

Table of Contents

Quality	2
Threads	3
Hose & Coupling Compatibility	4
SAE 100R1, SAE 100R2	5
SAE 100R16, SAE 100R17	6
SAE 100R12, 4SH	7
SAE 100R13, SAE 100R4	8
Jack Hose, SAE 100R5	9
SAE 100R14, Barrier Refrigerant Hose	10
Part Number System	11
MP, MPX, FPX, FP	12
MB, MBX, MBX90, MPX90	13
FJX, MJ	14
MF, FJX90, FJX45	15
FJX90L, FFX, FFX90, FFX45	16
FFX90L, MIX, MIX45, MIX90	17
MT, KAR, FSX, MS, FSX90	18
FSX45, C61, MW, FW, SHELL	19
Metric Hose Couplings	20-24
R2 Reusable Couplings	24
Spiral Hose Couplings	25-31
JJ R13 Hose Couplings	32-34
Plug-In Instructions	35
Plug-In Parts	36
Thread Identification Guide	37
O-Rings, Flange Kits	38
Hose Guard Products	39
Teflon Couplings	39-41
R5 Couplings	42-43
Beadlock Couplings	44-45
SAE Specifications	46
Crimp Specifications.....	47
Flow and Velocity	48
Swagers	49
Couplings Cross Reference	50



O'Brien Brass utilizes a variety of planning and process monitoring tools to provide quality products: advanced quality planning meetings, process flow diagrams, X Bar & R charting, histograms, and capability studies.

Ongoing audits ensure compliance to the company's quality policy, quality manual, quality assurance procedures, and ISO certified quality management systems.

O'Brien Brass maintains a gage inventory of several thousand gages, ranging from cylindrical plug gages, thread gages, and micrometers to optical comparators and computer gage systems.

Gages used for product acceptance are tracked for calibration frequency and compliance through a computerized gage control system that provides for a positive recall of any gage requiring calibration. Calibrations are traceable to NIST Standards.



PIPE THREADS

There are several variations of pipe threads. Thread forms include the Dryseal American Standard Taper Pipe Thread (NPTF), the National Pipe Straight Threads for Mechanical Joints (NPSM) and the dryseal American Fuel Internal Straight Pipe Thread (NPSF). Each series is normally identified by the abbreviated letter designation.

The NPTF thread is recommended for hydraulic service. This thread series is used on both male and female ends and forms a seal by the interference fit at the root and crest of the mating threads. The NPTF male also has an internal chamfer of 30° which allows it to seal at the seat with female NPSM pipe swivels.

The NPSM is a straight pipe thread and sealing is obtained by the mating of the 30° seats of the male and female ends.

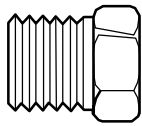
SAE THREADS

37° Flared Fittings (JIC): JIC (Joint Industry Conference) seals are obtained by the mating of two beveled metal surfaces. The function of the threads is simply to draw these two surfaces together. This style is used particularly in high pressure systems. As illustrated below, both the bevel on the male and the seat in the female are machined to 37°.

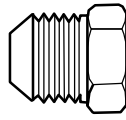
45° Flared Fittings (SAE): SAE flared fittings seal in the same manner as described for JIC, however the mating surfaces are machined at 45°. These couplings are usually used for low pressure applications such as refrigerant and fuel lines in conjunction with copper tubing which flares easily to 45°.

O-Ring Boss – Straight Thread: The O-ring Boss fitting is a modification of the male JIC where the beveled 37° nose has been removed and a groove has been machined between the threads and the hex in which an O-ring is seated. The female is a port which has been tapped to the proper straight thread size and chamfered at the port face to provide an O-ring seat. The seal is made when the O-ring is trapped between port chamfer, thread under-cut, and the male.

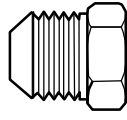
O-Ring Face Seal (OFS): The O-ring Face Seal uses an O-ring (SAE J515) in a groove on the male face side. This is mated to flat face without an O-ring on the female swivel side, forming a seal without metal deformation much the same as an SAE four bolt split flange connection without the bolts. The O-ring face seal connection has been tested to SAE J343 tests and procedures and meets or exceeds SAE J1453 specifications. This connector has proven its superiority in leak resistance, ease of installation, high operating pressure, increased torque tolerance and reusability with regard to its ability to be connected and disconnected frequently.



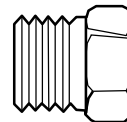
NPTF



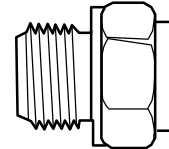
37° FLARE



45° FLARE



O-RING BOSS



O-RING
FACE SEAL

-2	1/ "	1/ - 27	/ - 24	/ - 24	/ - 24	*
-3	3/ "	*	3/ - 24	3/ - 24	3/ - 24	*
-4	1/ "	1/ - 18	/ - 20	/ - 20	/ - 20	/ - 18
-5	/ "	*	1/ - 20	1/ - 20	1/ - 20	*
-6	3/ "	3/ - 18	/ - 18	/ - 18	/ - 18	11/ - 16
-7	*	*	*	11/ - 16	*	*
-8	1/ "	1/ - 14	3/ - 16	3/ - 16	3/ - 16	13/ - 16
-10	/ "	*	/ - 14	/ - 14	/ - 14	1 - 14
-12	3/ "	3/ - 14	11/ - 12	11/ - 14	11/ - 12	13/ - 12
-14	/ "	*	13/ - 12	11/ - 12	13/ - 12	*
-16	1"	1 - 111/	1/ - 12	13/ - 12	1/ - 12	1/ - 12
-20	11/ "	11/ - 111/	1/ - 12	*	1/ - 12	111/ - 12
-24	11/ "	11/ - 111/	1/ - 12	*	1/ - 12	2 - 12
-32	2"	2 - 111/	21/ - 12	*	21/ - 12	*

HYDRAULIC HOSE AND FITTING COMPATIBILITY

There are a number of SAE Standards that cover the performance requirements of hydraulic hose assemblies. Included are the J517, J516, and J343 Standards.

Hydraulic hoses that are claimed to meet SAE J517 standards (e.g. SAE 100R1 and SAE 100R2) obviously need to be designed for, and certified to, the criteria defined by SAE. That criteria includes stringent dimensional tolerances (inside, outside, and braid diameters), compound and reinforcement types, length changes, cold flexibility, and ozone and heat resistance. There are also burst pressure and impulse requirements in J517. Those requirements are for coupled assemblies, and SAE states that “the general and dimensional standards for hydraulic hose fittings are obtained in SAE J526.”

Hydraulic hose fittings that meet SAE J516 Standards are similarly well defined by SAE as to material type, dimensions, finish, etc. The SAE manual also specifically states that J516 fittings are intended to be used “in conjunction with hydraulic hoses specified in SAE J517, and utilized in hydraulic systems on mobile and stationary equipment.”

SAE J343 is the standard that establishes “uniform methods of the testing and performance evaluation of the SAE 100R series of hydraulic hose and hose assemblies.” Coupled assemblies are expected to meet or exceed SAE performance if the SAE criteria described above are met.

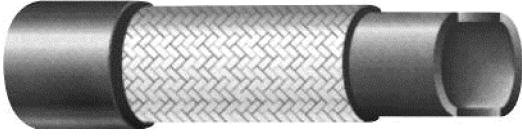
The integrity of any hose assembly depends upon the components, fittings, and hose meeting the rigorous SAE requirements, and then the components being assembled by skilled personnel. This is true regardless of where the components are manufactured. Testing has been completed on O’Brien Brass fittings coupled to Semperit hydraulic hose, and the tested assemblies have passed SAE performance criteria.

While there has been an integration of hose and fitting manufacturers, independent hose and fitting manufacturers can and will continue to produce top class products that will provide excellent assemblies just as they have done for decades.

SAE 100R1 / SAE 100R2

HYDRAULIC HOSES

SAE 100R1 AT HYDRAULIC HOSE



Recommended for: Medium pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R1AT.

Tube: Black, oil resistant, Nitrile (BTR).

Reinforcement: One braid of higher tensile steel wire

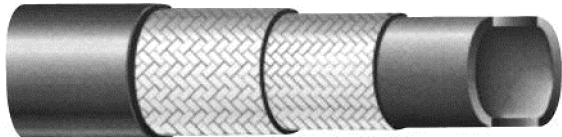
Cover: Black, oil and abrasion resistant Neoprene (CR).

Temperature range: -40°F to +212°F

No skiving required

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R1-04 Reel	1/4	0.53	2,750	11,000	4
R1-06 Reel	3/8	0.69	2,250	9,000	5
R1-08 Reel	1/2	0.81	2,000	8,000	7
R1-10 Reel	5/8	0.93	1,500	6,000	8
R1-12 Reel	3/4	1.09	1,250	5,000	9.5
R1-16 Reel	1	1.40	1,000	4,000	12

SAE 100R2 AT HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R2AT.

Tube: Black, oil resistant, Nitrile (BTR).

Reinforcement: Two braid of high tensile steel wire

Cover: Black, oil and abrasion resistant Neoprene (CR).

Temperature range: -40°F to +212°F

No skiving required

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R2-04 Reel	1/4	0.59	5,000	20,000	4
R2-06 Reel	3/8	0.75	4,000	16,000	5
R2-08 Reel	1/2	0.87	3,500	14,000	7
R2-10 Reel	5/8	1.00	2,750	11,000	8
R2-12 Reel	3/4	1.15	2,250	9,000	9.5
R2-16 Reel	1	1.5	2,000	8,000	12
R2-20	1 1/4	1.90	1,625	6,500	16.5

Suitable for hydraulic fluids on mineral oil and synthetic oil basis (HL, HLP, HLPD, HVLP), for oil-water-emulsions (HFAE, HFAS, HFB) and water-glycol liquids (HFC), for vegetable and mineral oil based lubricants, cooling water and compressed air.

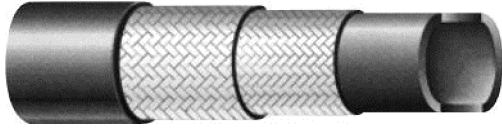
Not suitable for hydraulic fluids on phosphate ester basis (HFD).

Also, generally suitable for biologically degradable hydraulic liquids (HETG, HEPG, HEES) however limited by fluid additives.

SAE 100R16 / SAE 100R17

HYDRAULIC HOSES

SAE 100R16 HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R16.

Tube: Black, oil resistant, Nitrile (BTR).

Reinforcement: Two braids of higher tensile steel wire

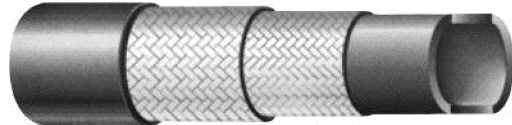
Cover: Black, oil and abrasion resistant Neoprene (CR).

Temperature range: -40°F to +212°F

No skiving required

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R16-04 Reel	1/4	0.56	5,000	20,000	2
R16-06 Reel	3/8	0.74	4,000	16,000	2.5
R16-08 Reel	1/2	0.86	3,500	14,000	3.5
R16-10 Reel	5/8	1.00	2,750	11,000	4
R16-12 Reel	3/4	1.14	2,250	9,000	4.8
R16-16 Reel	1	1.44	2,000	4,000	6

SAE 100R17 HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R2AT.

Tube: Black, oil resistant, Nitrile (BTR).

Reinforcement: One or Two braid of high tensile steel wire

Cover: Black, oil and abrasion resistant Neoprene (CR).

Temperature range: -40°F to +212°F

No skiving required

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R17-04 Reel	1/4	0.49	3,000	12,000	2
R17-06 Reel	3/8	0.65	3,000	12,000	2.5
R17-08 Reel	1/2	0.77	3,000	12,000	3.5
R17-10 Reel*	5/8	0.94	3,000	12,000	4
R17-12 Reel*	3/4	1.10	3,000	12,000	4.8
R17-16 Reel*	1	1.43	3,000	12,000	6

* Two high tensile steel wire braids

Suitable for hydraulic fluids on mineral oil and synthetic oil basis (HL, HLP, HLPD, HVLP), for oil-water-emulsions (HFAE, HFAS, HFB) and water-glycol liquids (HFC), for vegetable and mineral oil based lubricants, cooling water and compressed air.

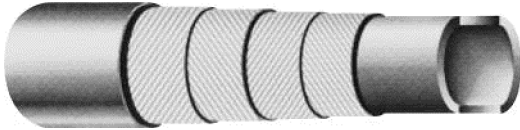
Not suitable for hydraulic fluids on phosphate ester basis (HFD).

Generally also suitable for biologically degradable hydraulic liquids (HETG, HEPG, HEES) however limited by fluid additives.

SAE 100R12 / 4 SH

HYDRAULIC HOSES

SAE 100R12 HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R12.

Tube: Black, oil resistant, synthetic rubber.

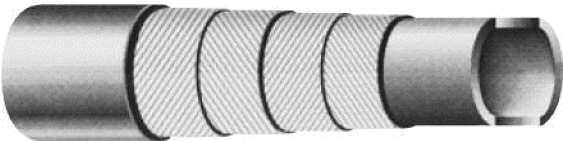
Reinforcement: Four spiraled layers of higher tensile steel wire

Cover: Gray, oil and abrasion resistant synthetic rubber.

Temperature range: -40°F to +250°F

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R12-06	3/8	0.80	4,000	16,000	5
R12-08	1/2	0.94	4,000	16,000	7
R12-12	3/4	1.21	4,000	16,000	9.5
R12-16	1	1.5	4,000	16,000	12
R12-20	1 1/4	1.85	3,000	12,000	16.5
R12-24	1 1/2	2.11	2,500	10,000	20
R12-32	2	2.63	2,500	10,000	25

4 SH HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of DIN 20023.

Tube: Black, oil resistant, synthetic rubber.

Reinforcement: Four spiraled layers of higher tensile steel wire

Cover: Black, oil and abrasion resistant synthetic rubber.

Temperature range: -40°F to +250°F

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
4SH-12	3/4	1.27	6,095	24,380	9.5
4SH-16	1	1.52	5,515	22,060	12
4SH-20	1 1/4	1.79	5,000	20,000	16.5
4SH-24	1 1/2	2.11	4,200	16,800	20
4SH-32	2	2.68	3,625	14,500	25

Not suitable for hydraulic fluids on phosphate ester basis (HFD).

Also, generally suitable for biologically degradable hydraulic liquids (HETG, HEPG, HEES) however limited by fluid additives.

SAE 100R13 / SAE 100R4

SAE 100R13 HYDRAULIC HOSE



Recommended for: High pressure hydraulic oil lines. Meets or exceeds requirements of SAE 100R13.

Tube: Black, oil resistant, synthetic rubber.

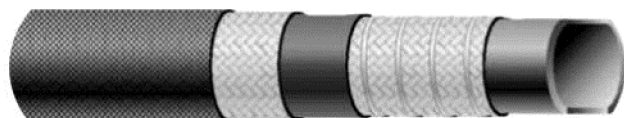
Reinforcement: up to 1" Four, From 1 1/4" up Six spiraled layers of higher tensile steel wire

Cover: Black, oil and abrasion resistant Synthetic Rubber.

Temperature range: -40°F to +250°F

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R13-12	3/4	1.26	5,000	20,000	9.5
R13-16	1	1.54	5,000	20,000	12
R13-20	1 1/4	1.96	5,000	20,000	16.5
R13-24	1 1/2	2.26	5,000	20,000	20
R13-32	2	2.83	5,000	20,000	25

SAE 100R4 SUCTION HOSE



Recommended for: Meets or exceeds requirements of SAE 100R4.

Tube: Black, oil resistant, synthetic rubber.

Reinforcement: Textile Reinforcement with Helix wire

Cover: Black, oil and abrasion resistant synthetic rubber.

Temperature range: -40°F to +250°F

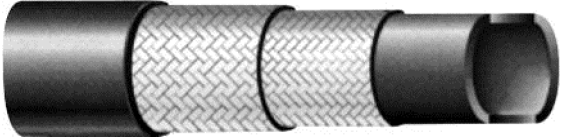
Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R4-12	3/4	1.32	300	1,200	5
R4-16	1	1.48	250	1,000	6
R4-20	1 1/4	1.77	200	800	8
R4-24	1 1/2	2.05	150	600	10
R4-32	2	2.5	100	400	12

Not suitable for hydraulic fluids on phosphate ester basis (HFD).

Generally also suitable for biologically degradable hydraulic liquids (HETG, HEPG, HEES) however limited by fluid additives.

JACK HOSE | SAE 100R5

JACK HOSE



Recommended for: High pressure Jack oil lines.

Tube: Black, oil resistant, Nitrile (BTR)

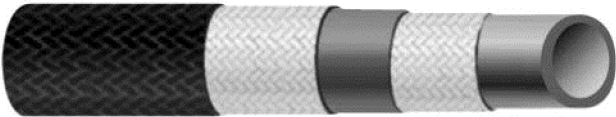
Reinforcement: Two braids of higher tensile steel wire

Cover: Black, oil and abrasion resistant Neoprene (CR).

Temperature range: -40°F to +212°F

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R16-04	1/4	0.55	10,000	20,000	2
R16-06	3/8	0.67	10,000	20,000	2.5

SAE 100R5



Recommended for: Medium pressure hydraulic oil lines, other air, water, and oil service.

Tube: Black, synthetic rubber.

Reinforcement: Textile inner braid and a braid of higher tensile steel wire

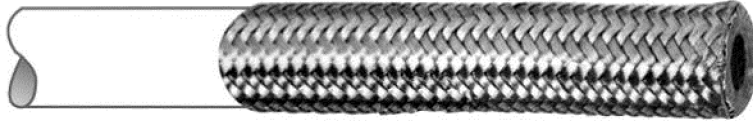
Cover: Black, oil resistant textile braid.

Temperature range: -40°F to +250°F (intermittent 300°F)

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R5-04	3/16	0.52	3,000	12,000	3
R5-05	1/4	0.58	3,000	12,000	3.4
R5-06	5/16	0.68	2,250	9,000	4
R5-08	7/16	0.77	2,000	8,000	4.6
R5-10	1/2	0.92	1,750	7,000	5.5
R5-12	5/8	1.08	1,500	6,000	6.5
R5-16	7/8	1.23	800	3,000	7.4
R5-20	1-1/8	1.5	625	2,500	9
R5-24	1-3/8	1.75	500	2,000	10.5
R5-32	1-13/16	2.2	350	1,400	13.3

TEFLON / REFER HOSE

SAE 100 R14 STAINLESS STEEL TEFLON® HOSE



Recommended for: High temperature or corrosive fluids

Tube: White extruded Teflon®

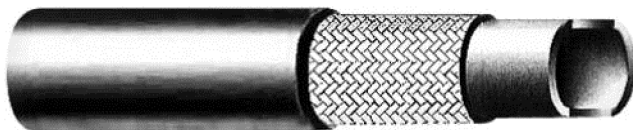
Reinforcement: One braid of high tensile stainless steel wire

Temperature range: -65°F to +450°F

No Skiving required

Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
R115-04	3/16	0.312	3,000	12,000	2
R115-05	1/4	0.375	3,000	12,000	3
R115-06	5/16	0.445	2,500	10,000	4
R115-06T	3/8	0.503	2,250	9,000	4.5
R115-08	7/16	0.549	2,000	8,000	5.2
R115-10	1/2	0.648	1,500	6,000	6.5
R115-12	5/8	0.778	1,200	4,800	7.7
R115-12T	3/4	0.886	1,100	4,400	8.2
R115-16T	1	1.135	900	3,600	10

BARRIER REFRIGERANT HOSE



Recommended for: R12 and R134A Refrigerant Systems.

Tube: Black, oil resistant, Nitrile (BTR) W Nylon Barrier.

Reinforcement: One textile Braid.

Cover: Black, oil and abrasion EPDM

Temperature range: -22°F to +257°F

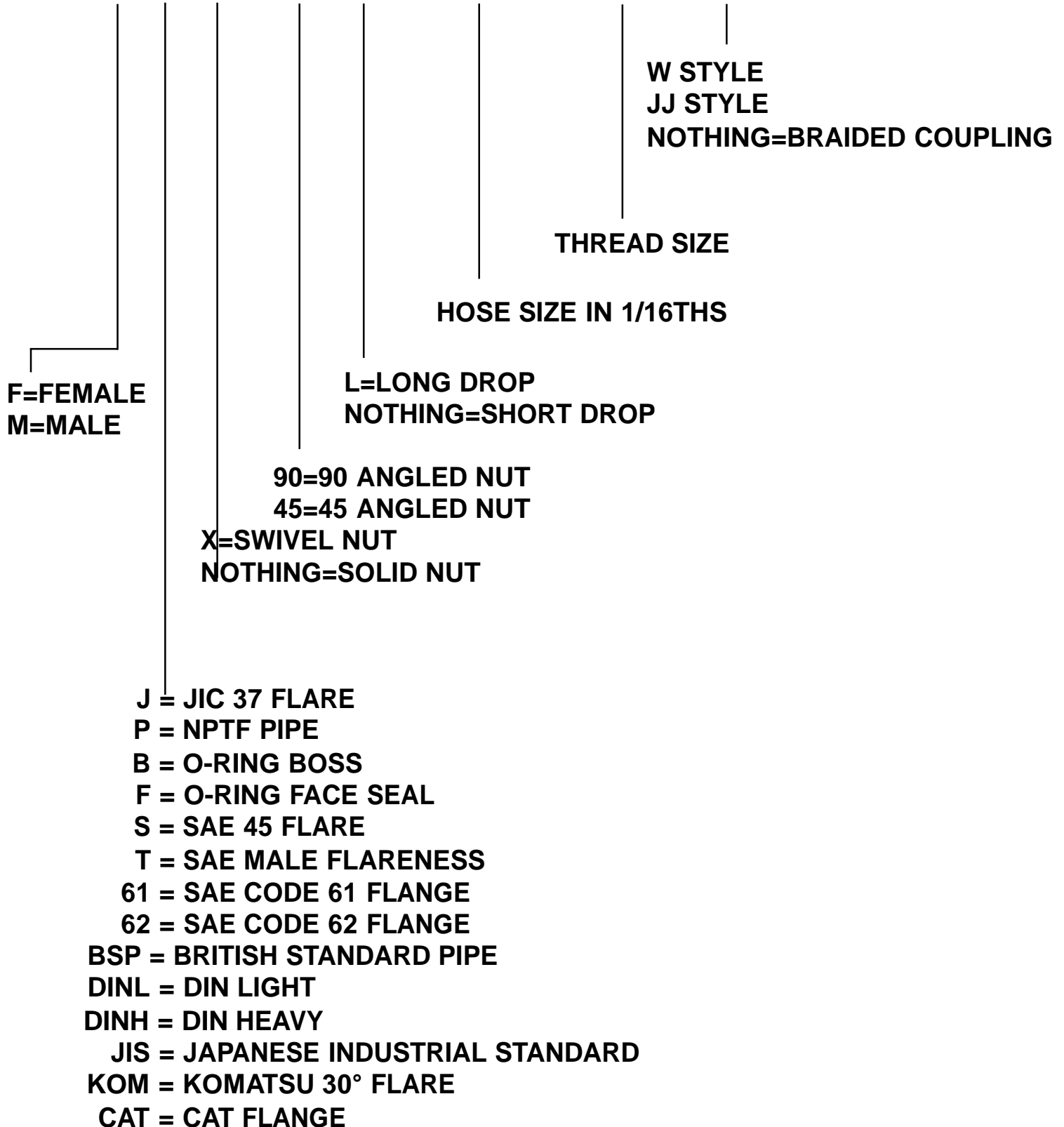
Part Number	Hose I.D. (in.)	Hose O.D. (in.)	Rated W.P. (psi)	Min. Burst (psi)	Min. Bend (in.)
BH-06	5/16	0.75	350	2,000	4
BH-08	13/32	0.91	350	2,000	4.7
BH-10	1/2	1	350	2,000	5.5
BH-12	5/8	1.13	350	1,750	6.5

Not suitable for hydraulic fluids on phosphate ester basis (HFD).

Generally also suitable for biologically degradable hydraulic liquids (HETG, HEPG, HEES) however limited by fluid additives.

PART NUMBER SYSTEM

FJX90L-08-08 W



MP / MPX / FPX / FP

HYDRAULIC HOSE COUPLINGS

MALE PIPE NPTF RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MP-04-02	1/4"	1/8-27	0.25	2.134	0.879	5/8		
	MP-04-04	1/4"	1/4-18	0.25	2.315	1.070	11/16		
	MP-04-06	1/4"	3/8-18	0.25	2.409	1.164	3/4		
	MP-04-08	1/4"	1/2-14	0.25	2.661	1.416	15/16		
	MP-06-04	3/8"	1/4-18	0.375	2.650	1.154	3/4		
	MP-06-06	3/8"	3/8-18	0.375	2.650	1.154	3/4		
	MP-06-08	3/8"	1/2-14	0.375	2.910	1.406	15/16		
	MP-08-06	1/2"	3/8-18	0.5	2.840	1.154	7/8		
	MP-08-08	1/2"	1/2-14	0.5	3.100	1.406	7/8		
	MP-08-12	1/2"	3/4-14	0.5	3.080	1.406	1-1/8		
	MP-10-08	5/8"	1/2-14	0.625	3.286	1.406	1-1/8		
	MP-10-12	5/8"	3/4-14	0.625	3.286	1.406	1-1/8		
	MP-12-08	3/4"	1/2-14	0.75	3.280	1.406	1-1/8		
	MP-12-12	3/4"	3/4-14	0.75	3.290	1.406	1-1/8		
	MP-12-16	3/4"	1-11 1/2	0.75	3.476	1.596	1-3/8		
	MP-16-12	1"	3/4-14	1	3.746	1.466	1-3/8		
MP-16-16	1"	1-11 1/2	1	3.930	1.656	1-3/8			
MP-20-20	1,1/4"	1,1/4-1,1/2	1.25	3.960	1.965	1-3/4			

NPTF MALE PIPE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MPX-04-02	1/4"	1/8-27	0.25	2.671	1.416	5/8	1/2	
	MPX-04-04	1/4"	1/4-18	0.25	2.851	1.596	5/8	11/16	
	MPX-04-06	1/4"	3/8-18	0.25	2.851	1.596	5/8	3/4	
	MPX-06-04	3/8"	1/4-18	0.375	3.156	1.656	3/4	11/16	
	MPX-06-06	3/8"	3/8-18	0.375	3.190	1.690	3/4	3/4	
	MPX-06-08	3/8"	1/2-14	0.375	3.380	1.880	3/4	7/8	
	MPX-08-06	1/2"	3/8-18	0.5	3.417	1.719	7/8	3/4	
	MPX-08-08	1/2"	1/2-14	0.5	3.641	1.943	7/8	15/16	
	MPX-12-12	3/4"	3/4-14	0.75	3.885	2.005	1-1/8	1-1/8	
	MPX-16-16	1"	1-11 1/2	1	4.593	2.313	1-3/8	1-1/2	

NPSM FEMALE PIPE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FPX-04-04	1/4"	1/4-18	0.25	2.349	1.094	5/8	3/4	
	FPX-06-06	3/8"	3/8-18	0.375	2.688	1.188	3/4	7/8	
	FPX-08-08	1/2"	1/2-14	0.5	3.028	1.338	1"	1"	
	FPX-12-12	3/4"	3/4-14	0.75	3.477	1.594	1-1/8	1-1/4	
	FPX-16-16	1"	1-11 1/2	1	3.999	1.719	1-3/8	1-1/2	

NPSM FEMALE PIPE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FP-04-02	1/4"	1/8-27	0.25	2.340	1.320	5/8		
	FP-04-04	1/4"	1/4-18	0.25	2.349	1.094	3/4		
	FP-06-06	3/8"	3/8-18	0.375	2.688	1.188	7/8		
	FP-08-08	1/2"	1/2-14	0.5	3.032	1.344	1-1/16		
	FP-12-12	3/4"	3/4-14	0.75	3.315	1.435	1-1/4		
FP-16-16	1"	1-11 1/2	1	3.965	1.685	1-1/2			

FJX / MJ

HYDRAULIC HOSE COUPLINGS

37° JIC FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FJX-02-03	1/8"	3/8-24	0.125	1.582	0.9	1/2	9/16	
		FJX-03-04	3/16"	7/16-20	0.187	2.185	1.125	9/16	9/16	
		FJX-03-05	3/16"	1/2-20	0.187	2.185	1.125	9/16	3/4	
		FJX-04-03	1/4"	3/8-24	0.25	2.442	1.187	5/8	9/16	
		FJX-04-04	1/4"	7/16-20	0.25	2.505	1.25	5/8	9/16	
		FJX-04-05	1/4"	1/2-20	0.25	2.505	1.25	5/8	3/4	
		FJX-04-06	1/4"	9/16-18	0.25	2.505	1.25	5/8	11/16	
		FJX-04-08	1/4"	3/4-16	0.25	2.63	1.375	3/4	7/8	
		FJX-06-05	3/8"	1/2-20	0.375	2.80	1.25	3/4	3/4	
		FJX-06-06	3/8"	9/16-18	0.375	2.844	1.344	3/4	11/16	
		FJX-06-08	3/8"	3/4-16	0.375	2.844	1.344	3/4	7/8	
		FJX-06-10	3/8"	7/8-14	0.375	3.01	1.5	7/8	1-1/16	
		FJX-08-06	1/2"	9/16-18	0.5	3.032	1.344	7/8	11/16	
		FJX-08-08	1/2"	3/4-16	0.5	3.188	1.5	7/8	7/8	
		FJX-08-10	1/2"	7/8-14	0.5	3.188	1.5	7/8	1-1/16	
		FJX-08-12	1/2"	1 1/16-12	0.5	3.282	1.594	1-1/8	1-1/4	
		FJX-10-08	5/8"	3/4-16	0.625	3.38	1.5	1-1/8	7/8	
		FJX-10-10	5/8"	7/8-14	0.625	3.442	1.562	1-1/8	1-1/16	
		FJX-10-12	5/8"	1 1/16-12	0.625	3.474	1.594	1-1/8	1-1/4	
		FJX-12-08	3/4"	3/4-16	0.75	3.38	1.5	1-1/8	7/8	
	FJX-12-12	3/4"	1 1/16-12	0.75	3.474	1.594	1-1/8	1-1/4		
	FJX-12-14	3/4"	1 3/16-12	0.75	3.536	1.656	1-3/8	1-1/2		
	FJX-12-16	3/4"	1 5/16-12	0.75	3.536	1.656	1-3/8	1-1/2		
	FJX-16-12	1"	1 1/16-12	1	3.9434	1.654	1-3/8	1-1/4		
	FJX-16-16	1"	1 5/16-12	1	3.996	1.716	1-3/8	1-1/2		
	FJX-16-20	1"	1 5/8-12	1	4.184	1.904	1-11/16	2"		
	FJX-20-20	1 1/4"	1 5/8-12	1.25	4.368	1.993	1-3/4	2"		

37° JIC MALE RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		MJ-04-04	1/4"	7/16-20	0.25	2.305	1.05	5/8		
		MJ-04-05	1/4"	1/2-20	0.25	2.305	1.05	5/8		
		MJ-04-06	1/4"	9/16-18	0.25	2.405	1.15	3/4		
		MJ-06-06	3/8"	9/16-18	0.375	2.56	1.15	3/4		
		MJ-06-08	3/8"	3/4-16	0.375	2.751	1.251	13/16		
		MJ-06-10	3/8"	7/8-14	0.375	2.914	1.414	7/8		
		MJ-08-08	1/2"	3/4-16	0.5	2.939	1.251	7/8		
		MJ-08-10	1/2"	7/8-14	0.5	3.102	1.414	15/16		
		MJ-08-12	1/2"	1 1/16-12	0.5	3.208	1.52	1-1/8		
		MJ-10-10	5/8"	7/8-14	0.625	3.294	1.414	1-1/8		
		MJ-10-12	5/8"	1 1/16-12	0.625	3.4	1.52	1-1/8		
		MJ-12-12	3/4"	1 1/16-12	0.75	3.395	1.52	1-1/8		
		MJ-12-14	3/4"	1 3/16-12	0.75	3.426	1.546	1-1/4		
		MJ-12-16	3/4"	1 5/16-12	0.75	3.447	1.567	1-3/8		
		MJ-16-16	1"	1 5/16-12	1	3.902	1.627	1-3/8		
		MJ-20-20	1 1/4"	1 5/8-12	1.25	3.848	1.848	1-3/4		

MF / FJX90 / FJX45

HYDRAULIC HOSE COUPLINGS

MALE FACE SEAL RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MF-04-04	1/4"	9/16-18	0.25	2.338	1.083	5/8		
	MF-06-06	3/8"	13/16-16	0.375	2.457	0.957	3/4		
	MF-08-08	1/2"	11/16-16	0.5	2.708	1.02	7/8		
	MF-10-10	5/8"	1-14	0.625	3.036	1.15	1-1/8		
	MF-12-12	3/4"	1-13/16-12	0.75	3.13	1.25	1-1/4		

37° JIC FEMALE 90° SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FJX90-04-04	1/4"	7/16-20	0.25	2.31	1.295	5/8	0.88	9/16
	FJX90-04-05	1/4"	1/2-20	0.25	2.44	1.295	5/8	1.00	5/8
	FJX90-04-06	1/4"	9/16-18	0.25	2.4	1.35	5/8	1.13	11/16
	FJX90-06-04	3/8"	7/16-20	0.375	2.5	1.06	3/4	0.88	9/16
	FJX90-06-06	3/8"	9/16-18	0.375	2.705	1.376	3/4	1.12	11/16
	FJX90-06-08	3/8"	3/4-16	0.375	2.75	1.496	3/4	1.38	7/8
	FJX90-08-06	1/2"	9/16-18	0.5	3.313	1.625	7/8	1.12	11/16
	FJX90-08-08	1/2"	3/4-16	0.5	3.043	1.312	7/8	1.39	7/8
	FJX90-08-10	1/2"	7/8-14	0.5	3.375	1.437	7/8	1.58	1"
	FJX90-10-10	5/8"	7/8-14	0.625	3.35	1.437	1-1/8	1.58	1"
	FJX90-10-12	5/8"	1 1/16-12	0.625	3.943	2.063	1-1/8	2.28	1-1/4
	FJX90-12-12	3/4"	1 1/16-12	0.75	4.022	2.063	1-1/8	2.28	1-1/4
	FJX90-12-16	3/4"	1 5/16-12	0.75	4.193	2.313	1-3/8	2.51	1-1/2
	FJX90-16-16	1"	1 5/16-12	1	3.401	2.063	1-3/8	2.51	1-1/2
	FJX90-20-20	1-1/4"	1 5/8-12	1.25	5.745	3.745	1-3/4	3.33	

37° JIC FEMALE 45° SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FJX45-04-04	1/4"	7/16-20	0.25	2.58	1.403	5/8	0.450	9/16
	FJX45-04-05	1/4"	1/2-20	0.25	2.67	1.395	5/8	0.497	5/8
	FJX45-04-06	1/4"	9/16-18	0.25	2.645	1.375	5/8	1.500	11/16
	FJX45-06-04	3/8"	7/16-20	0.375	2.813	1.303	3/4	0.467	9/16
	FJX45-06-06	3/8"	9/16-18	0.375	2.967	1.253	3/4	0.590	11/16
	FJX45-06-08	3/8"	3/4-16	0.375	3.158	1.658	3/4	0.713	7/8
	FJX45-08-06	1/2"	9/16-18	0.5	3.171	1.483	7/8	0.588	11/16
	FJX45-08-08	1/2"	3/4-16	0.5	3.411	1.658	7/8	0.635	7/8
	FJX45-08-10	1/2"	7/8-14	0.5	3.523	1.773	7/8	0.839	1"
	FJX45-10-10	5/8"	7/8-14	0.625	3.739	1.835	1-1/8	0.816	1"
	FJX45-10-12	5/8"	1 1/16-12	0.625	4.366	2.449	1-1/8	0.967	1-1/4
	FJX45-12-12	3/4"	1 1/16-12	0.75	4.329	2.449	1-1/8	1.118	1-1/4
	FJX45-12-16	3/4"	1 5/16-12	0.75	4.461	2.521	1-3/8	1.148	1-1/2
	FJX45-16-16	1"	1 5/16-12	1	4.971	2.639	1-3/8	1.059	1-1/2
	FJX45-20-20	1-1/4"	1 5/8-12	1.25	5.961	3.961	1-3/4	1.63	2"

FJX90L / FFX / FFX90 / FFX45

HYDRAULIC HOSE COUPLINGS

37° JIC FEMALE 90° LONG DROP SWIVEL	PART NUMBER	HOSE ID	THREAD	A	B	C	D	E	F
		FJX90L-04-04	1/4"	7/16-20	0.25	2.328	1.063	5/8	1.80
FJX90L-04-06		1/4"	9/16-18	0.25	2.438	1.188	5/8	2.18	11/16
FJX90L-06-04		3/8"	7/16-20	0.375	2.573	1.063	3/4	1.80	9/16
FJX90L-06-06		3/8"	9/16-18	0.375	2.625	1.188	3/4	2.18	11/16
FJX90L-06-08		3/8"	3/4-16	0.375	2.751	1.31	3/4	2.43	7/8
FJX90L-08-08		1/2"	3/4-16	0.5	2.938	1.312	7/8	2.43	7/8
FJX90L-08-10		1/2"	7/8-14	0.5	3.125	1.437	7/8	2.57	1"
FJX90L-10-10		5/8"	7/8-14	0.625	2.13	1.437	1-1/8	2.57	1"
FJX90L-12-12		3/4"	1 1/16-12	0.75	2.875	2.063	1-1/8	4.33	1-1/4
FJX90L-16-16		1"	1 5/16-12	1	4.688	2.31	1-3/8	4.33	1-1/2

O-RING FACE SEAL FEMALE SWIVEL	PART NUMBER	HOSE ID	THREAD	A	B	C	D	E	F
		FFX-04-04	1/4"	9/16-18	0.25	2.419	1.164	5/8	11/16
FFX-04-06		1/4"	11/16-16	0.25	2.527	1.272	3/4	7/8	
FFX-06-06		3/8"	11/16-16	0.375	2.752	1.252	3/4	7/8	
FFX-06-08		3/8"	1 3/16-16	0.375	3.090	3.250	3/4	15/16	
FFX-08-08		1/2"	1 3/16-16	0.5	3.125	1.810	15/16	1-1/16	
FFX-08-10		1/2"	1-14	0.5	3.196	1.508	15/16	1-1/8	
FFX-08-12		1/2"	1 3/16-12	0.5	3.282	1.594	1-1/8	1-1/4	
FFX-10-10		5/8"	1-14	0.625	3.388	1.508	1-1/8	1-1/8	
FFX-10-12		5/8"	1 3/16-12	0.625	3.432	1.552	1-1/8	1-3/8	
FFX-12-12		3/4"	1 3/16-12	0.75	3.432	1.552	1-1/8	1-3/8	
FFX-12-16		3/4"	1 7/16-12	0.75	3.444	1.565	1-1/4	1-3/8	
FFX-16-16		1"	1 7/16-12	1	3.996	1.716	1-3/8	1-5/8	

O-RING FACE SEAL 90° FEMALE SWIVEL	PART NUMBER	HOSE ID	THREAD	A	B	C	D	E	F
		FFX90-04-04	1/4"	9/16-18	0.25	2.3	1.21	5/8	0.78
FFX90-04-06		1/4"	11/16-16	0.25	2.36	1.21	5/8	0.90	13/16
FFX90-06-06		3/8"	11/16-16	0.375	2.827	1.28	3/4	0.90	13/16
FFX90-06-08		3/8"	1 3/16-16	0.375	2.95	1.42	3/4	1.15	15/16
FFX90-08-08		1/2"	1 3/16-16	0.5	3.14	1.605	7/8	1.15	15/16
FFX90-08-10		1/2"	1-14	0.5	3.23	1.25	7/8	1.78	1-1/8
FFX90-10-10		5/8"	1-14	0.625	3.41	1.437	1-1/8	1.78	1-1/8
FFX90-10-12		5/8"	1 3/16-12	0.625	3.77	2.021	1-1/8	1.88	1-3/8
FFX90-12-12		3/4"	1 3/16-12	0.75	3.77	2.021	1-1/8	1.88	1-3/8
FFX90-12-16		3/4"	1 7/16-12	0.75	4.79	2.063	1-3/8	2.51	1-1/2
FFX90-16-16		1"	1 7/16-12	1	4.43	2.373	1-3/8	2.53	1-5/8

O-RING FACE SEAL 45° FEMALE SWIVEL	PART NUMBER	HOSE ID	THREAD	A	B	C	D	E	F
		FFX45-04-04	1/4"	9/16-18	0.25	2.6	1.305	5/8	0.40
FFX45-04-06		1/4"	11/16-16	0.25	2.6	1.305	5/8	0.43	13/16
FFX45-06-06		3/8"	11/16-16	0.375	2.9	1.38	3/4	0.43	13/16
FFX45-06-08		3/8"	1 3/16-16	0.375	3.202	1.52	3/4	0.59	15/16
FFX45-08-08		1/2"	1 3/16-16	0.5	3.39	1.71	7/8	0.53	15/16
FFX45-08-10		1/2"	1-14	0.5	3.66	1.76	7/8	0.83	1-1/8
FFX45-10-10		5/8"	1-14	0.625	3.85	1.945	1-1/8	0.83	1-1/8
FFX45-10-12		5/8"	1 3/16-12	0.625	4	2.135	1-1/8	0.83	1-3/8
FFX45-12-12		3/4"	1 3/16-12	0.75	4	2.135	1-1/8	0.83	1-3/8
FFX45-16-16		1"	1 7/16-12	1	5	2.765	1-3/8	1.00	1-5/8

FFX90L / MIX / MIX45 / MIX90

HYDRAULIC HOSE COUPLINGS

O-RING FACE SEAL 90° LONG DROP FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FFX90L-04-04	1/4"	9/16-18	0.25	2.32	1.25	5/8	1.81	11/16
	FFX90L-06-06	3/8"	11/16-16	0.375	2.8	1.48	3/4	2.13	13/16
	FFX90L-08-08	1/2"	1 3/16-16	0.5	3.17	1.61	7/8	2.50	15/16
	FFX90L-12-12	3/4"	1 3/16-12	0.75	3.78	2.03	1-1/8	3.79	1-3/8

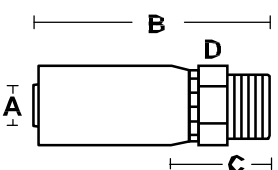
45° SAE MALE INVERTED FLARE	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MIX-04-03	1/4"	3/8-24	0.25					
	MIX-04-04	1/4"	7/16-24	0.25	2.728	1.463	5/8	7/16	
	MIX-04-05	1/4"	1/2-20	0.25	2.862	1.593	5/8	1/2	
	MIX-04-06	1/4"	5/8-18	0.25	2.9	1.65	5/8	5/8	
	MIX-05-05	5/16"	1/2-20	0.312	3.41	2.06	5/8	1/2	
	MIX-05-06	5/16"	5/8-18	0.312	3.75	2.41	5/8	5/8	
	MIX-06-05	3/8"	1/2-20	0.375	3.17	1.81	3/4	1/2	
	MIX-06-06	3/8"	5/8-18	0.375	3.156	1.65	3/4	5/8	
	MIX-06-07	3/8"	11/16-18	0.375	3.162	1.665	3/4	11/16	
	MIX-06-08	3/8"	3/4-16	0.375	3.415	1.915	3/4	3/4	
MIX-08-08	1/2"	3/4-16	0.5	3.592	1.915	7/8	3/4		

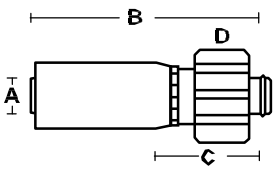
45° SAE MALE INVERTED FLARE 45° BENT TUBE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MIX45-04-03	1/4"	3/8-24	0.25					
	MIX45-04-04	1/4"	7/16-24	0.25	2.8	1.545	5/8	0.600	7/16
	MIX45-04-05	1/4"	1/2-20	0.25	2.935	1.575	5/8	0.685	1/2
	MIX45-04-06	1/4"	5/8-18	0.25	3.092	1.87	5/8	0.780	5/8
	MIX45-05-05	5/16"	1/2-20	0.312	4.17	2.81	5/8	0.880	1/2
	MIX45-05-06	5/16"	5/8-18	0.312	4.17	2.81	5/8	0.940	5/8
	MIX45-06-05	3/8"	1/2-20	0.375	3.38	2.03	3/4	0.880	1/2
	MIX45-06-06	3/8"	5/8-18	0.375	3.24	1.87	3/4	0.780	5/8
	MIX45-06-07	3/8"	11/16-18	0.375	3.25	1.855	3/4	0.760	11/16
	MIX45-06-08	3/8"	3/4-16	0.375	3.505	2.005	3/4	0.960	3/4
MIX45-08-08	1/2"	3/4-16	0.5	3.67	2.005	7/8	0.960	3/4	

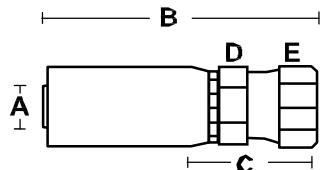
45° SAE MALE INVERTED FLARE 90° BENT TUBE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MIX90-04-03		3/8-24	0.25					
	MIX90-04-04	1/4"	7/16-24	0.25	3.28	1.94	5/8	1.47	7/16
	MIX90-04-05	1/4"	1/2-20	0.25	3.52	2.16	5/8	1.66	1/2
	MIX90-04-06	1/4"	5/8-18	0.25	3.5	2.16	5/8	1.69	5/8
	MIX90-05-05	5/16"	1/2-20	0.312	4	2.3	5/8	1.66	1/2
	MIX90-05-06	5/16"	5/8-18	0.312	4.05	2.69	5/8	1.69	5/8
	MIX90-06-05	3/8"	1/2-20	0.375	3.175	1.675	3/4	1.32	1/2
	MIX90-06-06	3/8"	5/8-18	0.375	2.73	1.195	3/4	1.29	5/8
	MIX90-06-07	3/8"	11/16-18	0.375	2.76	1.16	3/4	1.30	11/16
	MIX90-06-08	3/8"	3/4-16	0.375	2.905	1.405	3/4	0.78	3/4
MIX90-08-08	1/2"	3/4-16	0.5	3.1	1.405	7/8	0.78	3/4	

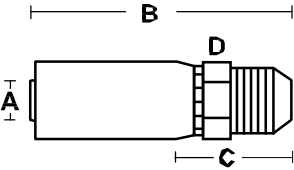
MT / KAR / FSX / MS / FSX90

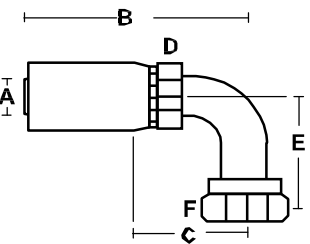
HYDRAULIC HOSE COUPLINGS

FLARELESS COMPRESSION WITH NUT AND SLEEVE PER SAE J514		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MT-04-04	1/4"	1/2-20	0.25	2.194	0.939	5/8			
	MT-04-05	1/4"	9/16-18	0.25	2.194	0.939	5/8			
	MT-06-05	3/8"	9/16-18	0.375	2.439	0.939	3/4			
	MT-06-06	3/8"	5/8-18	0.375	2.439	0.939	3/4			
	MT-06-08	3/8"	3/4-16	0.375	2.579	1.079	3/4			
	MT-08-08	1/2"	3/4-16	0.5	2.767	1.079	3/4			
	MT-08-10	1/2"	15/16-16	0.5	2.830	1.142	15/16			
	MT-12-12	3/4"	1 1/16-16	0.75	3.145	1.265	1-1/4			

KARCHER PRESSURE WASH FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	KAR-04-22	1/4"	M22 X 1.5	0.25	2.572	1.260	3/4			
	KAR-06-22	3/8"	M22 X 1.5	0.375	2.760	1.260	3/4			

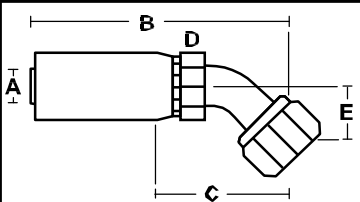
45° SAE FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FSX-04-06	1/4"	5/8-18	0.25	2.630	1.375	11/16	13/16		
	FSX-06-06	3/8"	5/8-18	0.375	2.844	1.344	3/4	13/16		
	FSX-12-12	3/4"	1 1/16-14	0.75	3.474	1.594	1-1/8	1-1/4		

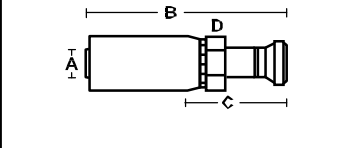
45° SAE MALE RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MS-06-06	3/8"	5/8-18	0.375	2.724	1.224	3/4			
	MS-12-12	3/4"	1 1/16-14	0.75	3.530	1.650	1-1/8			

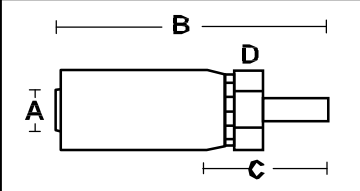
45° SAE FEMALE 90° SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FSX90-06-06	3/8"	5/8-18	0.375	2.78	0.96	3/4	1.00	3/4	
	FSX90-12-12	3/4"	1 1/16-14	0.75	4.05	1.87	1-1/8	2.27	1-1/4	

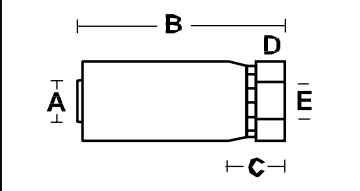
FSX45 / C61 / MW / FW / SHELL

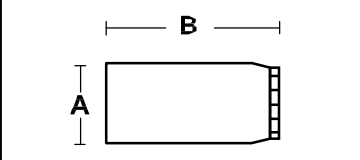
HYDRAULIC HOSE COUPLINGS

45° SAE FEMALE 45° SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FSX45-06-06	3/8"	5/8-18	0.375	2.99	1.44	3/4	0.40	3/4
	FSX45-12-12	3/4"	1 1/16-14	0.75	4.36	2.44	1-1/8	0.92	1-1/4

CODE 61 FLANGE STRAIGHT RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	C61-08-08	1/2"	N/A	0.5	3	1.31	7/8		
	C61-08-12	1/2"	N/A	0.5	3	1.31	7/8		
	C61-12-12	3/4"	N/A	0.5	3.5	1.62	1-1/8		
	C61-12-16	3/4"	N/A	0.75	3.5	1.62	1-1/8		
	C61-16-16	1"	N/A	1	3.5	1.22	1-1/8		
	C61-16-20	1"	N/A	1					

STAND TUBE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MW-04-04	1/4"	N/A	0.25	2.72	1.465	5/8	1/4	
	MW-04-05	1/4"	N/A	0.25	2.832	1.577	5/8	5/16	
	MW-04-06	1/4"	N/A	0.25	2.91	1.655	5/8	3/8	
	MW-06-06	3/8"	N/A	0.375	3.155	1.655	3/4	3/8	
	MW-06-08	3/8"	N/A	0.375	3.42	1.92	3/4	1/2	
	MW-08-08	1/2"	N/A	0.5	3.608	1.92	7/8	1/2	
	MW-08-10	1/2"	N/A	0.5	3.821	2.13	7/8	5/8	
	MW-12-12	3/4"	N/A	0.75	4.855	2.975	1-1/8	3/4	
	MW-16-16	1"	N/A	1	5.365	3.025	1-3/8	1"	

FEMALE WELD FITTING RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FW-04-04	1/4"	N/A	0.25	1.88	0.625	5/8	1/4	
	FW-04-05	1/4"	N/A	0.25	1.88	0.625	5/8	5/16	
	FW-04-06	1/4"	N/A	0.25	1.88	0.625	5/8	3/8	
	FW-06-06	3/8"	N/A	0.375	2.125	0.625	3/4	3/8	
	FW-06-08	3/8"	N/A	0.375	2.125	0.625	3/4	1/2	
	FW-08-08	1/2"	N/A	0.5	2.315	0.625	7/8	1/2	
	FW-12-12	3/4"	N/A	0.75	2.63	0.75	1-1/8	3/4	
	FW-16-16	1"	N/A	1	3.09	0.81	1-3/8	1"	

SHELL ONLY	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	SHELL-4	1/4"	N/A	3/4	1.495				
	SHELL-6	3/8"	N/A	0.900	1.680				
	SHELL-8	1/2"	N/A	1-1/16	1.870				
	SHELL-10	5/8"	N/A	1-1/4	2.062				
	SHELL-12	3/4"	N/A	1-3/8	2.025				
	SHELL-16	1"	N/A	1-11/16	2.570				

METRIC HOSE COUPLINGS

METRIC HOSE COUPLINGS

BRITISH STANDARD PIPE 60 CONE FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-BSPX-04-04	1/4"	1/4-19	0.25	2.461	1.206	5/8	3/4	
	F-BSPX-06-06	3/8"	3/8-19	0.375	2.688	1.188	3/4	7/8	
	F-BSPX-06-08	3/8"	1/2-14	0.375	2.838	1.338	7/8	1"	
	F-BSPX-08-08	1/2"	1/2-14	0.5	3.028	1.338	1"	1"	
	F-BSPX-10-10	5/8"	5/8-14	0.625					
	F-BSPX-12-12	3/4"	3/4-14	0.75	3.474	1.594	1-1/8	1-1/4	
	F-BSPX-16-16	1"	1-11	1	3.999	1.719	1-3/8	1-1/2	

BRITISH STANDARD PIPE 60 CONE MALE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	M-BSPT-04-04	1/4"	1/4-19	0.25	2.315	1.060	11/16		
	M-BSPT-06-06	3/8"	3/8-19	0.375	2.650	1.150	3/4		
	M-BSPT-08-08	1/2"	1/2-14	0.5	3.100	1.412	7/8		
	M-BSPT-12-12	3/4"	3/4-14	0.75	3.290	1.410	1-1/8		
	M-BSPT-16-16	1"	1-11	1	3.930	1.650	1-3/8		

BRITISH PARALLEL PIPE 60 CONE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	M-BSPP-04-04	1/4"	1/4-19	0.25	2.400	1.145	13/16		
	M-BSPP-06-06	3/8"	3/8-19	0.375	2.700	1.200	7/8		
	M-BSPP-08-08	1/2"	1/2-14	0.5	3.010	1.322	1-1/16		

BRITISH FLAT FACE SEAT FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-BFPX-06-06	3/8"	3/8-19	0.375					
	F-BFPX-06-08	3/8"	1/2-14	0.375					
	F-BFPX-08-08	1/2"	1/2-14	0.5					

BRITISH STANDARD PIPE 60 CONE 90° TUBE FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-BSPX90-04-04	1/4"	1/4-19	0.25	2.37	1.16	5/8	0.98	3/4
	F-BSPX90-06-06	3/8"	3/8-19	0.375	2.712	0.88	3/4	1.30	7/8
	F-BSPX90-08-08	1/2"	1/2-14	0.5	2.1	1.63	7/8	1.62	1"
	F-BSPX90-10-10	5/8"	5/8-14	0.625					
	F-BSPX90-12-12	3/4"	3/4-14	0.75	3.965	2.57	1-1/8	1.66	1-1/4
	F-BSPX90-16-16	1"	1-11	1	5.385	3.105	1-3/8	2.96	1-1/2

BRITISH STANDARD PIPE 60 CONE 45° TUBE FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-BSPX45-04-04	1/4"	1/4-19	0.25	2.75	2.025	3/4	0.44	3/4
	F-BSPX45-06-06	3/8"	3/8-19	0.375	3.15	2.18	3/4	0.56	7/8
	F-BSPX45-08-08	1/2"	1/2-14	0.5	2.32	2.305	7/8	0.98	1"
	F-BSPX45-10-10	5/8"	5/8-14	0.625					
	F-BSPX45-12-12	3/4"	3/4-14	0.75	4.94	3.32	1-1/8	1.76	1-1/4
	F-BSPX45-16-16	1"	1-11	1	5.51	3.23	1-3/8	1.31	1-1/2

METRIC HOSE COUPLINGS

METRIC HOSE COUPLINGS

DIN LIGHT UNIVERSAL SEAT FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINLX-04-14	1/4"	M14 X 1.5	0.25						
	F-DINLX-04-16	1/4"	M16 X 1.5	0.25						
	F-DINLX-06-18	3/8"	M18 X 1.5	0.375						
	F-DINLX-08-22	1/2"	M22 X 1.5	0.5						
	F-DINLX-10-26	5/8"	M26 X 1.5	0.625						
	F-DINLX-12-30	3/4"	M30 X 2.0	0.75						
	F-DINLX-16-36	1"	M36 X 2.0	1						

DIN LIGHT UNIVERSAL SEAT MALE RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	M-DINLX-04-14	1/4"	M14 X 1.5	0.25						
	M-DINLX-04-16	1/4"	M16 X 1.5	0.25						
	M-DINLX-06-18	3/8"	M18 X 1.5	0.375						
	M-DINLX-08-22	1/2"	M22 X 1.5	0.5						
	M-DINLX-10-26	5/8"	M26 X 1.5	0.625						
	M-DINLX-12-30	3/4"	M30 X 2.0	0.75						
	M-DINLX-16-36	1"	M36 X 2.0	1						

DIN LIGHT UNIVERSAL SEAT 90° TUBE FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINLX90-04-16	1/4"	M16 X 1.5	0.25						
	F-DINLX90-06-18	3/8"	M18 X 1.5	0.375						
	F-DINLX90-08-22	1/2"	M22 X 1.5	0.5						
	F-DINLX90-10-26	5/8"	M26 X 1.5	0.625						
	F-DINLX90-12-30	3/4"	M30 X 2.0	0.75						
	F-DINLX90-16-36	1"	M36 X 2.0	1						

DIN LIGHT UNIVERSAL SEAT 45° TUBE FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINLX45-04-16	1/4"	M16 X 1.5	0.25						
	F-DINLX45-06-18	3/8"	M18 X 1.5	0.375						
	F-DINLX45-08-22	1/2"	M22 X 1.5	0.5						
	F-DINLX45-10-26	5/8"	M26 X 1.5	0.625						
	F-DINLX45-12-30	3/4"	M30 X 2.0	0.75						
	F-DINLX45-16-36	1"	M36 X 2.0	1						

DIN HEAVY UNIVERSAL SEAT FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINHX-04-18	1/4"	M18 X 1.5	0.25						
	F-DINHX-06-22	3/8"	M22 X 1.5	0.375						
	F-DINHX-08-24	1/2"	M24 X 1.5	0.5						
	F-DINHX-10-30	5/8"	M30 X 2.0	0.625						
	F-DINHX-12-36	3/4"	M36 X 2.0	0.75						
	F-DINHX-16-42	1"	M42 X 2.0	1						

METRIC HOSE COUPLINGS

METRIC HOSE COUPLINGS

DIN HEAVY UNIVERSAL SEAT MALE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	M-DINHX-04-18	1/4"	M18 X 1.5	0.25					
	M-DINHX-06-22	3/8"	M22 X 1.5	0.375					
	M-DINHX-08-24	1/2"	M24 X 1.5	0.5					
	M-DINHX-10-30	5/8"	M30 X 2.0	0.625					
	M-DINHX-12-36	3/4"	M36 X 2.0	0.75					
	M-DINHX-16-42	1"	M36 X 2.0	1					

DIN HEAVY UNIVERSAL SEAT 90° TUBE FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINHX90-04-18	1/4"	M16 X 1.5	0.25					
	F-DINHX90-06-22	3/8"	M22 X 1.5	0.375					
	F-DINHX90-08-24	1/2"	M24 X 1.5	0.5					
	F-DINHX90-10-30	5/8"	M30 X 2.0	0.625					
	F-DINHX90-12-36	3/4"	M36 X 2.0	0.75					
	F-DINHX90-16-42	1"	M36 X 2.0	1					

DIN HEAVY UNIVERSAL SEAT 45° TUBE FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-DINHX45-04-18	1/4"	M16 X 1.5	0.25					
	F-DINHX45-06-22	3/8"	M22 X 1.5	0.375					
	F-DINHX45-08-24	1/2"	M24 X 1.5	0.5					
	F-DINHX45-10-30	5/8"	M30 X 2.0	0.625					
	F-DINHX45-12-36	3/4"	M36 X 2.0	10.75					
	F-DINHX45-16-42	1"	M42 X 2.0	1					

J.I.S. 30° FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-JISX-04-04	1/4"	1/4-19	0.25	2.575	1.320	5/8	3/4	
	F-JISX-06-06	3/8"	3/8-19	0.375	2.910	1.410	3/4	7/8	
	F-JISX-08-08	1/2"	1/2-14	0.5					
	F-JISX-12-12	3/4"	3/4-14	0.75					
	F-JISX-16-16	1"	1-11	1					

KOMATSU JIS 30 SEAT FEMALE SWIVEL	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	F-KOMX-04-14	1/4"	M14 X 1.5	0.25					
	F-KOMX-06-18	3/8"	M18 X 1.5	0.375					
	F-KOMX-08-22	1/2"	M22 X 1.5	0.5					
	F-KOMX-10-24	5/8"	M24 X 1.5	0.625					
	F-KOMX-12-30	3/4"	M30 X 1.5	0.75					
	F-KOMX-16-33	1"	M33 X 1.5	1					

METRIC HOSE COUPLINGS

METRIC HOSE COUPLINGS

METRIC O.D. STAND TUBE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MMSP-04-06	1/4	N/A	0.25	3.010	1.660	5/8	6MM	
	MMSP-04-08	1/4	N/A	0.25	3.090	1.720	5/8	8MM	
	MMSP-04-10	1/4	N/A	0.25	3.160	1.810	5/8	10MM	
	MMSP-05-10	5/16	N/A	0.312	3.200	1.840		10MM	
	MMSP-05-12	5/16	N/A	0.312	3.230	1.880		12MM	
	MMSP-06-10	3/8	N/A	0.375	3.180	1.810	3/4	10MM	
	MMSP-06-12	3/8	N/A	0.375	3.220	1.800	3/4	12MM	
	MMSP-06-14	3/8	N/A	0.375	3.300	1.940	7/8	14MM	
	MMSP-08-15	1/2	N/A	0.5	3.330	1.970	7/8	15MM	
	MMSP-08-16	1/2	N/A	0.5	3.530	2.160	7/8	16MM	
	MMSP-08-18	1/2	N/A	0.5	3.330	1.970	1"	18MM	
	MMSP-10-18	5/8	N/A	0.625	3.340	1.970	1-1/8	18MM	
	MMSP-10-20	5/8	N/A	0.625	3.620	2.220	1-1/8	20MM	
	MMSP-12-20	3/4	N/A	0.75	3.750	2.120	1-1/8	20MM	
	MMSP-12-22	3/4	N/A	0.75	3.400	1.880	1-1/4	22MM	
	MMSP-12-25	3/4	N/A	0.75	3.790	2.220	1-3/8	25MM	
	MMSP-16-25	1"	N/A	1	4.060	2.440	1-3/8	25MM	
	MMSP-16-28	1"	N/A	1	3.720	2.090	1-3/8	28MM	
MMSP-16-30	1"	N/A	1	4.150	2.530	1-1/2	30MM		

METRIC O.D. STAND PIPE 45° TUBE	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MMSP45-04-06	1/4	N/A	0.25	3.400	2.060	5/8	0.66	6MM
	MMSP45-04-08	1/4	N/A	0.25	3.540	2.190	5/8	0.75	8MM
	MMSP45-04-10	1/4	N/A	0.25	3.680	2.310	5/8	0.84	10MM
	MMSP45-05-10	5/16	N/A	0.312	3.710	2.340		0.84	10MM
	MMSP45-05-12	5/16	N/A	0.312	3.950	2.590		0.90	12MM
	MMSP45-06-10	3/8	N/A	0.375	3.690	2.340	3/4	0.84	10MM
	MMSP45-06-12	3/8	N/A	0.375	3.930	2.560	3/4	0.90	12MM
	MMSP45-06-14	3/8	N/A	0.375	4.070	2.720	7/8	0.99	14MM
	MMSP45-08-15	1/2	N/A	0.5	4.180	2.810	7/8	0.96	15MM
	MMSP45-08-16	1/2	N/A	0.5	4.350	2.000	7/8	1.11	16MM
	MMSP45-08-18	1/2	N/A	0.5	4.540	2.940	1"	1.01	18MM
	MMSP45-10-18	5/8	N/A	0.625	4.310	2.940	1-1/8	1.01	18MM
	MMSP45-10-20	5/8	N/A	0.625	4.580	3.190	1-1/8	1.24	20MM
	MMSP45-12-20	3/4	N/A	0.75	4.580	3.190	1-1/8	1.24	20MM
	MMSP45-12-22	3/4	N/A	0.75	4.570	3.000	1-1/4	1.08	22MM
	MMSP45-12-25	3/4	N/A	0.75	4.960	3.380	1-3/8	1.38	25MM
	MMSP45-16-25	1"	N/A	1	5.420	3.380	1-3/8	1.38	25MM
	MMSP45-16-28	1"	N/A	1	5.220	3.590	1-3/8	1.18	28MM
MMSP45-16-30	1"	N/A	1	5.610	4.000	1-1/2	1.52	30MM	

METRIC HOSE COUPLINGS

METRIC HOSE COUPLINGS

METRIC O.D. STANDPIPE 90° TUBE	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MMSP90-04-06	1/4	N/A	0.25	2.950	1.590	5/8	1.14	6MM
	MMSP90-04-08	1/4	N/A	0.25	3.070	1.720	5/8	1.34	8MM
	MMSP90-04-10	1/4	N/A	0.25	3.180	1.840	5/8	1.54	10MM
	MMSP90-05-10	5/16	N/A	0.312	3.220	1.880		1.54	10MM
	MMSP90-05-12	5/16	N/A	0.312	3.460	2.090		1.69	12MM
	MMSP90-06-10	3/8	N/A	0.375	3.200	1.830	3/4	1.54	10MM
	MMSP90-06-12	3/8	N/A	0.375	3.440	2.090	3/4	1.69	12MM
	MMSP90-06-14	3/8	N/A	0.375	3.560	2.220	7/8	1.89	14MM
	MMSP90-08-15	1/2	N/A	0.5	3.750	2.410	7/8	1.89	15MM
	MMSP90-08-16	1/2	N/A	0.5	3.790	2.440	7/8	2.13	16MM
	MMSP90-08-18	1/2	N/A	0.5	3.720	2.530	1"	2.05	18MM
	MMSP90-10-18	5/8	N/A	0.625	3.920	2.530	1-1/8	2.05	18MM
	MMSP90-10-20	5/8	N/A	0.625	4.040	2.660	1-1/8	2.44	20MM
	MMSP90-12-20	3/4	N/A	0.75	4.040	2.660	1-1/8	2.44	20MM
	MMSP90-12-22	3/4	N/A	0.75	4.250	2.690	1-1/4	2.28	22MM
	MMSP90-12-25	3/4	N/A	0.75	4.450	2.880	1-3/8	2.84	25MM
	MMSP90-16-25	1"	N/A	1	4.910	2.880	1-3/8	2.84	25MM
	MMSP90-16-28	1"	N/A	1	5.010	3.410	1-3/8	2.64	28MM
MMSP90-16-30	1"	N/A	1	5.130	3.500	1-1/2	3.19	30MM	

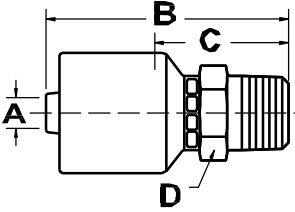
R2 REUSABLE COUPLINGS

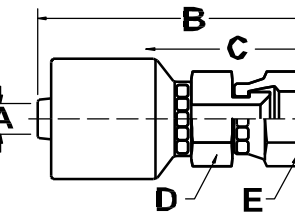
37° JIC FEMALE SWIVEL 100R2 AT REUSABLE	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	FJX-04-04-R2R	1/4	7/16 20	0.250					
	FJX-06-06-R2R	3/8	9/16 18	0.375					
	FJX-06-08-R2R	3/8	3/4 16	0.375					
	FJX-08-08-R2R	1/2	3/4 16	0.500					
	FJX-12-12-R2R	1/2	9/16 18	0.500					
	FJX-16-16-R2R	1	1 5/16 12	1.000					

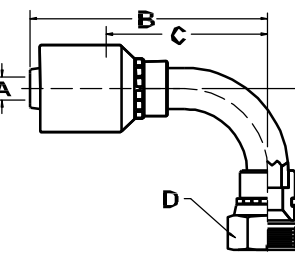
MALE PIPE RIGID 100R2 AT REUSABLE	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	MP-04-04-R2R	1/4	1/4 - 18	0.250					
	MP-06-06-R2R	3/8	3/8 - 18	0.375					
	MP-06-08-R2R	3/8	1/2 - 14	0.375					
	MP-08-08-R2R	1/2	1/2 - 14	0.500					
	MP-12-12-R2R	1/2	3/4 - 14	0.500					
	MP-16-16-R2R	1	1 - 11 1/2	1.000					

SPIRAL HOSE COUPLINGS

SPIRAL HOSE COUPLINGS

MALE PIPE NPTF RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		MP-06-06-W	3/8"	3/8-18	0.375	2.22	0.99	3/4"		
		MP-06-08-W	3/8"	1/2-14	0.375	2.49	1.26	7/8"		
		MP-08-08-W	1/2"	1/2-14	0.5	2.64	1.30	7/8"		
		MP-10-08-W	5/8"	1/2-14	0.625					
		MP-10-12-W	5/8"	3/4"-14	0.625					
		MP-12-12-W	3/4"	3/4"-14	0.75	3.19	1.40	1,1/16"		
		MP-12-16-W	3/4"	1"-11,1/2	0.75	3.39	1.61	1,3/8"		
		MP-16-16-W	1"	1"-11,1/2	1	3.73	1.62	1,3/8"		
		MP-16-16-W-API	1"	1"-11,1/2	1	4.72	2.61	1,3/8"		
		MP-16-20-W	1"	1,1/4"-11,1/2	1	3.80	1.69	1,11/16"		
		MP-20-20-W	1,1/4"	1,1/4"-11,1/2	1.25	4.15	1.70	1,11/16"		
		MP-20-24-W	1,1/4"	1,1/2"-11,1/2	1.25	4.26	1.81	2"		
		MP-24-24-W	1,1/2"	1,1/2"-11,1/2	1.5	4.48	1.51	2"		
		MP-32-32-W	2"	2"-11,1/2	2	5.41	2.16	2,1/2"		
		MP-32-32-W-API	2"	2"-11,1/2	2	7.56	4.31	2,1/2"		

37° JIC FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FJX-06-06-W	3/8"	9/16-18	0.375	2.50	.719	3/4"	3/4"	
		FJX-06-08-W	3/8"	3/4-16	0.375	2.47	1.24	3/4"	7/8"	
		FJX-08-08-W	1/2"	3/4-16	0.5	2.64	1.30	7/8"	7/8"	
		FJX-08-10-W	1/2"	7/8-14	0.5	2.80	1.46	7/8"	1,1/16"	
		FJX-10-10-W	5/8"	7/8-14	0.625					
		FJX-12-10-W	3/4"	7/8/14	0.75	3.28	1.49	1,1/16"	1,1/16"	
		FJX-12-12-W	3/4"	1,1/16-12	0.75	3.38	1.59	1,1/16"	1,1/4"	
		FJX-12-14-W	3/4"	1,3/16-12	0.75	3.38	1.59	1,1/5	1,1/2"	
		FJX-12-16-W	3/4"	1,5/16-12	0.75	3.45	1.66	1,3/8"	1,1/2"	
		FJX-16-12-W	1"	1,1/16/12	1	3.39	1.60	1,3/8"	1,1/4"	
		FJX-16-16-W	1"	1,5/16-12	1	3.78	1.67	1,3/8"	1,1/2"	
		FJX-16-20-W	1"	1,5/8-12	1	4.02	1.90	1,11/16"	2"	
		FJX-20-20-W	1,1/4"	1,5/8-12	1.25	4.37	1.92	1,11/16"	2"	
		FJX-20-24-W	1,1/4"	1,7/8-12	1.25	4.54	2.09	2"	2,1/4"	
		FJX-24-24-W	1,1/2"	1,7/8-12	1.25	4.76	2.16	2"	2,1/4"	
		FJX-32-32-W	2"	2,1/2-12	2	5.95	2.70	2,1/2"	2,7/8"	

37° JIC FEMALE 90° SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FJX90-06-06-W	3/8"	9/16-18	0.375	2.34	1.12	11/16"	1.13	
		FJX90-08-08-W	1/2"	3/4-16	0.5	2.64	1.30	7/8"	1.38	
		FJX90L-08-08-W	1/2"	3/4-16	0.5	2.64	1.30	7/8"	2.43	
		FJX90-08-10-W	1/2"	7/8-14	0.5	2.77	1.43	1"	1.63	
		FJX90L-08-10-W	1/2"	7/8-14	0.5	3.46	2.12	1"	2.57	
		FJX90-12-12-W	3/4"	1,1/16-12	0.75	4.82	3.03	1,1/4"	2.65	
		FJX90-12-16-W	3/4"	1,5/16-12	0.75	4.82	3.03	1,1/2"	2.77	
		FJX90-16-16-W	1"	1,5/16-12	1	5.22	3.11	1,1/2"	2.77	
		FJX90-16-20-W	1"	1,5/8-12	1	5.22	3.11	2"	3.02	
		FJX90-20-20-W	1,1/4"	1,5/8-12	1.25	6.23	3.78	2"	3.33	
		FJX90-20-24-W	1,1/4"	1,7/8-12	1.25	6.23	3.78	2,1/4"	3.36	
		FJX90-24-24-W	1,1/2"	1,7/8-12	1.25	6.74	4.14	2,1/4"	3.91	
		FJX90-32-32-W	2"	2,1/2-12	2	8.26	5.01	2,7/8"	5.40	

SPIRAL HOSE COUPLINGS

SPIRAL HOSE COUPLINGS

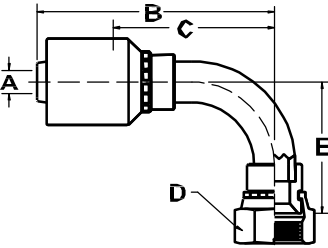
37° JIC FEMALE 45° SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FJX45-06-06-W	3/8"	9/16-18	0.375	2.64	1.41	11/16"	.588	
		FJX45-06-08-W	3/8"	3/4-16	0.375	2.82	1.59	7/8"	.713	
		FJX45-08-08-W	1/2"	3/4-16	0.5	2.99	1.65	7/8"	.713	
		FJX45-08-10-W	1/2"	7/8-14	0.5	3.17	1.83	1"	.839	
		FJX45-10-10-W	5/8"	7/8-14	0.625			1"		
		FJX45-12-12-W	3/4"	1,1/16-12	0.75	4.82	3.03	1,1/4"	1.06	
		FJX45-12-16-W	3/4"	1,5/16-12	0.75	4.91	3.12	1,1/2"	1.14	
		FJX45-16-16-W	1"	1,5/16-12	1	5.11	3.00	1,1/2"	1.12	
		FJX45-16-20 W	1"	1,5/8-12	1	5.29	3.18	2"	1.30	
		FJX45-20-20-W	1,1/4"	1,5/8-12	1.25	6.45	4.00	2"	1.63	
		FJX45-20-24-W	1,1/4"	1,7/8-12	1.25	6.47	4.02	2,1/4"	1.65	
		FJX45-24-24-W	1,1/2"	1,7/8-12	1.5	7.43	4.83	2,1/4"	1.79	
		FJX45-32-32-W	2"	2,1/2-12	2	9.08	5.83	2,7/8"	2.62	

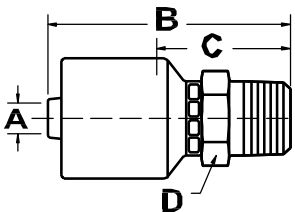
O-RING FACE SEAL FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FFX-06-06-W	3/8"	11/16-16	0.375	2.43	1.20	11/16"	7/8"	
		FFX-08-08-W	1/2"	13/16-16	0.5	2.77	1.43	7/8"	1,1/16"	
		FFX-08-10-W	1/2"	1"-14	0.5	2.86	1.52	15/16"	1,1/8"	
		FFX-10-10-W	5/8"	1"-14	0.625					
		FFX-12-12-W	3/4"	1,3/16-12	0.75	3.64	1.85	1,1/8"	1,3/8"	
		FFX-12-16-W	3/4"	1,7/16-12	0.75	3.66	1.87	1,3/8"	1,5/8"	
		FFX-16-16-W	1"	1,7/16-12	1	3.90	1.79	1,3/8"	1,5/8"	
		FFX-16-20-W	1"	1,11/16-12	1	3.99	1.88	1,5/8"	2"	
		FFX-20-20-W	1,1/4"	1,11/16-12	1.25	4.34	1.89	1,5/8"	2"	
		FFX-20-24-W	1,1/4"	2"-12	1.25	4.57	2.12	2,1/4"	2,1/4"	
		FFX-24-24-W	1,1/2"	2"-12	1.5	4.79	2.19	2,1/4"	2,1/4"	

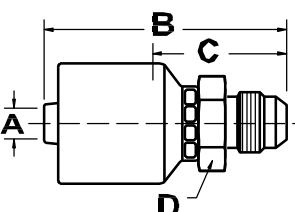
O-RING FACE SEAL 45° FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FFX45-06-06-W	3/8"	11/16-16	0.375	2.49	1.26	13/16"	.43	
		FFX45-08-08-W	1/2"	13/16-16	0.5	3.03	1.69	15/16"	.59	
		FFX45-08-10-W	1/2"	1"-14	0.5	3.16	1.83	1,1/8"	.43	
		FFX45-10-10-W	5/8"		0.625					
		FFX45-12-12-W	3/4"	1,3/16-12	0.75	4.82	3.03	1,3/8"	1.06	
		FFX45-12-16-W	3/4"	1,7/16-12	0.75	4.91	3.12	1,5/8"	1.14	
		FFX45-16-16-W	1"	1,7/16-12	1	5.11	3.00	1,5/8"	1.12	
		FFX45-16-20-W	1"	1,11/16-12	1	5.29	3.18	2"	1.30	
		FFX45-20-20-W	1,1/4"	1,11/16-12	1.25	6.45	4.00	2"	1.63	
		FFX45-20-24-W	1,1/4"	2"-12	1.25	6.47	4.02	2,1/4"	1.65	
		FFX45-24-24-W	1,1/2"	2"-12	1.5	7.43	4.83	2,1/4"	1.80	

SPIRAL HOSE COUPLINGS

SPIRAL HOSE COUPLINGS

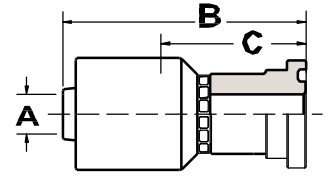
O-RING FACE SEAL 90° FEMALE SWIVEL		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		FFX90-06-06-W	3/8"	11/16-16	0.375	2.40	1.17	13/16"	0.90	
		FFX90-08-08-W	1/2"	13/16-16	0.5	2.68	1.35	15/16"	1.15	
		FFX90-08-10-W	1/2"	1"-14	0.5	2.77	1.43	1,1/8"	1.26	
		FFX90-10-10-W	5/8"	1"-14	0.625					
		FFX90-12-12-W	3/4"	1,3/16-12	0.75	4.82	3.03	1,3/8"	2.65	
		FFX90-12-16-W	3/4"	1,7/16-12	0.75	4.82	3.03	1,5/8"	2.77	
		FFX90-16-16-W	1"	1,7/16-12	1	5.22	3.11	1,5/8"	2.77	
		FFX90-16-20-W	1"	1,11/16-12	1	5.22	3.11	2"	3.02	
		FFX90-20-20-W	1,1/4"	1,11/16-12	1.25	6.23	3.78	2"	3.33	
		FFX90-20-24-W	1,1/4"	2"-12	1.25	6.23	3.78	2,1/4"	3.36	
		FFX90-24-24-W	1,1/2"	2"-12	1.5	6.74	4.14	2,1/4"	3.91	

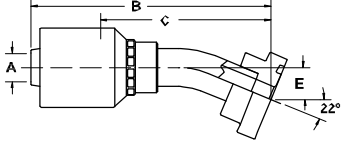
MALE BOSS O-RING RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		MB-06-06-W	3/8"	9/16-18	0.375	2.12	.89	3/4"		
		MB-06-08-W	3/8"	3/4-16	0.375	2.17	.94	7/8"		
		MB-08-08-W	1/2"	3/4-16	0.5	2.35	1.01	7/8"		
		MB-12-12-W	3/4"	1,1/16-12	0.75	2.05	1.26	1,1/4"		
		MB-12-16-W	3/4"	1,5/16-12	0.75	3.05	1.26	1,1/2"		
		MB-16-16-W	1"	1,5/16-12	1	3.38	1.27	1,1/2"		
		MB-16-20-W	1"	1,5/8-12	1	3.57	1.46	1,7/8"		
		MB-20-20-W	1,1/4"	1,5/8-12	1.25	4.07	1.62	1,7/8"		
		MB-20-24-W	1,1/4"	1,7/8-12	1.25	3.94	1.49	1,1/8"		
		MB-24-24-W	1,1/2"	1,7/8-12	1.5	4.31	1.71	1,1/4"		
		MB-32-32-W	2"	2,1/2-12	2	5.16	1.91	2,3/4"		

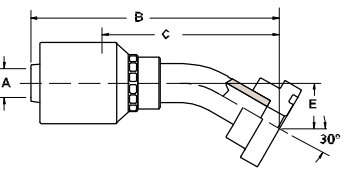
37° JIC MALE RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		MJ-06-06-W	3/8"	9/16-18	0.375	2.12	.99	3/4"		
		MJ-06-08-W	3/8"	3/4-16	0.375	2.38	1.15	3/4"		
		MJ-08-08-W	1/2"	3/4-16	0.5	2.57	1.23	7/8"		
		MJ-08-10-W	1/2"	7/8-14	0.5	2.72	1.38	1"		
		MJ-12-12-W	3/4"	1,1/16-12	0.75	3.34	1.55	1,1/8"		
		MJ-12-16-W	3/4"	1,5/16-12	0.75	3.37	1.58	1,3/8"		
		MJ-16-16-W	1"	1,5/16-12	1	3.93	1.81	1,3/8"		
		MJ-16-20-W	1"	1,5/8-12	1	3.81	1.69	1,11/16"		
		MJ-20-20-W	1,1/4"	1,5/8-12	1.25	4.40	1.65	1,11/16"		
		MJ-20-24-W	1,1/4"	1,7/8-12	1.25	4.38	1.93	2,1/4"		
		MJ-24-24-W	1,1/2"	1,7/8-12	1.5	4.60	2.00	2,1/4"		
		MJ-32-32-W	2"	2,1/2-12	2	5.90	2.65	2,5/8"		

SPIRAL HOSE COUPLINGS

SPIRAL HOSE COUPLINGS

CODE 61 FLANGE RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	C61-08-08-W	1/2	N/A	0.5	3.18	1.84			
	C61-12-12-W	3/4"	N/A	0.75	3.40	1.61			
	C61-12-16-W	3/4"	N/A	0.75	3.70	1.91			
	C61-16-16-W	1"	N/A	1	4.02	1.91			
	C61-16-20-W	1"	N/A	1	4.02	1.91			
	C61-20-20-W	1,1/4"	N/A	1.25	4.40	1.95			
	C61-20-24-W	1,1/4"	N/A	1.25	4.56	2.11			
	C61-24-24-W	1,1/2"	N/A	1.5	4.69	2.09			
	C61-32-32-W	2"	N/A	2	6.02	2.77			

CODE 61 FLANGE 22° RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	C6122-12-12-W	3/4"	N/A	0.75	4.59	2.80		.49	
	C6122-12-16-W	3/4"	N/A	0.75	4.59	2.80		.49	
	C6122-16-16-W	1"	N/A	1	4.97	2.86		.50	
	C6122-16-20-W	1"	N/A	1	4.97	2.86		.50	
	C6122-20-20-W	1,1/4"	N/A	1.25	5.39	2.94		.55	
	C6122-20-24-W	1,1/4"	N/A	1.25	5.46	3.00		.50	
	C6122-24-24-W	1,1/2"	N/A	1.5	6.61	4.01		.68	
	C6122-32-32-W	2"	N/A	2	8.00	4.75		.92	

CODE 61 FLANGE 30° RIGID	PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
	C6130-12-12-W	3/4"	N/A	0.75	4.68	2.89		.67	
	C6130-12-16-W	3/4"	N/A	0.75	4.68	2.89		.67	
	C6130-16-16-W	1"	N/A	1	4.95	2.83		.60	
	C6130-16-20-W	1"	N/A	1	4.95	2.832		.60	
	C6130-20-20-W	1,1/4"	N/A	1.25	5.66	3.21		.72	
	C6130-20-24-W	1,1/4"	N/A	1.25	5.71	3.26		.75	
	C6130-24-24-W	1,1/2"	N/A	1.5	6.89	4.29		.82	
	C6130-32-32-W	2"	N/A	2	8.34	5.09		1.37	

SPIRAL HOSE COUPLINGS

SPIRAL HOSE COUPLINGS

CODE 61 FLANGE 45° RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		C6145-12-12-W	3/4"	N/A	0.75	4.62	2.83		0.86	
		C6145-12-16-W	3/4"	N/A	0.75	4.62	2.83		0.86	
		C6145-16-16-W	1"	N/A	1	4.70	2.58		1.15	
		C6145-16-20-W	1"	N/A	1	4.83	2.71		0.84	
		C6145-20-20-W	1,1/4"	N/A	1.25	5.398	3.53		1.16	
		C6145-20-24-W	1,1/4"	N/A	1.25	6.03	3.57		1.21	
		C6145-24-24-W	1,1/2"	N/A	1.5	6.98	4.38		1.35	
		C6145-24-32-W	1,1/2"	N/A	1.5	.698	4.38		1.35	
		C6145-32-32-W	2"	N/A						

CODE 61 FLANGE 60° RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		C6160-12-12-W	3/4"	N/A	0.75	4.79	3.00		1.41	
		C6160-12-16-W	3/4"	N/A	0.75	4.79	3.00		1.41	
		C6160-16-16-W	1"	N/A	1	5.64	3.52		1.77	
		C6160-16-20-W	1"	N/A	1	5.64	3.52		1.77	
		C6160-20-20-W	1,1/4"	N/A	1.25	6.45	4.00		1.71	
		C6160-20-24-W	1,1/4"	N/A	1.25	6.48	4.03		1.77	
		C6160-24-24-W	1,1/2"	N/A	1.5	7.41	4.81		2.10	
		C6160-32-32-W	2"	N/A	2	8.70	5.45		3.07	

CODE 61 FLANGE 90° RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		C6190-12-12-W	3/4"	N/A	0.75	4.82	3.03		2.37	
		C6190-12-16-W	3/4"	N/A	0.75	4.82	3.03		2.40	
		C6190-16-16-W	1"	N/A	1	5.22	3.11		2.37	
		C6190-16-20-W	1"	N/A	1	5.22	3.11		2.37	
		C6190-20-20-W	1,1/4"	N/A	1.25	6.23	3.78		2.67	
		C6190-20-24-W	1,1/4"	N/A	1.25	6.23	3.78		2.76	
		C6190-24-24-W	1,1/2"	N/A	1.5	6.74	4.14		3.28	
		C6190-32-32-W	2"	N/A	2	8.26	5.01		4.682	

CODE 62 FLANGE RIGID		PART NUMBER	HOSE I.D.	THREAD	A	B	C	D	E	F
		C62-12-12-W	3/4"	N/A	0.75	3.56	1.77			
		C62-12-16-W	3/4"	N/A	0.75	4.15	2.36			
		C62-16-16-W	1"	N/A	1	4.53	2.42			
		C62-16-20-W	1"	N/A	1	4.81	2.70			
		C62-20-20-W	1,1/4"	N/A	1.25	5.21	2.81			
		C62-20-24-W	1,1/4"	N/A	1.25	5.44	2.99			
		C62-24-24-W	1,1/2"	N/A	1.5	5.59	2.99			
		C62-32-32-W	2"	N/A	2	6.58	3.33			

