosive liquids | <b>i)</b> Insects and fumes     |
| <b>e)</b> Rodents           | <b>j)</b> Radioactive materials |

If there are any questions regarding the quality or usability of hose or hose assemblies, evaluate appropriately:

- a)** Flex the hose to the minimum bend radius and compare it with new hose. After flexing, examine the cover and tube for cracks. If any appear, no matter how small, reject the hose.
- b)** If the hose is wire reinforced, and the hose is unusually stiff, or a cracking sound is heard during flexing, check for rust by cutting away a section of the cover from a sample. Rust would be another reason for rejection.
- c)** If doubt still persists, contact hose assembler to conduct proof-pressure tests or any other tests needed to verify hose quality.

## S.T.A.M.P.E.D.

We encourage using the STAMPED process to assist in determining the correct hose, coupling, and attachment method. It is critical in order to realize a safe hydraulic system.

**STAMPED** is an acronym. It stands for the 7 major information areas required to provide a quality hose assembly for the customer, as follows:

**S** stands for **Size**; I.D. and length; any O.D. constraints

- \* Overall length should be specified to include fittings
- \* **Inside Diameter** - the I.D. of the hose must be adequate to keep pressure loss to a minimum and avoid damage to the hose due to heat generation or excessive turbulence.
- \* **Flow Rate/Fluid Velocity** - The flow rate of the system in conjunction with the inside diameter of the hose will dictate the fluid velocity through the hose. Typical fluid velocities can be seen in the nomographic chart on page 409. Please note that suction line recommendations are different than pressure lines.

**T** stands for **Temperature**: Temperature of both the fluid conveyed and the environmental conditions.

Two areas of temperature must be considered: fluid temperature and ambient temperature. The hose selected must be capable of withstanding the minimum and maximum temperature seen by the system. Care must be taken when routing near hot manifolds, and in extreme cases, a heat shield may be advisable.

- \* **Maximum Intermittent Ambient Temperature**: Hose constructions which use a rubber inner tube and/or cover, can have significant change in properties when exposed to extreme heat or cold. This may require some hoses to be rated to a lower operating pressure when exposed to such conditions.
- \* **Fluid Temperature**: The fluid temperature is the temperature of the fluid being conveyed inside the hose during operation.
- \* **Ambient Temperature**: The ambient temperature is the temperature of the environment to which the hose assembly is exposed.
- \* **Maximum Temperature**: The maximum temperature is the highest temperature to which the fluid or the environment may reach. The temperature is typically short in duration and occurs under extreme operating conditions. The hose selected for an application should be rated at or above the maximum ambient and maximum fluid temperature.
- \* **Minimum Temperature**: This is the lowest temperature to which the hose assembly will be exposed. For a hydraulic system, this is based on the minimum ambient temperature. A hose should be rated at or below the minimum ambient temperature to which the assembly may be exposed.

**A** stands for **Application**: The conditions under which the hose assembly will be used. The type of application in which a hose assembly will be used is very important in determining what type of hose should be selected. The most common types of applications are listed below:

- \* **High Impulse**: Hydraulic system is subjected to frequent pressure spikes.

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- \* **Low Impulse:** Hydraulic system is seldom subjected to pressure spikes.
- \* **Non-Flexing Applications:** Hose assemblies are not subjected to bending or flexing from articulation of the equipment.
- \* **Flexing Applications:** Hose assemblies are subjected to bending or flexing due to articulation or movement of the equipment.

Static discharge can become an issue when non-polar liquids or mixtures including non-polar liquids are conveyed in non-conductive hose. A static charge will build, and on discharge, perforate the hose tube. To avoid this, use conductive tube products when conveying non-polar, or mixtures of non-polar liquids.

Electrical conductivity of hydraulic hoses or conveyed fluids is an issue with equipment used to work around electrical lines. If hydraulic equipment is to be used around electrical lines, always use hydraulic hoses rated as non-conductive.

Be sure to select products that will meet any regulatory standards required in the application. Examples of these standards would include: SAE, USCG, EN/DIN, ABS, etc.

Never place hoses in a position where they will be pulled on. Hoses are designed to hold pressure and convey fluids, exposing them to axial loads will cause premature failure. Any special or unusual applications should always be approved by the hose manufacturer, otherwise, additional independent testing may be required.

The following questions may need to be answered, such as:

- \* Where will the hose be used?
- \* Fluid and/or ambient temperature?
- \* Hose construction?
- \* Equipment type?
- \* Fluid compatibility?
- \* Thread end connection type?
- \* Working and surge pressures?
- \* Environmental conditions?
- \* Permanent or field attachable (reusable) couplings?
- \* Suction applications?
- \* Routing requirements?
- \* Thread type?
- \* Government and industry standards being met?
- \* Unusual mechanical loads?
- \* Minimum bend radius?
- \* Non-conductive hose required?
- \* Excessive abrasion?

**M** stands for **Material:** Fluid being conveyed, type and concentration.

Some applications require specialized oils or chemicals to be conveyed through the system. Hose selections must assume compatibility of the inner hose tube and cover material. In addition to the hose materials, all other components, which make up the hose assembly (hose ends, o-rings, etc.) must also be compatible with the fluid being used.

Permeation or effusion is the movement of a substance through the hose tube walls which may degrade the hose tube, cause cover blistering, or other undesired effects, and must be considered especially when conveying compressed gases.

Be sure to select a hose that is compatible and approved by the manufacturer for the fluid conveyed. Concentration, pressure, temperature and other factors may impact the compatibility of the hose and fluid. Depending on the fluid, the maximum temperature and pressure rating of the assembly, may be lowered.

Additional caution must be exercised in hose selection for gaseous applications such as refrigerants and LP Gas.

**NOTE:** All block type couplings contain nitrile O-rings which must be compatible with the fluids being used.

**P** stands for **Pressure:** Pressure to which the assembly will be exposed. The most important step in the hose selection process is knowing the system pressure, including pressure spikes.

\* **Maximum Operating Pressure:** This is the maximum pressure that the system should be exposed to in normal operating conditions. This pressure should be dictated by the relief setting of the system. Both the hose and hose end should not be rated to a pressure less than the maximum operating pressure of the system.

\* **Pressure Spikes:** When a hydraulic system is subjected to a large load in a short period of time, the system pressure can overshoot the relief setting and exceed the maximum operating pressure. Frequent pressure spikes can reduce the life of hydraulic hose assemblies.

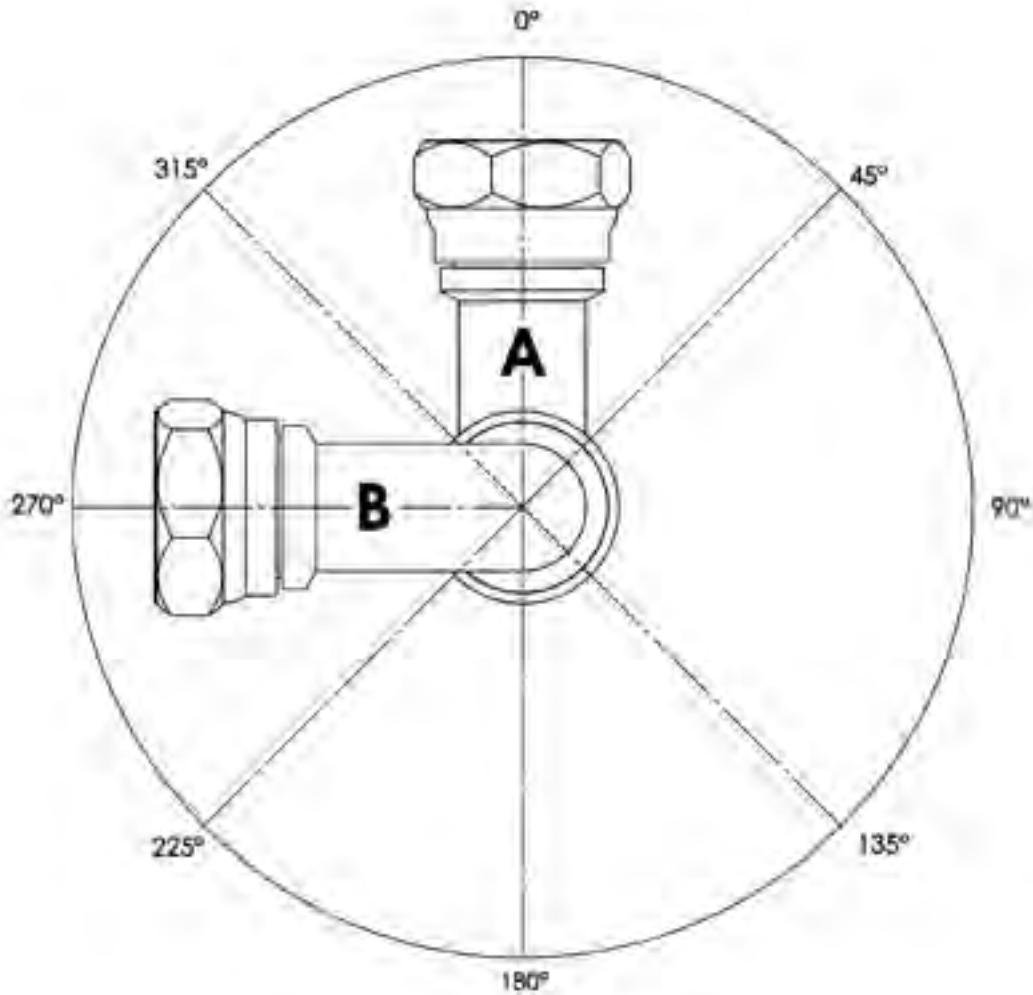
Hose assembly working pressures must be equal to or greater than the system pressure. Pressure spikes greater than the maximum working pressure will shorten hose life and must be taken into consideration.

Any time a hose assembly is to be exposed to external pressures, which may exceed the internal hose pressures, be sure to consult with the hose manufacturer for recommendations.

**E** stands for **ENDS:** Termination end style, type, orientation, attachment methods, etc. Always use manufacturer approved couplings for hose assemblies. Be sure to select the appropriate end termination for a system working pressure and other requirements, such as, vibration resistance.

**D** stands for **DELIVERY:** Testing, quality, cleanliness, packaging and delivery requirements. Define any special requirements needed. Always follow manufacturer recommendations for maximum fluid velocity within a hose. Excessive fluid velocity may cause pressure loss, heat generation, hose movement or whipping, system noise and hammer effects.

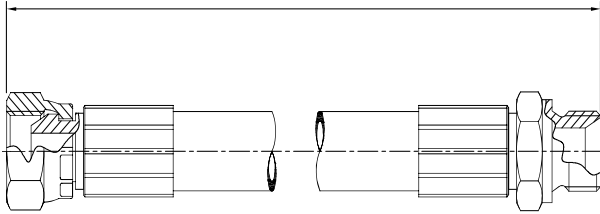
## HOW TO MEASURE FITTING ORIENTATION



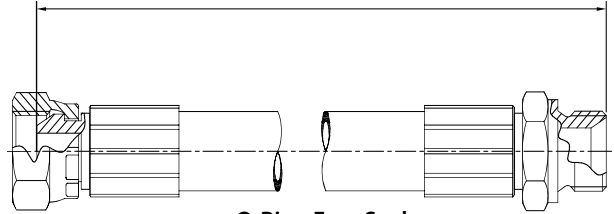
Orientation is determined by the number of degrees measured in a clockwise direction between the farthest fitting and the nearest fitting.

## DEFINING HOSE ASSEMBLY LENGTH

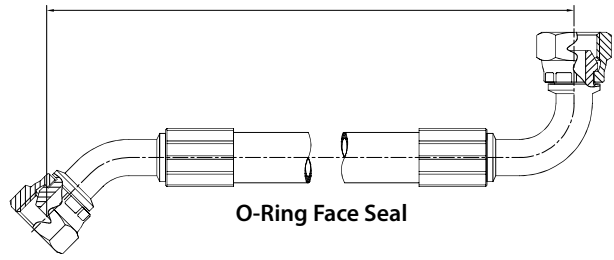
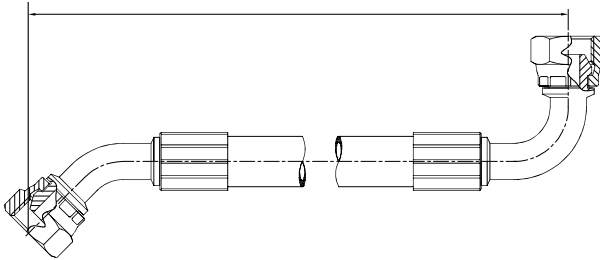
### 1. Overall Length (OAL)



### 2. Seat to Seat Length (SSL)

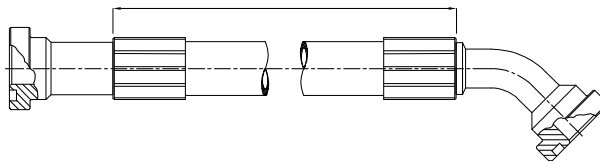


O-Ring Face Seal



O-Ring Face Seal

### 3. Hose Cut Length (CL)



## TOLERANCE FOR ASSEMBLED HOSES

Hose Length (in)	Tolerance (+/- in)	Hose Length (mm)	Tolerance (+/- mm)
0 to 12"	0.13 (1/8")	0 - 304.8 mm	3.2
12" to 18"	0.19 (3/16")	304.8 - 457.2 mm	4.8
Over 18" to 36"	0.25 (1/4")	457.2 - 914.4 mm	6.4
Over 36"	1%	Over 914.4 mm	1%

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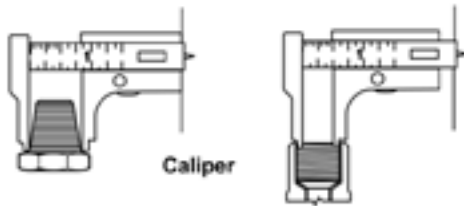
## Fitting Identification

### Identifying couplings is as easy as 1-2-3-4!

Tools required: ID/OD Calipers, Seat Angle Gauge and Thread Pitch Gauges.

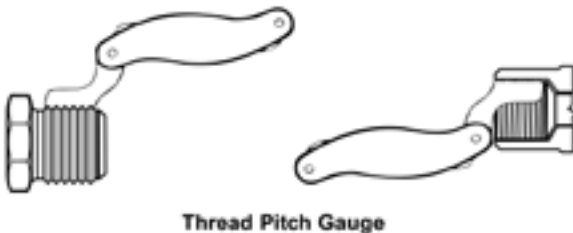
#### 1. Measuring Threads

A caliper is used to measure the OD of male threads and the ID of female threads. Measure at the largest point. In some cases, threads may be worn, and the exact measurement taken may not match exactly to the thread charts. For accuracy, it is recommended the male thread be measured.



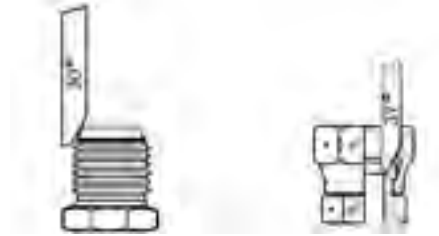
#### 2. Measuring Thread Pitch

A Thread Pitch Gauge is used to determine the number of threads per inch or the distance between threads in a metric connection. To ensure an accurate reading, make sure the fit of the thread gauge is snug.



#### 3. Measuring Seat Angle

A Seat Angle Gauge is used to measure the angle of the sealing surface. For either male or female fittings, place the gauge on the sealing surface. An accurate reading is taken when the gauge is parallel to the centerline of the coupling.

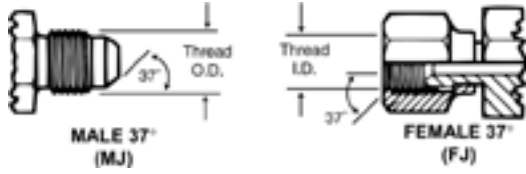


#### 4. Comparing Measurements to the Tables

ID/OD measurements, thread pitch and seat angle will be used to identify the fitting. Measurements taken can be used to compare with the dimensions found on charts in the following pages.

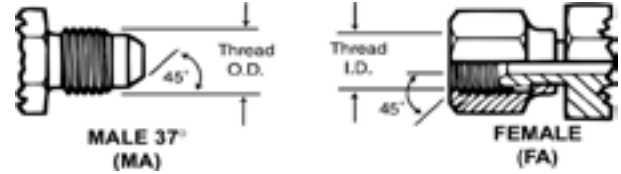


## JIC 37° - SAE J514



JIC connection is widely used in hydraulic systems. When the straight threads are engaged, the 37° male seat seals on the 37° female flare seat. Most thread sizes are identical to the 45° SAE connection as noted below. Care must be taken not to confuse these two connectors which have different seating angles.

## SAE 45° - SAE J512



The SAE 45° connectors seal in the same manner and are similar to the JIC 37° connectors except for the flare angle. 45° connectors are commonly found in automotive applications, on brass adapters, and are generally used at lower pressures than JIC 37° fittings. Many sizes have threads identical to those on JIC 37° connectors.

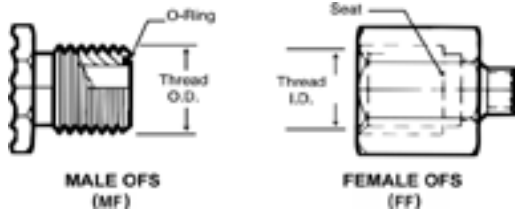
Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	5/16 -24*	7.9	0.31	6.8	0.27
-3	3/16	3/8 -24*	9.6	0.38	8.3	0.33
-4	1/4	7/16 -20*	11.2	0.44	9.9	0.39
-5	5/16	1/2 -20*	12.7	0.50	11.5	0.45
-6	3/8	9/16 -18	14.3	0.56	12.7	0.50
-8	1/2	3/4 -16*	19.0	0.75	17.5	0.69
-10	5/8	7/8 -14*	22.3	0.88	20.6	0.81
-12	3/4	1 1/16 -12	27.0	1.06	24.6	0.97
-14	7/8	1 3/16 -12	30.1	1.18	28.2	1.11
-16	1	1 5/16 -12	33.3	1.31	31.2	1.23
-20	1 1/4	1 5/8 -12	41.4	1.63	39.1	1.54
-24	1 1/2	1 7/8 -12	47.7	1.88	45.5	1.79
-32	2	2 1/2 -12	63.5	2.50	61.5	2.42

\* Same thread as SAE 45°.

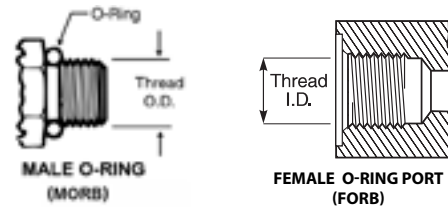
Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	5/16 -24*	7.9	0.31	6.8	0.27
-3	3/16	3/8 -24*	9.6	0.38	8.4	0.33
-4	1/4	7/16 -20*	11.2	0.44	9.9	0.39
-5	5/16	1/2 -20*	12.7	0.50	11.5	0.45
-6	3/8	5/8 -18	15.9	0.62	14.2	0.56
-7	7/16	1 1/16 -16	17.5	0.68	15.9	0.62
-8	1/2	3/4 -16*	19.0	0.75	17.5	0.68
-10	5/8	7/8 -14*	22.3	0.88	20.6	0.81
-12	3/4	1 1/16 -12	26.9	1.06	25.1	0.99
-14	7/8	1 1/4 -12	31.7	1.25	29.5	1.16
-16	1	1 3/8 -12	35.0	1.38	32.5	1.28

\* Same thread as SAE 37°.

## O-Ring Face Seal - SAE J1453



## O-Ring Boss - SAE J514



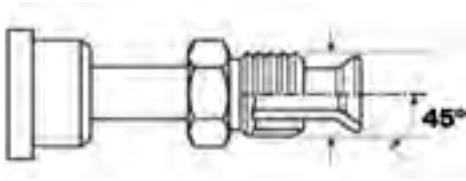
This connection is designed for leak-free use to 6000 PSI. The oring in the face of the straight thread male end seals against the flat face female seat and is mechanically held in place by a swivel female nut.

This straight thread connection uses the same threads as the JIC 37°. However, the 37° flare has been removed and an o-ring added. When mated with a female o-ring boss port the o-ring is trapped in a special tapered counterbore to effect the seal.

Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-4	1/4	9/16-18	14.2	0.56	12.9	0.51
-6	3/8	11/16-16	17.4	0.68	16.0	0.63
-8	1/2	13/16-16	20.6	0.81	19.0	0.75
-10	5/8	1-14	25.4	1.00	23.6	0.93
-12	3/4	1 3/16-12	30.0	1.18	28.4	1.12
-16	1	1 7/16-12	36.6	1.44	34.0	1.34
-20	1 1/4	1 11/16-12	42.7	1.68	40.6	1.60
-24	1 1/2	2-12	50.8	2.00	48.8	1.92

Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	5/16-24	7.9	0.31	6.9	0.27
-3	3/16	3/8-24	9.6	0.38	8.6	0.34
-4	1/4	7/16-20	11.2	0.44	9.9	0.39
-5	5/16	1/2-20	12.7	0.50	11.4	0.45
-6	3/8	9/16-18	14.2	0.56	12.9	0.51
-8	1/2	3/4-16	19.0	0.75	17.0	0.67
-10	5/8	7/8-14	22.3	0.88	20.3	0.80
-12	3/4	1 1/16-12	26.9	1.06	24.9	0.98
-14	7/8	1 3/16-12	30.0	1.18	27.7	1.09
-16	1	1 5/16-12	33.3	1.31	31.0	1.22
-20	1 1/4	1 5/8-12	41.4	1.63	39.1	1.54
-24	1 1/2	1 7/8-12	47.7	1.88	45.5	1.79
-32	2	2 1/2-12	63.5	2.50	61.2	2.41

## SAE 45° Inverted Flare (SAE J512)



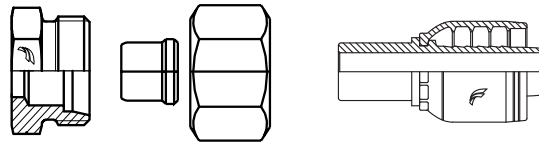
Male fitting, with a straight thread, can either be a 45-degree flare as a tube fitting or a 42-degree seat as a machined adapter. The female has a straight thread and a 42-degree inverted flare.

The seal takes place on the flared surfaces. The threads hold the connection in place mechanically.

Commonly found in automotive systems.

Dash Size	Inch Size	Thread	Male Thread OD	Female Thread ID
			in	in
-2	1/8	5/16 -28	5/16	9/32
-3	3/16	3/8 -24	3/8	21/64
-4	1/4	7/16 -24	7/16	25/64
-5	5/16	1/2 -20	1/2	29/64
-6	3/8	5/8 -18	5/8	37/64
-7	7/16	11/16 -18	11/16	5/8
-8	1/2	3/4 -18	3/4	45/64
-10	5/8	7/8 -18	7/8	13/16
-12	3/4	1 1/16 -16	1 1/16	1

## SAE J514 Flareless Tube Fitting



Male and female have straight threads. Male has 24-degree seat.

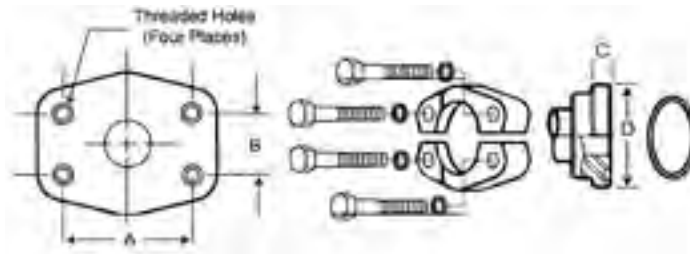
Female includes a compression sleeve for the sealing surface. A seal is formed with the compression sleeve as the female nut is tightened onto the male thread. A seal is formed between the compression sleeve, the male 24-degree seat and tubing.

Used to adapt steel tubing to a hydraulic hose assembly.

Dash Size	Tube Size	Inch Size	Thread	Female Thread OD	Male Thread ID
				in	in
-2	1/8	5/16	5/16 -24	17/64	5/16
-3	3/16	3/8	3/8 -24	21/64	3/8
-4	1/4	7/16	7/16 -20	25/64	7/16
-5	5/16	1/2	1/2 -20	29/64	1/2
-6	3/8	9/16	9/16 -18	1/2	9/16
-8	1/2	3/4	3/4 -16	1 1/16	3/4
-10	5/8	7/8	7/8 -14	13/16	7/8
-12	3/4	1 1/16	1 1/16 -12	33/32	1 1/16
-14	7/8	1 3/16	1 3/16 -12	17/64	1 3/16
-16	1	1 5/16	1 5/16 -12	1 15/64	1 5/16
-20	1 1/4	1 5/8	1 5/8 -12	1 35/64	1 5/8
-24	1 1/2	1 7/8	1 7/8 -12	1 51/64	1 7/8
-32	2	2 1/2	2 1/2 -12	2 27/64	2 1/2

## FLANGE - CODE 61, CODE 62, CAT

An O-Ring, inserted into a ring groove in the flange head seals on a smooth face female port, and is held in place by two clamp halves (or a one piece clamp) which are held in place by four bolts. J518 is interchangeable with ISO 6162, DIN 20066 and JIS B 8363, except for bolt size.



### CODE 61

Dash Size	Working Pressure		Flange OD "D"		Flange Thickness "C"		Bolt Spacing "A"		Bolt Spacing "B"		Bolt Size	
	psi	MPa	mm	in	mm	in	mm	in	mm	in	Imperial	Metric
-08	5,000	34.5	30.2	1.19	6.7	0.265	38.1	1.50	17.5	0.69	5/16 - 18 x 1 1/4	M8 X 1.25 X 30
-10*	5,000	34.5	34.0	1.34	6.7	0.265	42.9	1.69	19.8	0.78	5/16 - 18 x 1 1/4	M8 x 1.25 x 35
-12	5,000	34.5	38.1	1.50	6.7	0.265	47.6	1.88	22.4	0.88	3/8 - 16 x 1 1/4	M10 X 1.5 X 40
-16	5,000	34.5	44.4	1.75	8.0	0.315	52.4	2.06	26.2	1.03	3/8 - 16 x 1 1/4	M10 X 1.5 X 40
-20	4,000	27.6	50.8	2.00	8.0	0.315	58.7	2.31	30.2	1.19	7/16 - 16 x 1 1/2	M10 X 1.5 X 40
-24	3,000	20.7	60.3	2.38	8.0	0.315	69.8	2.75	35.8	1.41	1/2 - 13 x 1 1/2	M12 X 1.75 X 45
-32	3,000	20.7	71.4	2.81	9.5	0.375	77.8	3.06	42.9	1.69	1/2 - 13 x 1 3/4	M12 X 1.75 X 45
-40	2,500	17.2	84.1	3.31	9.5	0.375	88.9	3.50	50.8	2.00	1/2 - 13 x 1 3/4	M12 X 1.75 X 45
-48	2,000	13.8	101.6	4.00	9.5	0.375	101.6	4.19	62.0	2.44	5/8 - 11 x 1 3/4	M16 X 2.00 X 45

\* Komatsu

### CODE 62

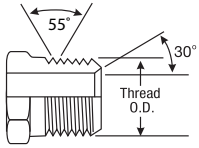
Dash Size	Working Pressure		Flange OD "D"		Flange Thickness "C"		Bolt Spacing "A"		Bolt Spacing "B"		Bolt Size	
	psi	MPa	mm	in	mm	in	mm	in	mm	in	Imperial	Metric
-08	6,000	41.4	31.7	1.25	7.8	0.305	40.5	1.59	18.3	0.72	5/16 - 18 x 1 1/4	M8 X 1.25 X 35
-12	6,000	41.4	41.3	1.63	8.8	0.345	50.8	2.00	23.9	0.94	3/8 - 16 x 1 1/2	M10 X 1.5 X 40
-16	6,000	41.4	47.6	1.88	9.5	0.375	57.1	2.25	27.7	1.09	7/16 - 14 x 1 3/4	M12 X 1.75 X 45
-20	6,000	41.4	54.0	2.13	10.3	0.405	66.7	2.63	31.8	1.25	1/2 - 13 x 1 3/4	M14 X 2.00 X 45
-24	6,000	41.4	63.5	2.50	12.6	0.495	79.4	3.13	36.6	1.44	5/16 - 11 x 2 1/4	M16 X 2.00 X 60
-32	6,000	41.4	79.4	3.13	12.6	0.495	96.8	3.81	44.5	1.75	3/4 - 10 x 2 3/4	M20 X 2.5 X 70

### CAT®

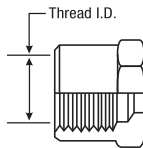
Dash Size	Working Pressure		Flange OD "D"		Flange Thickness "C"		Bolt Spacing "A"		Bolt Spacing "B"		Bolt Size	
	psi	MPa	mm	in	mm	in	mm	in	mm	in	Imperial	Metric
-12	6,000	41.4	41.3	1.63	14.2	0.560	50.8	2.00	23.9	0.94	3/8 - 16 x 1 1/2	M10 X 1.5 X 45
-16	6,000	41.4	47.6	1.88	14.2	0.560	57.1	2.25	27.7	1.09	7/16 - 14 x 1 3/4	M12 X 1.75 X 45
-20	6,000	41.4	54.0	2.13	14.2	0.560	66.7	2.63	31.8	1.25	1/2 - 13 x 1 3/4	M14 X 2.00 X 50
-24	6,000	41.4	63.5	2.50	14.2	0.560	79.4	3.13	36.6	1.44	5/16 - 11 x 2 1/4	M16 X 2.00 X 60
-32	6,000	41.4	79.4	3.13	14.2	0.560	96.8	3.81	44.5	1.75	3/4 - 10 x 2 3/4	M20 X 2.5 X 70

## British Standard Pipe - BSPP & BSPT

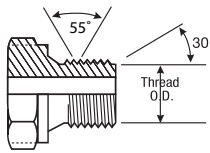
**Male BSPT**  
(MBSPT)



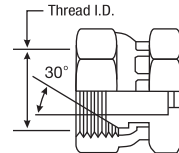
**Female BSPT**



**Male BSPP**  
(MBSPP)

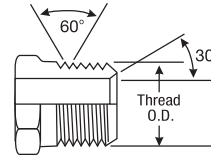


**Female BSPP**  
(FBSPP)

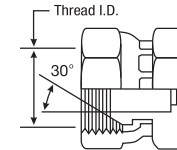
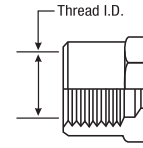


## NPTF and NPSM Pipe Threads

**NPTF Solid Male**  
(MP)



**NPTF Solid Female**  
(FP)



**NPSM Swivel Female**  
(FPX)

The British BSP connections include two types of threads, BSPP which are straight (or parallel) and BSPT which are tapered. The BSPT tapered male will mate with a BSPT tapered female (usually a port) and seals on the threads. The BSPP parallel male has a 30° chamfered seat which seals with a BSPP swivel female on its 30° cone seat. (Similar to the American NPSM-NPTF connection, however, the BSPP swivel female end is commonly found on couplings.)

The BSP threads are similar to, but not interchangeable with, American NPTF pipe threads.

This commonly used connection incorporates two methods of sealing.

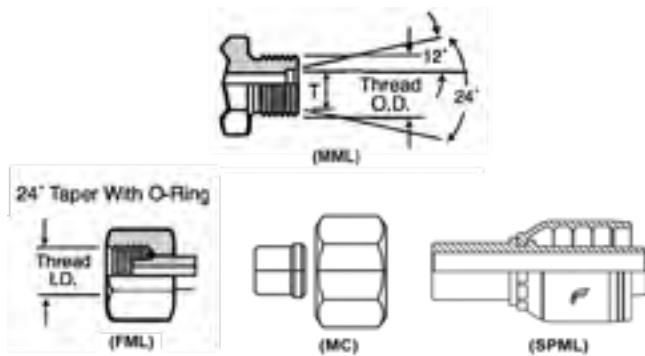
The male NPTF (Dryseal) tapered thread will mate with the NPTF tapered female, which is usually a port, and seal when the threads are crushed together. Additional sealing aids such as pipe dope and teflon tape are often used with these threads. If the male end has a 30° seat it will mate with the 30° cone seat in the NPSM straight thread swivel female usually found on adapters, and is mechanically held together by the threads.

Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	1/8 -28	9.5	0.38	8.73	0.34
-4	1/4	1/4 -19	13.5	0.53	11.9	0.47
-6	3/8	3/8 -19	16.7	0.66	15.1	0.59
-8	1/2	1/2 -14	20.6	0.81	19.1	0.75
-10	3/4	5/8 -14	23.0	0.91	20.6	0.81
-12	5/8	3/4 -14	26.2	1.03	24.6	0.97
-16	1	1-11	34.0	1.34	31.0	1.22
-20	1 1/4	1 1/4 -11	42.2	1.66	38.9	1.53
-24	1 1/2	1 1/2 -11	47.8	1.88	45.2	1.78
-32	2	2-11	59.4	2.34	56.4	2.22

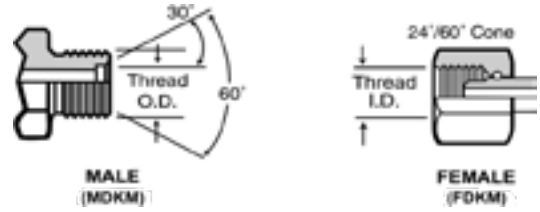
Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	1/8 -27	10.3	0.41	9.1	0.36
-4	1/4	1/4 -18	13.9	0.54	11.9	0.47
-6	3/8	3/8 -18	17.1	0.67	15.1	0.59
-8	1/2	1/2 -14	21.4	0.84	19.1	0.75
-12	3/4	3/4 -14	26.9	1.06	24.2	0.95
-16	1	1-11 1/2	33.3	1.31	30.5	1.20
-20	1 1/4	1 1/4 -11 1/2	42.4	1.67	38.9	1.53
-24	1 1/2	1 1/2 -11 1/2	48.5	1.91	45.2	1.78
-32	2	2-11 1/2	60.4	2.38	57.2	2.25

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## DIN 2353 - 24° Male and Mating Female



## DIN 3863 60° Cone - DKM



This German standard consists of a single male and female end with straight metric threads. The female has a 60° or a universal 24°/60° cone which seals on the 60° seat in the male end.

This connector system consists of one male and three styles of female, all of which have straight metric threads.

Sealing takes place between the 24° seat in the male end and the respective sealing areas in the female ends.

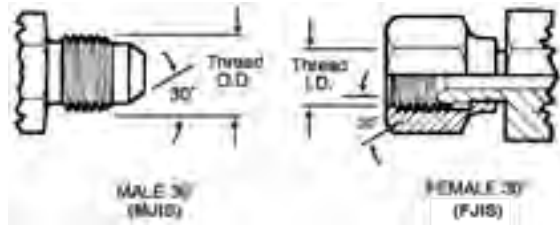
DIN 2353 includes both a light and heavy duty series which can be identified by measuring the tube O.D.

Thread	Male Thread OD		Female Thread OD		Tube OD	
	mm	in	mm	in	mm	in
M12 X 1.5	12	0.47	10.5	0.41	6	0.24
M14 X 1.5	14	0.55	12.5	0.49	8	0.32
M16 X 1.5	16	0.63	14.5	0.57	10	0.39
M18 X 1.5	18	0.71	16.5	0.65	12	0.47
M22 X 1.5	22	0.87	20.5	0.81	15	0.59
M26 X 1.5	26	1.02	24.5	0.96	18	0.71
M30 X 1.5	30	1.18	28.5	1.12	22	0.87
M38 X 1.5	38	1.50	36.5	1.44	28	1.10
M45 X 1.5	45	1.77	43.5	1.71	35	1.38
M52 X 1.5	52	2.04	50.5	1.99	42	1.65

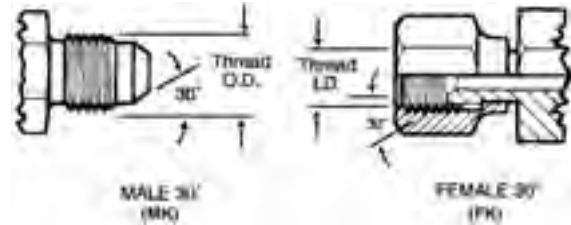
Thread	Male Thread OD		Female Thread ID		Tube OD	
					Light Series	Heavy Series
	mm	in	mm	in	mm	mm
M12 X 1.5	12	0.47	10.5	0.41	6	--
M14 X 1.5	14	0.55	12.5	0.49	8	6
M16 X 1.5	16	0.63	14.5	0.57	10	8
M18 X 1.5	18	0.71	16.5	0.65	12	10
M20 X 1.5	20	0.78	18.5	0.73	--	12
M22 X 1.5	22	0.87	20.5	0.81	15	14
M24 X 1.5	24	0.94	22.5	0.89	--	16
M26 X 1.5	26	1.02	24.5	0.96	18	--
M30 X 2	30	1.18	28	1.11	22	20
M36 X 2	36	1.41	34	1.34	28	25
M42 X 2	42	1.65	40	1.57	--	30
M45 X 2	45	1.77	43	1.70	35	--
M52 X 2	52	2.04	50	1.97	42	38

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## JIS 30° Flare with Parallel Pipe Threads



## Japanese Komatsu 30° Flare with Metric Threads



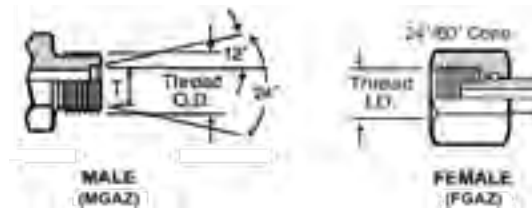
This Japanese connector is similar to the American 37° JIC flare except for the 30° seat angle. The straight (parallel) pipe threads are the same as BSPP.

Used extensively on Komatsu equipment, this 30° flare connector has parallel metric threads and is sometimes confused with JIS 30° flare which has parallel pipe threads.

Dash Size	Inch Size	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-2	1/8	1/8 -28	9.5	0.37	8.7	0.34
-4	1/4	1/4 -19	13.5	0.53	11.1	0.44
-6	3/8	3/8 -19	16.7	0.66	15.1	0.59
-8	1/2	1/2 -14	20.6	0.81	19.1	0.75
-10	5/8	5/8 -14	23.1	0.91	20.6	0.81
-12	3/4	3/4 -14	26.2	1.03	23.8	0.94
-16	1	1 -11	33.3	1.31	30.2	1.19
-20	1 1/4	1 1/4 -11	42.2	1.66	38.9	1.53
-24	1 1/2	1 1/2 -11	47.8	1.88	45.2	1.78
-32	2	2	59.7	2.35	56.4	2.22

Dash Size	Metric Size Equiv.	Thread	Male Thread OD		Female Thread ID	
			mm	in	mm	in
-6	9	M18 X 1.5	18	0.71	16.5	0.65
-8	12	M22 X 1.5	22	0.87	20.5	0.82
-10	16	M24 X 1.5	24	0.94	22.5	0.88
-12	19	M30 X 1.5	30	1.18	28.5	1.12
-16	25	M33 X 1.5	33	1.30	31.5	1.24
-20	32	M36 X 1.5	36	1.42	34.5	1.36
-24	38	M42 X 1.5	42	1.65	40.5	1.59

## French Metric GAZ with 24° Flare



This metric connection consists of a male and two female styles, both of which seal on the 24° flare. These connections are generally found only on French made equipment.

Dash Size	Thread	Male Thread OD		Female Thread ID		Tube OD	
		mm	in	mm	in	mm	in
-6	M20 X 1.5	20	0.78	18.5	0.73	13.75	0.52
-8	M24 X 1.5	24	0.94	22.5	0.88	16.75	0.66
-10	M30 X 1.5	30	1.18	28.5	1.12	21.25	0.84
-12	M36 X 1.5	36	1.41	34.5	1.36	26.75	1.05
-16	M45 X 1.5	45	1.77	43.5	1.71	33.50	1.32

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



## TORQUE VALUES

### JIC 37° - SAE J514

Dash Size	Thread	ft - lb	Nm
-4	<b>7/16-20</b>	11-13	15-17
-5	<b>1/2-20</b>	14-16	19-22
-6	<b>9/16-18</b>	20-22	27-30
-8	<b>3/4-16</b>	37-45	50-61
-10	<b>7/8-14</b>	50-58	68-79
-12	<b>1 1/16-12</b>	79-88	107-119
-14	<b>1 3/16-12</b>	94-103	128-140
-16	<b>1 5/16-12</b>	117-125	158-170
-20	<b>1 5/8-12</b>	126-150	172-200
-24	<b>1 7/8-12</b>	158-180	215-240
-32	<b>2 1/2-12</b>	250-283	339-384

### NPTF (Tapered)

Dash Size	Thread	ft - lb	Nm
-2	<b>1/2</b>	20	25
-4	<b>1/4</b>	25	35
-6	<b>0</b>	35	45
-8	<b>1/2</b>	45	60
-12	<b>3/4</b>	55	75
-16	<b>1</b>	65	90
-20	<b>1 1/4</b>	80	110
-24	<b>1 1/2</b>	95	130
-32	<b>2</b>	120	160

### Code 61 Flange - SAE J518

Dash Size	Thread	ft - lb	Nm
-8	<b>1/2</b>	15-19	20-25
-12	<b>3/4</b>	21-29	28-40
-16	<b>1</b>	27-35	37-48
-20	<b>1 1/4</b>	35-46	48-62
-24	<b>1 1/2</b>	46-58	62-79
-32	<b>2</b>	54-66	73-90
-40	<b>2 1/2</b>	79-91	107-124
-48	<b>3</b>	137-149	186-203

### O-Ring Face Seal - SAE J1453

Dash Size	Thread	ft - lb	Nm
-4	<b>9/16-18</b>	10-12	14-16
-6	<b>1 1/16-16</b>	18-20	24-27
-8	<b>1 3/16-16</b>	32-35	43-47
-10	<b>1-14</b>	46-50	62-68
-12	<b>1 3/16-12</b>	65-70	88-95
-16	<b>1 7/16-12</b>	92-100	125-136
-20	<b>1 11/16-12</b>	125-140	170-190
-24	<b>2 1/2</b>	150-165	204-224

### O-Ring Boss Straight - SAE J514

Dash Size	Thread	ft - lb	Nm
-3	<b>3/8-24</b>	8-9	12-13
-4	<b>7/16-20</b>	13-15	18-20
-5	<b>1/2-20</b>	14-15	19-21
-6	<b>9/16-18</b>	23-24	32-33
-8	<b>3/4-16</b>	40-43	55-57
-10	<b>7/8-14</b>	43-48	59-64
-12	<b>1 1/16-12</b>	68-75	93-101
-14	<b>1 3/16-12</b>	83-90	113-122
-16	<b>1 5/16-12</b>	112-123	152-166
-20	<b>1 5/8-12</b>	146-161	198-218
-24	<b>1 7/8-12</b>	154-170	209-230
-32	<b>2 1/2-12</b>	218-240	296-325

### Code 62 Flange - SAE J518

Dash Size	Thread	ft - lb	Nm
-8	<b>1/2</b>	15-19	20-25
-12	<b>3/4</b>	25-33	34-45
-16	<b>1</b>	42-50	56-68
-20	<b>1 1/4</b>	62-75	85-102
-24	<b>1 1/2</b>	116-133	158-181
-32	<b>2</b>	199-216	271-294



## TORQUE VALUES

### BSPP (no O-Ring)

Dash Size	Thread	ft - lb	Nm
-2	<b>1/8-28</b>	7	10
-4	<b>1/4-19</b>	15	20
-6	<b>3/8-19</b>	26	35
-8	<b>1/2-14</b>	44	60
-10	<b>5/8-14</b>	52	70
-12	<b>3/4-14</b>	85	115
-16	<b>1-11</b>	103	140
-20	<b>1 1/4-11</b>	155	210
-24	<b>1 1/2-11</b>	214	290
-32	<b>2-11</b>	295	400

### BSPP (with O-Ring)

Dash Size	Thread	ft - lb	Nm
-2	<b>1/8-28</b>	11	15
-4	<b>1/4-19</b>	15	20
-6	<b>3/8-19</b>	26	35
-8	<b>1/2-14</b>	37	50
-10	<b>5/8-14</b>	44	60
-12	<b>3/4-14</b>	63	85
-16	<b>1-11</b>	85	115
-20	<b>1 1/4-11</b>	140	190
-24	<b>1 1/2-11</b>	177	240
-32	<b>2-11</b>	221	300

### Metric

Thread	Dash	ft - lb	Nm
M10 x 1.0	10	14	19
M12 x 1.5	12	17	23
M14 x 1.5	14	19	26
M16 x 1.5	16	22	30
M18 x 1.5	18	30	41
M20 x 1.5	20	39	53
M22 x 1.5	22	56	76
M24 x 1.5	24	65	88
M26 x 1.5	26	78	106
M30 x 2.0	30	86	116
M36 x 2.0	36	98	133
M42 x 2.0	42	111	151
M45 x 2.0	45	128	173
M52 x 2.0	52	149	202

### JIS 60° - B8363

Dash Size	Thread	ft - lb	Nm
-4	<b>1/4-19</b>	19	25
-6	<b>3/8-19</b>	25	34
-8	<b>1/2-14</b>	49	64
-10	<b>5/8-14</b>	63	85
-12	<b>3/4-14</b>	100	132
-16	<b>1-11</b>	149	196
-20	<b>1 1/4-11</b>	171	225
-24	<b>1 1/2-11</b>	194	255
-32	<b>2-11</b>	240	316

### Notes:

1. The torque values obtained from tightening pipe threads can vary considerably depending on thread condition. Adequate sealing can occur at values much lower than the maximum values listed above. Only enough torque to achieve adequate sealing should be used.
2. When using a male tapered pipe thread with a female straight or parallel pipe thread, maximum values are 50% of those listed in the table.
3. If thread sealant is used, maximum values shown should be decreased by 25%.

## HOSE ID SELECTION NOMOGRAPH

The following table represents the maximum flow rate in gallons per minute (GPM) by hose ID for pressure lines and suction lines. The recommended maximum fluid velocity for pressure system is 15 feet per second (FPS).

Hose ID	Recommended Maximum Flow (GPM) Pressure Lines	Recommended Maximum Flow (GPM) Suction Lines
	in	in
$\frac{3}{16}$	1.29	0.35
$\frac{1}{4}$	2.30	0.61
$\frac{5}{16}$	3.59	0.96
$\frac{3}{8}$	5.16	1.38
$1\frac{3}{32}$	6.06	16.20
$\frac{1}{2}$	9.18	2.45
$\frac{5}{8}$	14.35	3.83
$\frac{3}{4}$	20.66	5.51
$\frac{7}{8}$	28.12	7.50
<b>1</b>	36.72	9.79
<b>1<math>\frac{1}{8}</math></b>	46.48	12.39
<b>1<math>\frac{1}{4}</math></b>	57.38	15.30
<b>1<math>\frac{3}{8}</math></b>	69.43	18.51
<b>1<math>\frac{1}{2}</math></b>	82.63	22.03
<b>1<math>\frac{13}{16}</math></b>	120.64	32.17
<b>2</b>	146.89	39.17



Thread	Maximum Working Pressure (PSI)							
	Dash Size							
	-2	-3	-4	-5	-6	-8	-10	-12
NPTF MALE SAE J514	1/8"-27 <b>7,000</b>		1/4"-18 <b>6,500</b>		3/8"-18 <b>6,000</b>	1/2"-14 <b>5,000</b>		3/4"-14 <b>4,000</b>
NPSM FEMALE SAE J514	1/8"-27 <b>5,000</b>		1/4"-18 <b>6,000</b>		3/8"-18 <b>6,000</b>	1/2"-14 <b>5,000</b>		3/4"-14 <b>4,000</b>
JIC 37° Crimp nut ISO 8434-2 / SAE J514	5/16"-24 <b>6,000</b>	3/8"-24 <b>6,000</b>	7/16"-20 <b>6,000</b>	1/2"-20 <b>6,000</b>	9/16"-18 <b>5,000</b>	3/4"-16 <b>5,000</b>	7/8"-14 <b>5,000</b>	1.1/16"-12 <b>5,000</b>
JIC 37° Solid Nut ISO 8434-2 / SAE J514								1.1/16"-12 <b>6,000</b>
ORFS ISO 8434-3 / SAE J1453			9/16"-18 <b>6,500</b>		11/16"-16 <b>6,500</b>	13/16"-16 <b>6,000</b>	1"-14 <b>6,000</b>	1.3/16"-12 <b>6,000</b>
CODE 61 FLANGE ISO 6162-1 / SAE J518						1/2" <b>5,000</b>	5/8" <b>5,000</b>	3/4" <b>5,000</b>
CODE 62 FLANGE ISO 6162-2 / SAE J518						1/2" <b>6,090</b>		3/4" <b>6,000</b>
CAT FLANGE ISO 6162-2 / SAE J518								3/4" <b>6,000</b>
O-RING BOSS (SAE) SAE J516 / ISO 11926			1/4"-19 <b>5,000</b>		3/8"-19 <b>5,000</b>	1/2"-14 <b>5,000</b>		3/4"-14 <b>4,000</b>
SAE 45° SAE J512			7/16"-20 <b>3,500</b>	1/2"-20 <b>3,500</b>	5/8"-18 <b>3,500</b>	3/4"-16 <b>3,500</b>	7/8"-14 <b>3,000</b>	1.1/16"-14 <b>2,500</b>
SAE Inverted Flare SAE J512		3/8"-24 <b>3,000</b>	7/16"-20 <b>2,750</b>	1/2"-20 <b>2,500</b>	5/8"-18 2,250	3/4"-16 <b>2,250</b>	7/8"-14 <b>2,000</b>	
Flareless SAE J514	5/16"-24 <b>5,000</b>	3/8"-24 <b>5,000</b>	7/16"-20 <b>5,000</b>	1/2"-20 <b>5,000</b>	9/16"-18 <b>5,000</b>	3/4"-16 <b>4,500</b>	7/8"-14 <b>3,500</b>	1.1/16"-12 <b>3,500</b>
BSP 60° Crimp Nut BS5200 / ISO 8434-6	1/8"- 28 <b>5,075</b>		1/4"-19 <b>7,000</b>		3/8"-19 <b>6,500</b>	1/2"-14 <b>6,200</b>	5/8"-14 <b>5,000</b>	3/4"-14 <b>5,000</b>
BSP 60° Solid Nut BS5200 / ISO 8434-6								3/4"-14 <b>6,000</b>
DKOL 24° - Light ISO 8434-1 / DIN 3865	M10X1.5 <b>6,000</b>	M12X1.5 <b>6,000</b>	M14X1.5 <b>5,800</b>	M16X1.5 <b>5,000</b>	M18X1.5 <b>4,800</b>	M22X1.5 <b>4,000</b>	M26X1.5 <b>3,625</b>	M30X2 <b>3,100</b>
DKOS 24° - Heavy ISO 8434-1 / DIN 3865			M16X1.5 <b>9,000</b>	M18X1.5 <b>7,000</b>	M20X1.5 <b>7,000</b>	M20X1.5 <b>7,000</b>	M24X1.5 <b>6,000</b>	M30X2 <b>6,000</b>
DKM 60° DIN 20066			M14X1.5 <b>5,800</b>	M16X1.5 <b>4,000</b>	M18X1.5 <b>4,000</b>	M22X1.5 <b>4,000</b>	M26X1.5 <b>3,000</b>	
FRENCH GAZ					M20X1.5 <b>5,000</b>	M24X1.5 <b>4,800</b>	M30X1.5 <b>4,000</b>	M36X1.5 <b>4,000</b>
JIS METRIC 60° (KOMATSU) JIS B8363					M20X1.5 <b>9,135</b>	M24X1.5 <b>9,135</b>	M30X1.5 <b>6,090</b>	M36X1.5 <b>6,090</b>
JIS BSP 60° (TOYOTA) IS B8363			M14X1.5 <b>5,075</b>	M16X1.5 <b>5,075</b>	M18X1.5 <b>5,075</b>	M22X1.5 <b>5,075</b>	M24X1.5 <b>4,060</b>	M30X1.5 <b>4,060</b>
BSP BANJO	1/8"-19 <b>4,000</b>		1/4"-19 <b>4,000</b>	3/8"-19 <b>4,000</b>	3/8"-19 <b>3,600</b>	1/2"-14 <b>3,600</b>	5/8"-14 <b>3,000</b>	3/4"-14 <b>3,000</b>
METRIC BANJO DIN 7642			M12X1.5 <b>3,045</b>	M14X1.5 <b>3,000</b>	M16X1.5 <b>3,000</b>	M22X1.5 <b>3,000</b>	M22X1.5 <b>3,000</b>	M26X1.5 <b>3,000</b>
Pressure Wash					M22X1.5 <b>6,000</b>			

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.



Thread	Maximum Working Pressure (PSI)							
	Dash Size							
	-16	-20	-24	-32	-40	-48	-56	-64
NPTF MALE SAE J514	1"-11.5 <b>4,000</b>	1.1/4"-11.5 <b>3,000</b>	1.1/2"-11.5 <b>2,700</b>	2"-11.5 <b>2,600</b>				
NPSM FEMALE SAE J514	1"-11.5 <b>3,000</b>	1.1/4"-11.5 <b>2,500</b>	1.1/2"-11.5 <b>2,000</b>	2"-11.5 <b>2,000</b>				
JIC 37° Crimp nut ISO 8434-2 / SAE J514	1.5/16"-12 <b>4,000</b>	1.5/8"-12 <b>3,000</b>	1.7/8"-12 <b>2,300</b>	2.1/2"-12 <b>1,800</b>				
JIC 37° Solid Nut ISO 8434-2 / SAE J514	1.5/16"-12 <b>5,500</b>	1.5/8"-12 <b>4,600</b>	1.7/8"-12 <b>4,100</b>	2.1/2"-12 <b>3,600</b>				
ORFS ISO 8434-3 / SAE J1453	1.7/16"-12 <b>6,000</b>	1.11/16"-12 <b>4,500</b>	2"-12 <b>4,200</b>					
CODE 61 FLANGE ISO 6162-1 / SAE J518	1" <b>5,000</b>	1-1/4" <b>4,000</b>	1-1/2" <b>3,000</b>	2" <b>3,000</b>	2-1/2" <b>2,750</b>	3" <b>2,000</b>	3-1/2" <b>500</b>	4" <b>500</b>
CODE 62 FLANGE ISO 6162-2 / SAE J518	1" <b>6,000</b>	1-1/4" <b>6,000</b>	1-1/2" <b>6,000</b>	2" <b>6,000</b>				
CAT FLANGE ISO 6162-2 / SAE J518	1" <b>6,000</b>	1-1/4" <b>6,000</b>	1-1/2" <b>6,000</b>	2" <b>6,000</b>				
O-RING BOSS (SAE) SAE J516 / ISO 11926	1"-11 <b>4,000</b>	1.1/4"-11 <b>3,000</b>	1.1/2"-11 <b>2,500</b>	2"-11 <b>2,000</b>				
SAE 45° SAE J512	1.3/8"-12 <b>2,500</b>							
SAE Inverted Flare SAE J512								
Flareless SAE J514	1.5/16"-12 <b>3,000</b>							
BSP 60° Crimp Nut BS5200 / ISO 8434-6	1"-11 <b>5,000</b>	1.1/4"-11 <b>4,000</b>	1.1/2"-11 <b>2,700</b>	2"-11 <b>2,500</b>	2.1/2"-11 <b>2,000</b>	3"-11 <b>1,500</b>		
BSP 60° Solid Nut BS5200 / ISO 8434-6	1"-11 <b>6,000</b>	1.1/4"-11 <b>5,000</b>	1.1/2"-11 <b>5,000</b>					
DKOL 24° - Light ISO 8434-1 / DIN 3865	M36X2 <b>2,400</b>	M45X2 <b>1,800</b>	M52X2 <b>1,450</b>					
DKOS 24° - Heavy ISO 8434-1 / DIN 3865	M36X2 <b>6,000</b>	M42X2 <b>5,500</b>	M52X2 <b>4,700</b>					
DKM 60° DIN 20066								
FRENCH GAZ	M45X1.5 <b>3,000</b>							
JIS METRIC 60° (KOMATSU) JIS B8363	M45X1.5 <b>6,090</b>							
JIS BSP 60° (TOYOTA) JIS B8363	M33X1.5 <b>4,060</b>	M36X1.5 <b>2,538</b>	M42X2 <b>1,522</b>					
BSP BANJO	1"-11 <b>2,400</b>							
METRIC BANJO DIN 7642	M30X1.5 <b>3,000</b>							
Pressure Wash								

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT NOTICE.

## HOSE SIZE CONVERSION CHART

Hose ID	Standard Hydraulic Hose		SAE 100 R5 Hose	
	in	DIN	in	DIN
-02	1/8	3	-	-
-03	3/16	5	-	-
-04	1/4	6	3/16	5
-05	5/16	8	1/4	6
-06	3/8	10	5/16	8
-08	1/2	12	13/32	10
-10	5/8	16	1/2	12
-12	3/4	19	5/8	16
-16	1	25	7/8	22
-20	1 1/4	31	1 1/8	29
-24	1 1/2	38	1 3/8	35
-32	2	51	1 13/16	46
-40	2 1/2	63	2 3/8	60
-48	3	76	-	-
-56	3 1/2	89	-	-
-64	4	102	-	-

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