

HYDRAULIC ADAPTERS

HYDRAULIC ADAPTERS

HYDRAULIC ADAPTERS & ACCESSORIES



STEEL ADAPTERS

HYDRAULIC QUICK DISCONNECTS

HYDRAULIC VALVES & ACCESSORIES

Technical information ... 496

Profile size chart 502

Steel Pipe Swivels.....	504
37° JIC Flare Straights.....	506
37° JIC Flare Shapes.....	508
Bulkhead Adapters.....	510
Steel Pipe Fittings.....	512
O-Ring Adapters Straight .	517
JIC Swivels.....	519
O-Ring Adapters.....	520
O-Ring Face Seal.....	523
BSPT/ BSPP Adapters.....	527
Metric Adapters.....	529
Flange Adapters.....	536
Stainless Steel Adapters....	540
SS Hose Fittings.....	555

Thread to Connect - Wing	531
ISO A Interchange.....	531
ISO B Interchange.....	531
Flush Face ISO.....	532
VEP Series.....	532
AG Interchange.....	533
Hydraulic Jack Q/D.....	533

Flow Control Valve.....	534
Variable Flow Control.....	535
Air Breathers.....	535

PLATING SPECIFICATION

Midland's standard Trivalent, Cr⁺³ plating performs at nearly double the S.A.E. corrosion resistance requirement. The plating meets ASTM B633, Fe/Zn 5. The thickness is 5um-13um. This plating is silver in appearance and has been testing at 96 hours to white rust and 120 hours to red rust.

TECHNICAL INFORMATIONHYDRAULIC ADAPTERS

TECHNICAL INFORMATION**WORKING PRESSURE**

The tables on the following pages list the recommended working pressure for a variety of hydraulic fittings made in accordance with certain industry standards. Many factors such as impulse, vibration, mechanical shock, and improper assembly may affect the integrity of the fitting connection.

Midland Industries recommends sufficient testing be conducted to ensure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. Working pressure ratings are capable of a 4 to 1 minimum burst. All steel fittings meet or exceed the minimum SAE pressure ratings. Always consider application and maximum pressure requirements when selecting fittings.

METHODS FOR INSTALLING FITTINGS

There are three methods for installing a fitting:

- Torque wrench
- Flats From Wrench Resistance
- Turns From Finger Tight

For Flare and NPSM Fittings, Midland recommends the flats from wrench resistance method be used whenever possible.

The differences in material, plating, and surface finish impacts the coefficient of friction when installing or connecting fittings. To minimize these variances, Midland recommends that fitting connections are lubricated when installed. Connections that are lubricated provide a more accurate installation torque, which results in fewer leaks.

USING A TORQUE WRENCH

The torque values given in the tables on the following pages are for reference purposes only based on industry standard practice and for low carbon steel mating with steel/iron components. Actual torque values may need to be adjusted due to variances described above.

SAE recommends always making a wet (lubricated) installation or connection to reduce friction on moving parts, O-rings, and variances in material and plating. The torque values in these tables are based off SAE values using a .17 coefficient of friction as per SAE J2593. Many hydraulic leaks are a result of over-torque, which causes excessive deformation of material or exceeds the yield strength of the material, which may reduce the load or clamping force between seal contacts.

If more than one value or range is given, use the lower value first and increase only if required. Over-torquing can damage a fitting or mating component.

TECHNICAL INFORMATION

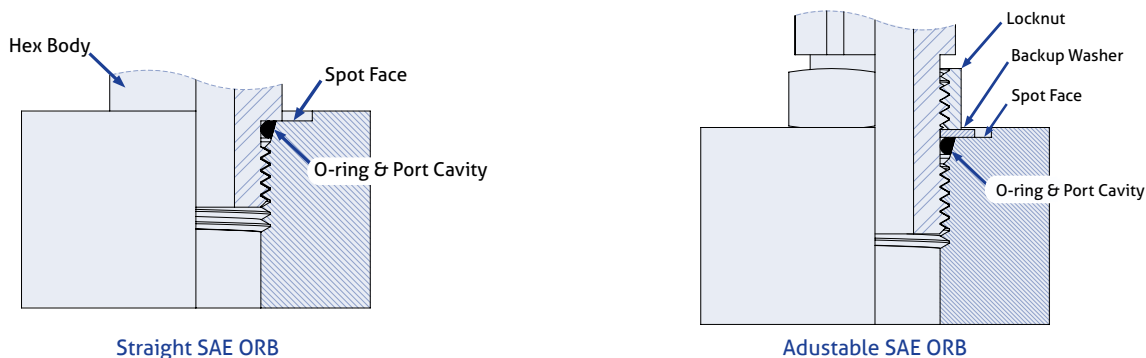
HYDRAULIC ADAPTERS

SAE O-Ring Boss Port Specifications

O-ring Boss ports (ORB) provide a seal by trapping the fitting's O-ring inside a port cavity. When a fitting is installed into the port, the O-ring is trapped between the fitting body hex or washer and port cavity.

Straight fittings include a hex, and sometimes an additional cylindrical shoulder below the hex and above the threads, to trap the O-ring in the port cavity.

Elbow and Tee fittings require a backup washer and a locknut above the O-ring on the threaded stud to permit a 360° orientation of the fitting around the port.



The following table lists the specifications for SAE O-Ring Boss Ports.

SAE O-Ring Boss Specifications								
Dash Size	Tube Size	Thread	SAE-ORB to JIC and Pipe Fittings*			SAE-ORB to ORFS Fittings**		
			Torque	Working Pressure		Torque	Working Pressure	
			Adjustable & Non-Adjustable	Adjustable	Non-Adjustable	Adjustable & Non-Adjustable	Adjustable	Non-Adjustable
			(ft-lbs) +25% -0%	(psi)	(psi)	(ft-lbs) +25% -0%	(psi)	(psi)
02	1/8	5/16-24	6	4500	4500	-	-	-
03	3/16	3/8-24	7	4500	4500	7	5800	9100
04	1/4	7/16-20	13	4500	4500	15	5800	9100
05	5/16	1/2-20	18	4500	4500	18	5800	9100
06	3/8	9/16-18	22	3600	4500	26	5800	9100
08	1/2	3/4-16	37	3600	4500	52	5800	9100
10	5/8	7/8-14	44	2900	3600	74	5800	9100
12	3/4	1-1/16-12	70	2900	3600	125	5800	5800
14	7/8	1-3/16-12	92	2300	2900	158	5800	5800
16	1	1-5/16-12	111	2300	2900	199	4500	5800
20	1 1/4	1-5/8-12	147	1800	2300	210	3600	3600
24	1 1/2	1-7/8-12	155	1800	2300	273	2900	3600
32	2	2-1/2-12	221	1450	1800	-	-	-

* = Light duty studs included on JIC, NPTF and NPSM fittings per SAE J1926/3 & J514
 ** = Heavy duty studs included on ORFS fittings per SAE J1926/2 & J1453

Note: Torque values are for wet torque and are allowed up to 25% the listed value according to SAE J2593.

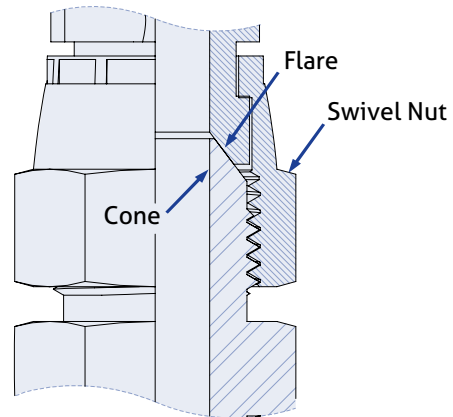
TECHNICAL INFORMATION

HYDRAULIC ADAPTERS

JIC Adapter Specifications

Male flared fittings include a conical nose with external threads for clamping.

A flared fitting or tube assembly is tightened against the cone with a swivel nut. By forcing the flare against the cone during the torquing process, the nose cone is slightly deformed and meshes to create a metal to metal seal between the flare and the cone.



The following table lists the specifications for JIC adapters.

JIC Specifications							
Dash Size	Tube Size	Thread	Working Pressure		Torque		
			Male (psi)	Female Swivel Nut (psi)	JIC Rigid (FFWR)	JIC Swivel (FFWR)	Bulkhead Locknut (ft-lbs) +25% -0%
02	1/8	5/16-24	5000	5000	1/4 - 1/2	2	4
03	3/16	3/8-24	5000	5000	1/4 - 1/2	2	6
04	1/4	7/16-20	5000	4500	1/4 - 1/2	2	10
05	5/16	1/2-20	5000	4000	1/4 - 1/2	2	13
06	3/8	9/16-18	5000	4000	1/4 - 1/2	2	16
08	1/2	3/4-16	4500	4000	1/4 - 1/2	2	27
10	5/8	7/8-14	3500	3000	1/4 - 1/2	1 1/2	32
12	3/4	1-1/16-12	3500	3000	1/4 - 1/2	1 1/2	52
14	7/8	1-3/16-12	3000	2500	1/4 - 1/2	1 1/2	66
16	1	1-5/16-12	3000	2500	1/4 - 1/2	1 1/2	85
20	1 1/4	1-5/8-12	2500	2000	1/4 - 1/2	1	111
24	1 1/2	1-7/8-12	2000	1500	1/4 - 1/2	1	114
32	2	2-1/2-12	1500	1125	1/4 - 1/2	1	162

Values are per SAE J514

It has been my observation that most people get ahead during the time that others waste. -Henry Ford

TECHNICAL INFORMATION

HYDRAULIC ADAPTERS

Pipe & Pipe Swivel Adapter Specifications

NPSM fittings include an inverted 60° cone inside an internally threaded swivel union nut. Male NPTF fittings that have a 30° internal chamfer that make a 60° inverted cone, will mate with NPSM swivel unions.

NOTE: THE MATING MALE THREADS MUST INCLUDE AN INSIDE CHAMFER ON THE END OF THE FITTING THAT MATES WITH THE INVERTED CONE. THREADS ARE FOR CLAMPING FORCE ONLY AND THE SEALING OCCURS ON A SMALL RADIAL SECTION BETWEEN THE MALE FITTING INTERNAL CHAMFER AND THE SWIVEL UNION INVERTED CONE.

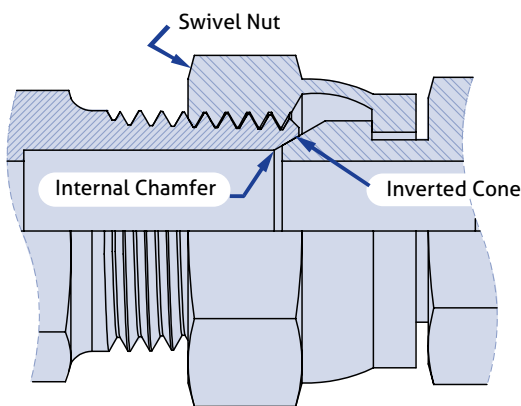


Fig. 1 F & NPSM Union

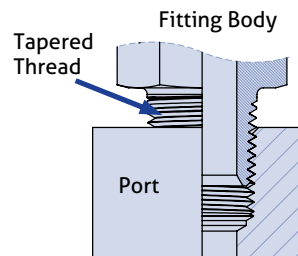


Fig. 2 & NPTF Assembly

NPT and NPTF pipe threads seal by wedging the tapered threads through deformation into each other. Both of these threads require thread sealants to complete a seal.

The following table lists the specifications for NPT, NPTF, and NPSM Pipe adapters.

NPT, NPTF, and NPSM Pipe Specifications						
Dash Size	Thread Size	Major OD* (inch)	Working Pressure		Torque	
			NPT, NPTF Male and Female	NPSM Female Swivel Nut	NPT, NPTF	NPSM Swivel Union
			(psi)	(psi)	(TFFT)	(FFWR)
02	1/8-27	.405	5000	5000	2-3	2
04	1/4-18	.540	4000	5000	2-3	2
06	3/8-18	.675	3000	4000	2-3	2
08	1/2-14	.84	3000	3500	2-3	2
12	3/4-14	1.050	2500	2250	2-3	2
16	1-11 1/2	1.315	2000	2000	1 1/2 - 2 1/2	1 1/2
20	1 1/4-11 1/2	1.660	1150	1625	1 1/2 - 2 1/2	1 1/2
24	1 1/2-11 1/2	1.900	1000	1250	1 1/2 - 2 1/2	1 1/2
32	2-11 1/2	2.375	1000	1125	1 1/2 - 2 1/2	1 1/2

Values are per SAE J514 & J2593

Table 1: NPT, NPTF, and NPSM Pipe Specifications

Folks who never do any more than they are paid for, never get paid for any more than they do.

-Elebert Hubbard

TECHNICAL INFORMATION

HYDRAULIC ADAPTERS

O-ring Face Seal Adapter Specifications

O-ring face seal fittings include a precision groove in the face of the male fitting. Sealing occurs when an O-ring is trapped in the groove by a smooth flat flange that is clamped against the face with a nut or nut and sleeve. The flat flange may be formed or brazed onto the end of a tube, or is machined on a fitting.

There are two SAE groove types:

- Type A: The original style A O-ring has no retaining ledge.
- Type B: The Type B groove has a retaining ledge (half dovetail) that improves O-ring retention. The Type B style is more commonly found and is a design improvement over the Type A.

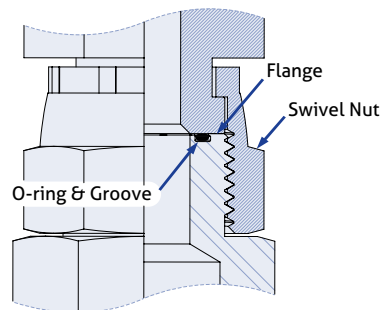


Figure 9: ORFS Fitting Assembly

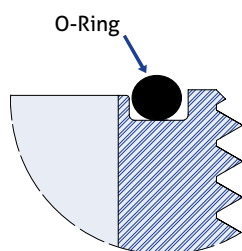


Figure 10: Detail View of Cross Section of Groove Type A

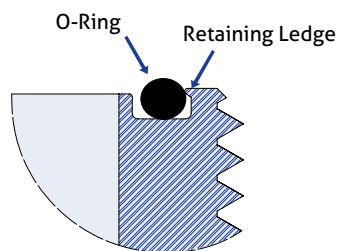


Figure 11: View of Groove Type B

The following table lists the specifications for O-ring Face Seal adapters.

ORFS Specifications								
Dash Size	Tube Size	Thread Size	Working Pressure		Torque			
			Male	Female Swivel Nut	Male & Female	Bulkhead Locknut	Tube Nuts	Swivel Nuts
			(psi)	(psi)	(ft-lbs) +25% -0%	(ft-lbs) +25% -0%	WR	FWR
04	1/4	9/16-18	6000	6000	18	16	1/4-1/2	1/2-3/4
06	3/8	11/16-16	6000	6000	29	22	1/4-1/2	1/2-3/4
08	1/2	13/16-16	6000	6000	41	29	1/4-1/2	1/2-3/4
10	5/8	1-14	6000	6000	44	44	1/4-1/2	1/2-3/4
12	3/4	1-3/16-12	6000	6000	66	66	1/4-1/2	1/3-1/2
16	1	1-7/16-12	6000	5000	92	92	1/4-1/2	1/3-1/2
20	1 1/4	1-11/16-12	4000	4000	125	111	1/4-1/2	1/3-1/2
24	1 1/2	2-12	4000	3000	147	125	1/4-1/2	1/3-1/2

Note: Values are per SAE J2593 & J1453

Torque values are for wet installation of steel components. Reduce torque values for softer material components.

Figure 4: ORFS Specifications

TECHNICAL INFORMATION

HYDRAULIC ADAPTERS

BSPT, BSPP and Metric Adapter Specifications

BSPT and Metric tapered threads install and work in the same manner as NPT and NPTF.

Male BSPP fittings include an inverted 60° cone inside an internally threaded swivel union nut. Male BSPP fittings that have a 30° internal chamfer that make a 60° inverted cone, will mate with Female BSPP swivel unions.

NOTE: THE MATING MALE THREADS MUST INCLUDE AN INSIDE CHAMFER ON THE END OF THE FITTING THAT MATES WITH THE INVERTED CONE. THREADS ARE FOR CLAMPING FORCE ONLY AND THE SEALING OCCURS ON A SMALL RADIAL SECTION BETWEEN THE MALE FITTING INTERNAL CHAMFER AND THE SWIVEL UNION INVERTED CONE.

DIN swivel unions have a 24° inverted cone and may be installed into DIN bite-ring compression fittings. To provide enhanced performance, an O-ring is sometimes included in the cone of some DIN swivel unions.

British Standard Pipe Parallel (BSPP) and Metric Parallel threaded ports do not include a port cavity like the O-ring Boss or ISO 6149 port. Instead, an O-ring sits on top of the spot face or external surface and is surrounded by a metal retaining ring or other retaining component to trap the O-ring between the fitting hex, body, and spot face.

Elbow and Tee fittings have a locknut, backup washer, O-ring and retaining washer to permit 360° orientation around the axis of the port.

The following table lists the specifications for **BSPP & BSPT Adapters**

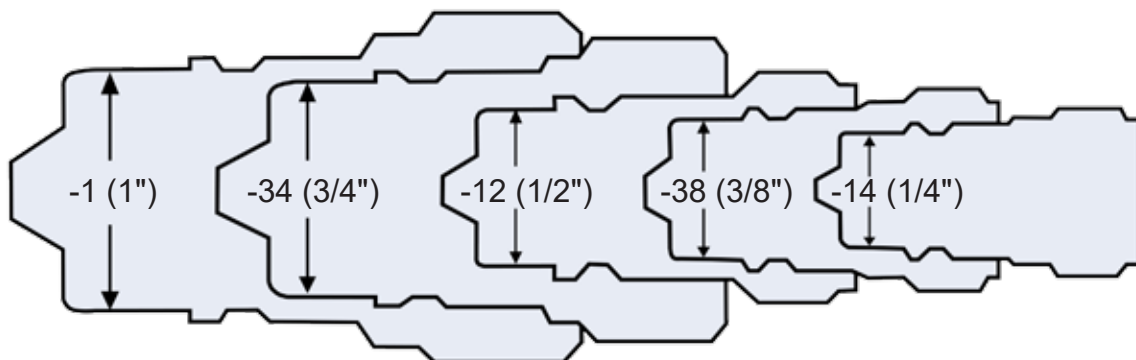
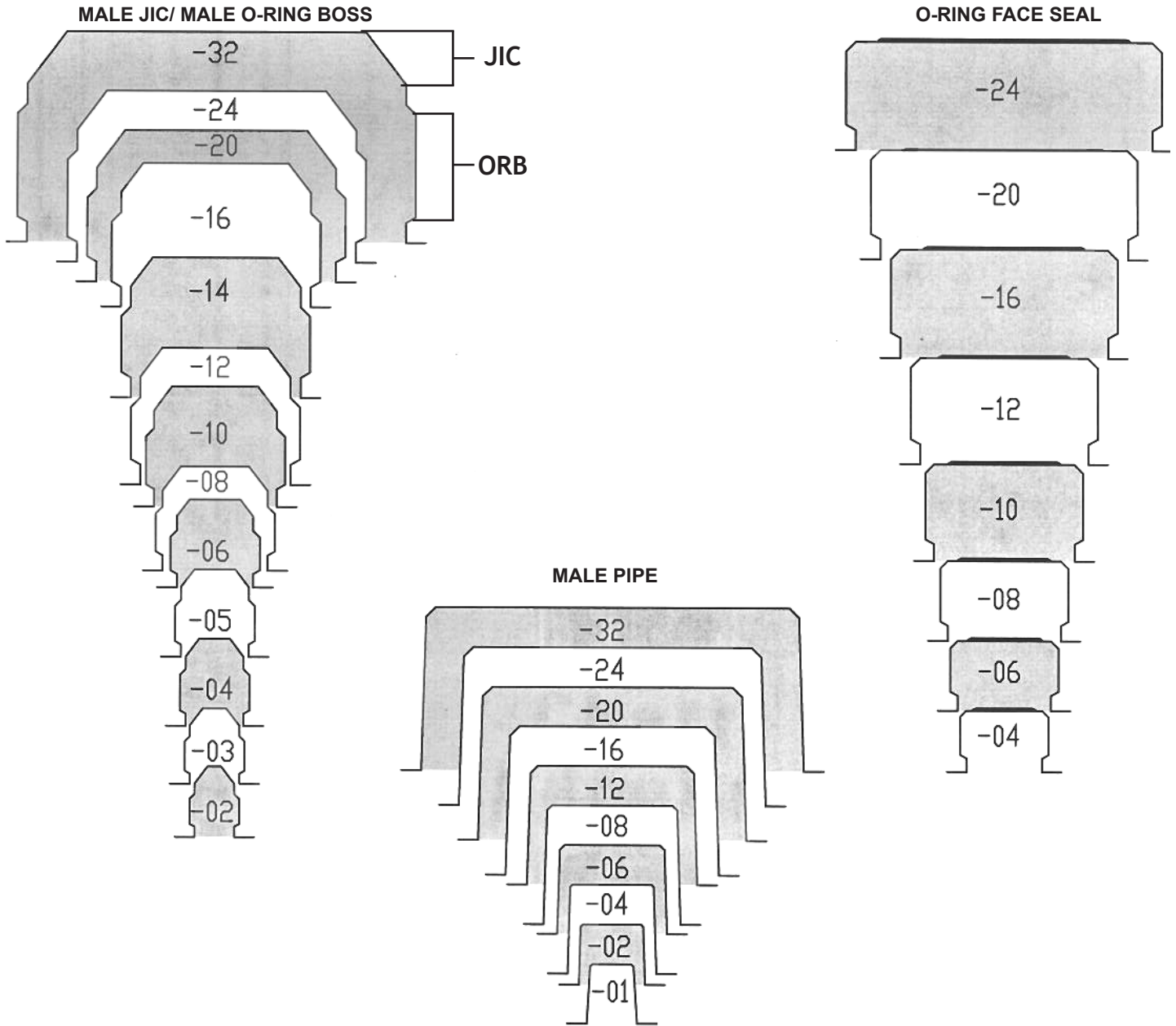
BSPP & BSPT Specifications				
Dash Size	BSPT & BSPP		Torque	
	THREAD SIZE	MAJOR OD ^o (inch)	BSPP Swivel Union	BSPT
02	1/8-28	0.383	2	2-3
04	1/4-19	0.518	2	2-3
06	3/8-19	0.656	2	2-3
08	1/2-14	0.825	2	2-3
10	5/8-14	0.929	2	2-3
12	3/4-14	1.041	2	2-3
16	1-11	1.309	1 1/2	1 1/2 - 2 1/2
20	1 1/4-11	1.650	1 1/2	1 1/2 - 2 1/2
24	1 1/2-11	1.882	1 1/2	1 1/2 - 2 1/2
32	2-11	2.347	1 1/2	1 1/2 - 2 1/2

The following table lists the specifications for **Metric Adapters**

Metric DIN 3852-1 Threads	
Dash Size	THREAD SIZE (mm)
08	8 x 1.0
10	10 x 1.0
12	12 x 1.5
14	14 x 1.5
16	16 x 1.5
18	18 x 1.5
20	20 x 1.5
22	22 x 1.5
24	24 x 1.5
26	26 x 1.5
27	27 x 2.0
30	30 x 2.0
33	33 x 2.0
39	39 x 2.0
42	42 x 2.0
48	48 x 2.0
60	60 X 2.0

Values are from DIN 3852-1

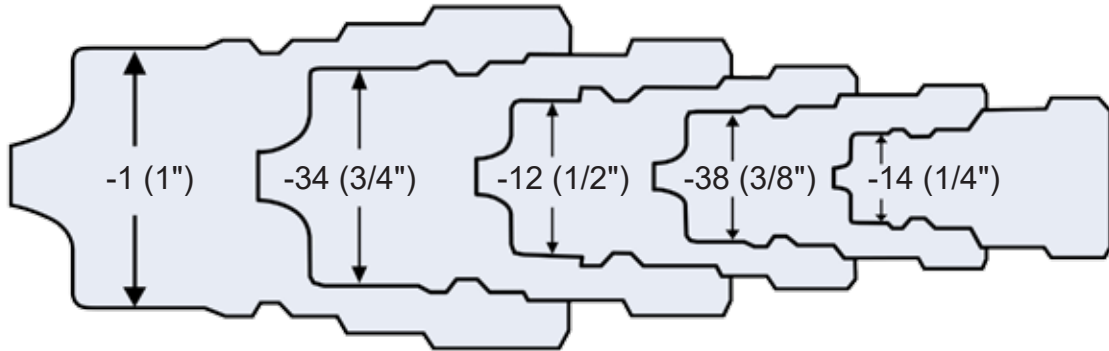
PROFILE SIZE CHART



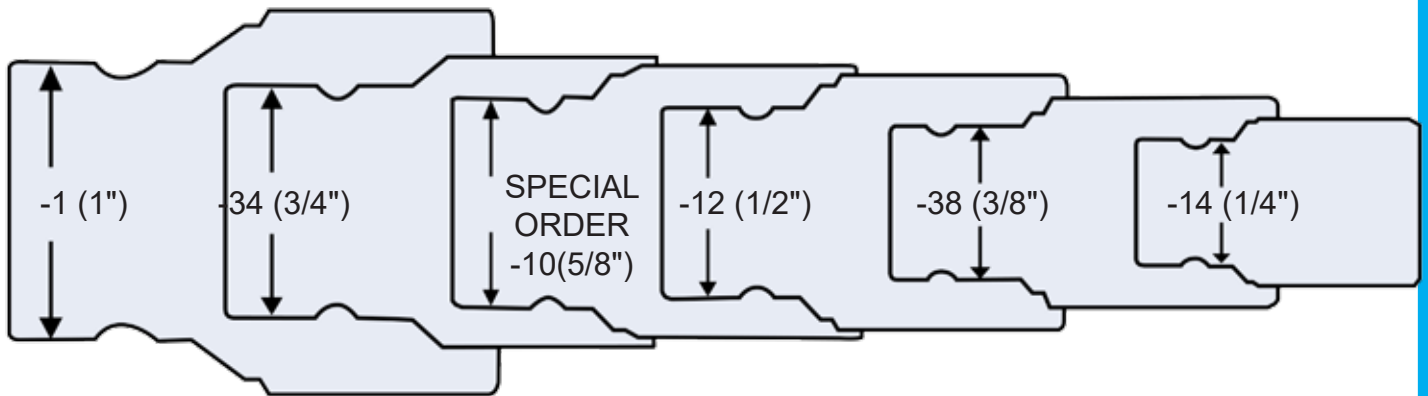
AG INTERCHANGE - NV SERIES

TECHNICAL INFORMATION

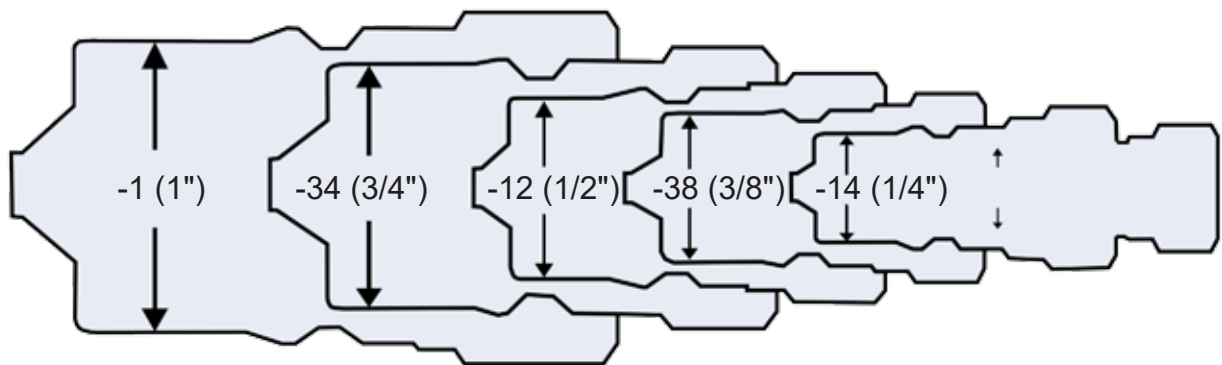
HYDRAULIC ADAPTERS



ISO 7241 - 1 - ISO A - ANV SERIES



ISO 16028 - FF SERIES



ISO 7241 - 1 ISO B - HNV SERIES

STEEL PIPE SWIVEL ADAPTERS

HYDRAULIC ADAPTERS

MALE PIPE SWIVEL ADAPTER

SAE 140130



PART #	MALE PIPE 1	FEMALE NPSM 2	
140422	1/8	1/8	----
140442	1/4	1/8	----
140444	1/4	1/4	----
140464	3/8	1/4	----
140466	3/8	3/8	----
140468	3/8	1/2	----
140484	1/2	1/4	----
140486	1/2	3/8	----
140488	1/2	1/2	----
1404812	1/2	3/4	----
1404126	3/4	3/8	----
1404128	3/4	1/2	----
14041212	3/4	3/4	----
14041216	3/4	1	----
14041612	1	3/4	----
14041616	1	1	----
14041620	1	1-1/4	----
14042024	1-1/4	1-1/2	----
14042016	1-1/4	1	----
14042020	1-1/4	1-1/4	----
14042424	1-1/2	1-1/2	----
14043232	2	2	----

1404 2045R 1210 9205R 0107

FEMALE PIPE SWIVEL ADAPTER

SAE 140131



PART #	FEMALE PIPE 1	FEMALE NPSM 2	
140522	1/8	1/8	----
140542	1/4	1/8	----
140544	1/4	1/4	----
140546	1/4	3/8	----
140564	3/8	1/4	----
140566	3/8	3/8	----
140586	1/2	3/8	----
140568	3/8	1/2	----
140584	1/2	1/4	----
140588	1/2	1/2	----
1405812	1/2	3/4	----
1405128	3/4	1/2	----
14051212	3/4	3/4	----
14051216	3/4	1	----
14051612	1	3/4	----
14051616	1	1	----
14052020	1-1/4	1-1/4	----
14052424	1-1/2	1-1/2	----
14053232	2	2	----

1405 2046R 1212 9255 C207

MALE PIPE ELBOW SWIVEL ADAPTER

SAE 140230



PART #	MALE PIPE 1	FEMALE NPSM 2	
150122	1/8	1/8	----
150124	1/8	1/4	----
150142	1/4	1/8	----
150144	1/4	1/4	----
150146	1/4	3/8	----
150148	1/4	1/2	----
150164	3/8	1/4	----
150166	3/8	3/8	----
1501612	3/8	3/4	----
150184	1/2	1/4	----
150186	1/2	3/8	----
150188	1/2	1/2	----
1501126	3/4	3/8	----
1501128	3/4	1/2	----
15011212	3/4	3/4	----
15011216	3/4	1	----
1501168	1	1/2	----
15011612	1	3/4	----
15011616	1	1	----
15012016	1-1/4	1	----
15012020	1-1/4	1-1/4	----
15013232	2	2	----

1501 2047R 1218 9405 2107

FEMALE UNION ELBOW SWIVEL ADAPTER

SAE 140231



PART #	FEMALE PIPE 1	FEMALE NPSM 2	
150222	1/8	1/8	----
150242	1/4	1/8	----
150244	1/4	1/4	----
150246	1/4	3/8	----
150264	3/8	1/4	----
150266	3/8	3/8	----
150268	3/8	1/2	----
150284	1/2	1/4	----
150286	1/2	3/8	----
150288	1/2	1/2	----
1502812	1/2	3/4	----
1502128	3/4	1/2	----
15021212	3/4	3/4	----
15021616	1	1	----
15022020	1-1/4	1-1/4	----
15022424	1-1/2	1-1/2	----

1502 2207 1216 9455R

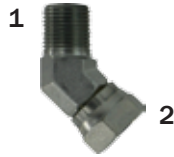
WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

FEMALE PIPE SWIVELS

HYDRAULIC ADAPTERS

MALE 45° PIPE ELBOW SWIVEL ADAPTER

SAE 140330



PART #	MALE PIPE 1	FEMALE NPSM 2	
150322	1/8	1/8	----
150344	1/4	1/4	----
150346	1/4	3/8	----
150364	3/8	1/4	----
150366	3/8	3/8	----
150368	3/8	1/2	----
150384	1/2	1/4	----
150386	1/2	3/8	----
150388	1/2	1/2	----
1503812	1/2	3/4	----
1503128	3/4	1/2	----
15031212	3/4	3/4	----
15031216	3/4	1	----
15031612	1	3/4	----
15031616	1	1	----
15031620	1	1-1/4	----
15032020	1-1/4	1-1/4	----

1503 2049R 3107 1214 9355R

FEMALE 45° UNION ELBOW SWIVEL ADAPTER

SAE 140331



PART #	FEMALE PIPE 1	FEMALE NPSM 2	
150422	1/8	1/8	----
150444	1/4	1/4	----
150466	3/8	3/8	----
150488	1/2	1/2	----
15041212	3/4	3/4	----
15041616	1	1	----

1504 2050R 1249 9385R

MALE SWIVEL BRANCH TEE



PART #	FEMALE NPSM 1 & 2	MALE PIPE 3	
160122	1/8	1/8	----
160144	1/4	1/4	----
160166	3/8	3/8	----
160188	1/2	1/2	----
16011212	3/4	3/4	----
16011616	1	1	----

1601 2254R 1258 9406R

FEMALE SWIVEL TEE



PART #	FEMALE NPSM 1 & 2	FEMALE PIPE 3	
160244	1/4	1/4	----
160266	3/8	3/8	----
160288	1/2	1/2	----
16021212	3/4	3/4	----
16021616	1	1	----

1602 2253R 1259 9456R

FEMALE SWIVEL UNION TEE



PART #	FEMALE NPSM 1,2 & 3	
160344	1/4	----
160366	3/8	----
160388	1/2	----
16031212	3/4	----
16031616	1	----

1603 2255 1223 9705R

STRAIGHTS STEEL JIC FLARE 37°

HYDRAULIC ADAPTERS

LONG JIC TUBE NUT

SAE 070111



PART #	TUBE O.D	JIC THREAD SIZE	
03044	1/4	7/16-20	----
03046	3/8	9/16-18	----
03048	1/2	3/4-16	----
030410	5/8	7/8-14	----
030412	3/4	1-1/16-12	----
030416	1	1-5/16-12	----

304 221000 0304 C5115

SAE 070112
MS 51532



PART #	TUBE O.D.	JIC THREAD SIZE	
0304C2	1/8	5/16-24	----
0304C3	3/16	3/8-24	----
0304C4	1/4	7/16-20	----
0304C5	5/16	1/2-20	----
0304C6	3/8	9/16-18	----
0304C8	1/2	3/4-16	----
0304C10	5/8	7/8-14	----
0304C12	3/4	1-1/16-12	----
0304C14	7/8	1-3/16-12	----
0304C16	1	1-5/16-12	----
0304C20	1-1/4	1-5/8-12	----
0304C24	1-1/2	1-7/8-12	----
0304C32	2	2-1/2-12	----

820 304 210292 FNTX 1329 C5129

JIC TUBE NUT

(SLEEVE REQUIRED)

SAE 070110
MS 51531



PART #	TUBE O.D	JIC THREAD SIZE	
03182	1/8	5/16-24	----
03183	3/16	3/8-24	----
03184	1/4	7/16-20	----
03185	5/16	1/2-20	----
03186	3/8	9/16-18	----
03188	1/2	3/4-16	----
031810	5/8	7/8-14	----
031812	3/4	1-1/16-12	----
031814	7/8	1-3/16-12	----
031816	1	1-5/16-12	----
031820	1-1/4	1-5/8-12	----
031824	1-1/2	1-7/8-12	----

318 1290 BTX 1311 C5105

JIC TUBE SLEEVE

SAE 070115
MS 51533



PART #	TUBE O.D	
03192	1/8	----
03193	3/16	----
03194	1/4	----
03195	5/16	----
03196	3/8	----
03198	1/2	----
031910	5/8	----
031912	3/4	----
031914	7/8	----
031916	1	----
031920	1-1/4	----
031924	1-1/2	----
031932	2	----

319 900605 TX 1253 C5165

JIC TUBE UNION

SAE 070101
MS 51501



PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
240322	5/16-24	5/16-24	----
240333	3/8-24	3/8-24	----
240344	7/16-20	7/16-20	----
240355	1/2-20	1/2-20	----
240366	9/16-18	9/16-18	----
240364	9/16-18	7/16-20	----
240384	3/4-16	7/16-20	----
240388	3/4-16	3/4-16	----
240386	3/4-16	9/16-18	----
24031010	7/8-14	7/8-14	----
2403108	7/8-14	3/4-16	----
24031212	1-1/16-12	1-1/16-12	----
2403126	1-1/16-12	9/16-18	----
2403128	1-1/16-12	3/4-16	----
24031210	1-1/16-12	7/8-14	----
24031414	1-3/16-12	1-3/16-12	----
24031616	1-5/16-12	1-5/16-12	----
24031612	1-5/16-12	1-1/16-12	----
24032016	1-5/8-12	1-5/16-12	----
24032020	1-5/8-12	1-5/8-12	----
240324	1-7/8-12	1-7/8-12	----
240332	2-1/2-12	2-1/2-12	----

2403 2027 HTX 1204 C5305

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov



STRAIGHTS STEEL JIC FLARE 37°

HYDRAULIC ADAPTERS

JIC MALE CONNECTOR

SAE 070102
MS 51500



PART #	JIC THREAD SIZE 1	MALE PIPE THREAD 2	
240422	5/16-24	1/8	----
240432	3/8-24	1/8	----
240434	3/8-24	1/4	----
240442	7/16-20	1/8	----
240444	7/16-20	1/4	----
240446	7/16-20	3/8	----
240448	7/16-20	1/2	----
240462	9/16-18	1/8	----
240464	9/16-18	1/4	----
240466	9/16-18	3/8	----
240468	9/16-18	1/2	----
2404612	9/16-18	3/4	----
240484	3/4-16	1/4	----
240486	3/4-16	3/8	----
240488	3/4-16	1/2	----
2404812	3/4-16	3/4	----
2404816	3/4-16	1	----
2404104	7/8-14	1/4	----
2404106	7/8-14	3/8	----
2404108	7/8-14	1/2	----
24041012	7/8-14	3/4	----
2404126	1-1/16-12	3/8	----
2404128	1-1/16-12	1/2	----
24041212	1-1/16-12	3/4	----
24041216	1-1/16-12	1	----
24041612	1-5/16-12	3/4	----
24041616	1-5/16-12	1	----
24041620	1-5/16-12	1-1/4	----
24041624	1-5/16-12	1-1/2	----
24042012	1-5/8-12	3/4	----
24042016	1-5/8-12	1	----
24042020	1-5/8-12	1-1/4	----
24042024	1-5/8-12	1-1/2	----
24042416	1-7/8-12	1	----
24042420	1-7/8-12	1-1/4	----
24042424	1-7/8-12	1-1/2	----
24042432	1-7/8-12	2	----
24043224	2-1/2-12	1-1/2	----
24043232	2-1/2-12	2	----

2404 2021R FTX 1202R C5205 816

JIC FEMALE CONNECTOR

SAE 070103
MS 51503



PART #	JIC THREAD SIZE 1	FEMALE PIPE SIZE 2	
240522	5/16-24	1/8	----
240532	3/8-24	1/8	----
240542	7/16-20	1/8	----
240544	7/16-20	1/4	----
240546	7/16-20	3/8	----
240564	9/16-18	1/4	----
240566	9/16-18	3/8	----
240584	3/4-16	1/4	----
240586	3/4-16	3/8	----
240588	3/4-16	1/2	----
2405812	3/4-16	3/4	----
2405106	7/8-14	3/8	----
2405108	7/8-14	1/2	----
2405128	1-1/16-12	1/2	----
24051212	1-1/16-12	3/4	----
24051216	1-1/16-12	1	----
24051612	1-5/16-12	3/4	----
24051616	1-5/16-12	1	----
24052020	1-5/8-12	1-1/4	----

2405 2022R GTX 1230R C5255

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

STRAIGHTS STEEL JIC FLARE 37°

HYDRAULIC ADAPTERS

JIC REDUCER/ EXPANDER

SAE 070123 1



2

PART #	FEMALE JIC THREAD SIZE 1	MALE JIC THREAD SIZE 2	
240664	9/16-18	7/16-20	----
240665	9/16-18	1/2-20	----
240668	9/16-18	3/4-16	----
240684	3/4-16	7/16-20	----
240686	3/4-16	9/16-18	----
2406812	3/4-16	1-1/16-12	----
2406104	7/8-14	7/16-20	----
2406106	7/8-14	9/16-18	----
2406108	7/8-14	3/4-16	----
2406124	1-1/16-12	7/16-20	----
2406126	1-1/16-12	9/16-18	----
2406128	1-1/16-12	3/4-16	----
24061210	1-1/16-12	7/8-14	----
24061216	1-1/16-12	1-5/16-12	----
2406164	1-5/16-12	7/16-20	----
2406166	1-5/16-12	9/16-18	----
2406168	1-5/16-12	3/4-16	----
24061612	1-5/16-12	1-1/16-12	----
24061620	1-5/16-12	1-5/8-12	----
2406208	1-5/8-12	3/4-16	----
24062012	1-5/8-12	1-1/16-12	----
24062012	1-5/8-12	1-1/16-12	----
24062016	1-5/8-12	1-5/16-12	----
24062416	1-7/8-12	1-5/16-12	----
24062420	1-7/8-12	1-5/8-12	----
24063224	2-1/2-12	1-7/8-12	----

2406 C5015 2215 TRTX 1246

PLUG

SAE 070109
MS 51518



PART #	TUBE O.D.	JIC THREAD SIZE	
24082	1/8	5/16-24	----
24083	3/16	3/8-24	----
24084	1/4	7/16-20	----
24085	5/16	1/2-20	----
24086	3/8	9/16-18	----
24088	1/2	3/4-16	----
240810	5/8	7/8-14	----
240812	3/4	1-1/16-12	----
240814	7/8	1-3/16-12	----
240816	1	1-5/16-12	----
240820	1-1/4	1-5/8-12	----
240824	1-1/2	1-7/8-12	----
240832	2	2-1/2-12	----

2408 430549 PNTX 1254 C5229

STEEL 37° JIC FLARE SHAPES

JIC UNION ELBOW

SAE 070201 1
MS 51505



2

PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
250022	5/16-24	5/16-24	----
250044	7/16-20	7/16-20	----
250055	1/2-20	1/2-20	----
250066	9/16-18	9/16-18	----
250064	9/16-18	7/16-20	----
250088	3/4-16	3/4-16	----
250086	3/4-16	9/16-18	----
25001010	7/8-14	7/8-14	----
25001212	1-1/16-12	1-1/16-12	----
25001612	1-5/16-12	1-1/16-12	----
25001616	1-5/16-12	1-5/16-12	----
25002020	1-5/8-12	1-5/8-12	----
25002424	1-7/8-12	1-7/8-12	----
25003232	2-1/2-12	2-1/2-12	----

2500 2039 1234 C5505 821

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer.
 For more information, visit www.P65Warnings.ca.gov

STRAIGHTS STEEL JIC FLARE 37°

HYDRAULIC ADAPTERS

JIC MALE ELBOW

SAE 070202
MS 51504



PART #	JIC THREAD SIZE 1	MALE PIPE SIZE 2	
250122	5/16-24	1/8	----
250142	7/16-20	1/8	----
250144	7/16-20	1/4	----
250146	7/16-20	3/8	----
250148	7/16-20	1/2	----
250162	9/16-18	1/8	----
250164	9/16-18	1/4	----
250166	9/16-18	3/8	----
250168	9/16-18	1/2	----
2501612	9/16-18	3/4	----
250184	3/4-16	1/4	----
250186	3/4-16	3/8	----
250188	3/4-16	1/2	----
2501812	3/4-16	3/4	----
2501816	3/4-16	1	----
2501106	7/8-14	3/8	----
2501108	7/8-14	1/2	----
2501128	1-1/16-12	1/2	----
25011212	1-1/16-12	3/4	----
25011216	1-1/16-12	1	----
25011612	1-5/16-12	3/4	----
25011616	1-5/16-12	1	----
25011620	1-5/16-12	1-1/4	----
25012016	1-5/8-12	1	----
25012020	1-5/8-12	1-1/4	----
25012024	1-5/8-12	1-1/2	----
25012420	1-7/8-12	1-1/4	----
25012424	1-7/8-12	1-1/2	----
25013232	2-1/2-12	2	----

1208R C5405 2501 2024R CTX 822

JIC FEMALE ELBOW

SAE 070203
MS 51506



PART #	JIC THREAD SIZE 1	FEMALE PIPE SIZE 2	
250242	7/16-20	1/8	----
250244	7/16-20	1/4	----
250246	7/16-20	3/8	----
250262	9/16-18	1/8	----
250264	9/16-18	1/4	----
250266	9/16-18	3/8	----
250268	9/16-18	1/2	----
250284	3/4-16	1/4	----
250286	3/4-16	3/8	----
250288	3/4-16	1/2	----
2502128	1-1/16-12	1/2	----
25021212	1-1/16-12	3/4	----
25021612	1-5/16-12	3/4	----
25021616	1-5/16-12	1	----
25022020	1-5/8-12	1-1/4	----

2502 2025R DTX 1240R C5455

JIC MALE 45° ELBOW

SAE 070302
MS 51508



PART #	JIC THREAD SIZE 1	MALE PIPE SIZE 2	
250322	5/16-24	1/8	----
250342	7/16-20	1/8	----
250344	7/16-20	1/4	----
250346	7/16-20	3/8	----
250362	9/16-18	1/8	----
250364	9/16-18	1/4	----
250366	9/16-18	3/8	----
250368	9/16-18	1/2	----
2503612	9/16-18	3/4	----
250384	3/4-16	1/4	----
250386	3/4-16	3/8	----
250388	3/4-16	1/2	----
2503106	7/8-14	3/8	----
2503108	7/8-14	1/2	----
25031012	7/8-14	3/4	----
25031212	1-1/16-12	3/4	----
25031216	1-1/16-12	1	----
25031616	1-5/16-12	1	----
25031620	1-5/16-12	1-1/4	----
25032016	1-5/8-12	1	----
25032020	1-5/8-12	1-1/4	----

2503 2023R VTX 1206R C5355 823

SHAPES STEEL JIV FLARE 37°

HYDRAULIC ADAPTERS

JIC MALE BRANCH TEE



PART #	JIC THREAD SIZE 1&2	PIPE THREAD SIZE 3	
260144	7/16-20	1/4	----
260166	9/16-18	3/8	----
260188	3/4-16	1/2	----
26011212	1-1/16-12	3/4	----

2601 2030R STX 1221R C5605

JIC FEMALE BRANCH TEE



SAE 070427
MS 51513

PART #	JIC THREAD SIZE 1 & 2	FEMALE PIPE SIZE 3	
260244	7/16-20	1/4	----
260266	9/16-18	3/8	----
260288	3/4-16	1/2	----

2602 2031R OTX 1228R C6566

JIC UNION TEE

SAE 070401
MS 51510



PART #	JIC THREAD SIZE 1 & 2	JIC THREAD SIZE 3	
260322	5/16-24	5/16-24	----
260333	3/8-24	3/8-24	----
260344	7/16-20	7/16-20	----
260366	9/16-18	9/16-18	----
260388	3/4-16	3/4-16	----
26031010	7/8-14	7/8-14	----
26031212	1-1/16-12	1-1/16-12	----
26031616	1-5/16-12	1-5/16-12	----

2603 2033 JTX 1220 C5705

STEEL BULKHEAD FITTINGS

LOCK NUT



SAE 070118
MS 51860

* Lock Nut no longer included on fittings

PART #	THREAD SIZE	
03062	5/16-24	----
03064	7/16-20	----
03065	1/2-20	----
03066	9/16-18	----
03068	3/4-16	----
030610	7/8-14	----
030612	1-1/16-12	----
030614	1-3/16-12	----
030616	1-5/16-12	----
030620	1-5/8-12	----

1306 894 210212 WLN 1332 C5624

JIC BULKHEAD UNION

SAE 070601
MS 51520



PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
270022	5/16-24	5/16-24	----
270044	7/16-20	7/16-20	----
270055	1/2-20	1/2-20	----
270066	9/16-18	9/16-18	----
27008	3/4-16	3/4-16	----
270010	7/8-14	7/8-14	----
270012	1-1/16-12	1-1/16-12	----
270014	1-3/16-12	1-3/16-12	----
270016	1-5/16-12	1-5/16-12	----

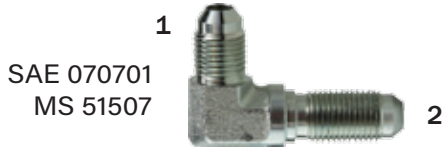
2700 2041R WTX 1260 C5325

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

STEEL BULKHEAD FITTINGS

HYDRAULIC ADAPTERS

JIC BULKHEAD UNION ELBOW



SAE 070701
MS 51507

PART #	JIC THREAD SIZE 1	JIC BULKHEAD THREAD 2	
27014	7/16-20	7/16-20	----
27015	1/2-20	1/2-20	----
27016	9/16-18	9/16-18	----
27018	3/4-16	3/4-16	----
270110	7/8-14	7/8-14	----
270112	1-1/16-12	1-1/16-12	----
270116	1-5/16-12	1-5/16-12	----
270120	1-5/8-12	1-5/8-12	----

2701 2043R WETX 1262 C5525

JIC BULKHEAD UNION 45° ELBOW



SAE 070801
MS 51509

PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
27024	7/16-20	7/16-20	----
27026	9/16-18	9/16-18	----
27028	3/4-16	3/4-16	----
270210	7/8-14	7/8-14	----
270212	1-1/16-12	1-1/16-12	----
270216	1-5/16-12	1-5/16-12	----

2702 2042 WNTX 1261 C5375

JIC BULKHEAD BRANCH TEE

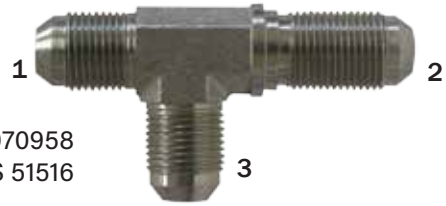


SAE 070959
MS 51515

PART #	JIC THREAD SIZE 1&2	JIC THREAD SIZE 3	
27034	7/16-20	7/16-20	----
27036	9/16-18	9/16-18	----
27038	3/4-16	3/4-16	----
270310	7/8-14	7/8-14	----
270312	1-1/16-12	1-1/16-12	----
270316	1-5/16-12	1-5/16-12	----

2703 203002 WJT 1283 C5725

JIC BULKHEAD RUN TEE



SAE 070958
MS 51516

PART #	JIC THREAD SIZE 1&3	JIC THREAD SIZE 2	
27044	7/16-20	7/16-20	----
27046	9/16-18	9/16-18	----
27048	3/4-16	3/4-16	----
270410	7/8-14	7/8-14	----
270412	1-1/16-12	1-1/16-12	----
270416	1-5/16-12	1-5/16-12	----

2704 203008 WJJT 1284 C5726

JIC TO FEMALE PIPE BULKHEAD



PART #	JIC THREAD	FEMALE PIPE SIZE 2	
270544	7/16-20		----
270566	9/16-18	3/8	----
270588	3/4-16	1/2	----
27051212	1-1/16-12	3/4	----
27051616	1-5/16-12	1	----
27052020	1-5/8-12	1-1/4	28.45

2705 2239 WGTX C5275

JIC TO MALE PIPE BULKHEAD



PART #	JIC THREAD SIZE 1	PIPE THREAD SIZE 2	
270644	7/16-20	1/4	----
270666	9/16-18	3/8	----
270688	3/4-16	1/2	----
27061212	1-1/16-12	3/4	----
27061616	1-5/16-12	1	----

2706 2240

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STEEL PIPE FITTINGS

HYDRAULIC ADAPTERS

PIPE COUPLING

910

SAE 140138



PART #	FEMALE PIPE 1	FEMALE PIPE 2	
50002	1/8	1/8	----
500042	1/4	1/8	----
50004	1/4	1/4	----
500064	3/8	1/4	----
500066	3/8	3/8	----
500084	1/2	1/4	----
500086	1/2	3/8	----
50008	1/2	1/2	----
5000128	3/4	1/2	----
50001212	3/4	3/4	----
5000168	1	1/2	----
50001612	1	3/4	----
500016	1	1	----
50002020	1-1/4	1-1/4	----
500024	1-1/2	1-1/2	----
500032	2	2	----

5000 2096 GG 1273 C3309

HEX PIPE NIPPLES

SAE 140137



PART #	MALE PIPE 1	MALE PIPE 2	
54042	1/8	1/8	----
540442	1/4	1/8	----
54044	1/4	1/4	----
540462	3/8	1/8	----
540464	3/8	1/4	----
54046	3/8	3/8	----
540484	1/2	1/4	----
540486	1/2	3/8	----
54048	1/2	1/2	----
5404126	3/4	3/8	----
5404128	3/4	1/2	----
540412	3/4	3/4	----
5404166	1	3/8	----
5404168	1	1/2	----
54041612	1	3/4	----
540416	1	1	----
54042012	1-1/4	3/4	----
54042016	1-1/4	1	----
540420	1-1/4	1-1/4	----
54042412	1-1/2	3/4	----
54042416	1-1/2	1	----
54042420	1-1/2	1-1/4	----
540424	1-1/2	1-1/2	----
54043224	2	1-1/2	----

5404 2083 FF 1252 C3069 911

EXPANDING PIPE ADAPTER

SAE 140139



PART #	MALE PIPE 1	FEMALE PIPE 2	
540522	1/8	1/8	----
540524	1/8	1/4	----
540542	1/4	1/8	----
540544	1/4	1/4	----
540548	1/4	1/2	----
540564	3/8	1/4	----
540566	3/8	3/8	----
540568	3/8	1/2	----
5405612	3/8	3/4	----
540588	1/2	1/2	----
5405812	1/2	3/4	----
5405816	1/2	1	----
54051212	3/4	3/4	----
54051216	3/4	1	----
54051220	3/4	1-1/4	----
54051616	1	1	----
54051620	1	1-1/4	----
54052020	1-1/4	1-1/4	----
54052024	1-1/4	1-1/2	----
54052424	1-1/2	1-1/2	----

920 5405 2040 FG-(R) 1274 C3209(R)

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov



5406 2081 PTR 1250 C3109 912

STRAIGHTS STEEL JIC FLARE 37°

HYDRAULIC ADAPTERS

HEX REDUCER BUSHING

SAEF1
140140



PART #	MALE PIPE	FEMALE PIPE	
540642	1/4	1/8	----
540662	3/8	1/8	----
540664	3/8	1/4	----
540682	1/2	1/8	----
540684	1/2	1/4	----
540686	1/2	3/8	----
5406124	3/4	1/4	----
5406126	3/4	3/8	----
5406128	3/4	1/2	----
5406164	1	1/4	----
5406166	1	3/8	----
5406168	1	1/2	----
54061612	1	3/4	----
5406206	1-1/4	3/8	----
5406208	1-1/4	1/2	----
54062012	1-1/4	3/4	----
54062016	1-1/4	1	----
5406248	1-1/2	1/2	----
54062412	1-1/2	3/4	----
54062416	1-1/2	1	----
54062420	1-1/2	1-1/4	----
54063212	2	3/4	----
54063216	2	1	----
54063220	2	1-1/4	----
54063224	2	1-1/2	----

HEX HEAD PLUG

SAE 130109E



PART #	MALE PIPE	
5406P2	1/8	----
5406P4	1/4	----
5406P6	3/8	----
5406P8	1/2	----
5406P12	3/4	----
5406P16	1	----
5406P20	1-1/4	----
5406P24	1-1/2	----
5406P32	2	----

933 5406P 2082 HP 1251 C3159

HOLLOW HEX PLUG

SAE 130109



PART #	MALE PIPE	
5406HHP2	1/8	----
5406HHP4	1/4	----
5406HHP6	3/8	----
5406HHP8	1/2	----
5406HHP12	3/4	----
5406HHP16	1	----
5406HHP20	1-1/4	----
5406HHP24	1-1/2	----

C3169 2222

FLUSH HOLLOW HEX PLUG W/ 7/8 TAPER



PART #	MALE PIPE	
5406FLP2	1/8	----
5406FLP4	1/4	----
5406FLP6	3/8	----
5406FLP8	1/2	----
5406FLP12	3/4	----

SQUARE HEAD PLUG

SAE 130109A



PART #	MALE PIPE	
5406SHP2	1/8	----
5406SHP4	1/4	----
5406SHP6	3/8	----
5406SHP8	1/2	----
5406SHP12	3/4	----
5406SHP16	1	----
5406SHP20	1-1/4	----
5406SHP24	1-1/2	----
5406SHP32	2	----

C3179

STEEL PIPE FITTINGS

HYDRAULIC ADAPTERS

PIPE CAP



PART #	FEMALE PIPE	
5406C2	1/8	----
5406C4	1/4	----
5406C6	3/8	----
5406C8	1/2	----
5406C12	3/4	----
5406C16	1	----

HPC

MALE ELBOW

SAE 140237



PART #	MALE PIPE 1	MALE PIPE 2	
55002	1/8	1/8	----
550042	1/4	1/8	----
55004	1/4	1/4	----
550064	3/8	1/4	----
55006	3/8	3/8	----
550084	1/2	1/4	----
550086	1/2	3/8	----
55008	1/2	1/2	----
5500128	3/4	1/2	----
55001212	3/4	3/4	----
55001612	1	3/4	----
550016	1	1	----
55001612	1	3/4	----
55002016	1-1/4	1	----
55002020	1-1/4	1-1/4	----
550024	1-1/2	1-1/2	----
550032	2	2	----

919 5500 2085 CR 1275 C3529

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STEEL PIPE FITTINGS

HYDRAULIC ADAPTERS

45° MALE ELBOW



PART #	MALE PIPE 1	MALE PIPE 2	
550122	1/8	1/8	----
550144	1/4	1/4	----
550166	3/8	3/8	----
55018	1/2	1/2	----
55011212	3/4	3/4	----
55011616	1	1	----

5501 2247

90° STREET ELBOW

SAE 140239



PART #	MALE PIPE 1	FEMALE PIPE 2	
55022	1/8	1/8	----
55024	1/4	1/4	----
550264	3/8	1/4	----
55026	3/8	3/8	----
550268	3/8	1/2	----
550284	1/2	1/4	----
550286	1/2	3/8	----
550288	1/2	1/2	----
550212	3/4	3/4	----
5502812	1/2	3/4	----
5502128	3/4	1/2	----
55021612	1	3/4	----
55021616	1	1	----
550220	1-1/4	1-1/4	----
550224	1-1/2	1-1/2	----

5502 2089 CD 1234R C3409 914

45° STREET ELBOW

SAE 140339



PART #	MALE PIPE 1	FEMALE PIPE 2	
55032	1/8	1/8	----
55034	1/4	1/4	----
55036	3/8	3/8	----
55038	1/2	1/2	----
55031212	3/4	3/4	----
550316	1	1	----

5503 CD45 1244

FEMALE ELBOW

SAE 140238

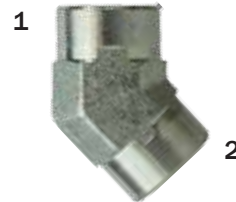


PART #	FEMALE PIPE 1	FEMALE PIPE 2	
55042	1/8	1/8	----
550442	1/4	1/8	----
55044	1/4	1/4	----
55046	3/8	3/8	----
550484	1/2	1/4	----
550486	1/2	3/8	----
55048	1/2	1/2	----
5504128	3/4	1/2	----
550412	3/4	3/4	----
55041612	1	3/4	----
550416	1	1	----
550420	1-1/4	1-1/4	----
550424	1-1/2	1-1/2	----

5504 2087 DD 1245 C3509 916

45° FEMALE ELBOW

SAE 140338



PART #	FEMALE PIPE 1	FEMALE PIPE 2	
55054	1/4	1/4	----
55056	3/8	3/8	----
55058	1/2	1/2	----
550512	3/4	3/4	----
550516	1	1	----
550520	1-1/4	1-1/4	----

5505 DD45 1241 C3559

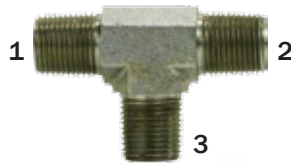
WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

STEEL PIPE FITTINGS

HYDRAULIC ADAPTERS

MALE PIPE TEE

SAE 140437



PART #	MALE PIPE 1 & 2	MALE PIPE 3	
560022	1/8	1/8	----
560044	1/4	1/4	----
560066	3/8	3/8	----
560088	1/2	1/2	----
560012	3/4	3/4	----
560016	1	1	----

5600 2257 RRS

FEMALE BRANCH PIPE TEE

SAE 140427



PART #	MALE PIPE 1 & 2	FEMALE PIPE 3	
560122	1/8	1/8	----
560144	1/4	1/4	----
560166	3/8	3/8	----
560112	3/4	3/4	----
560116	1	1	----

901 5601 2256

STREET PIPE TEE

SAE 140424

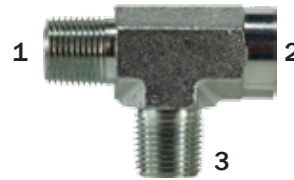


PART #	MALE PIPE 1	FEMALE PIPE 2 & 3	
560222	1/8	1/8	----
560244	1/4	1/4	----
560266	3/8	3/8	----
560288	1/2	1/2	----
560212	3/4	3/4	----
560216	1	1	----

902 5602 2092 MRO 1276 C3759

FEMALE RUN PIPE TEE

SAE 1404276



PART #	MALE PIPE 1 & 3	FEMALE PIPE 2	
560322	1/8	1/8	----
560344	1/4	1/4	----
560366	3/8	3/8	----
560388	1/2	1/2	----
560312	3/4	3/4	----
560316	1	1	----

5603 2093 MMO 1277

MALE BRANCH PIPE TEE



PART #	FEMALE PIPE 1 & 2	MALE PIPE 3	
560422	1/8	1/8	----
560444	1/4	1/4	----
560466	3/8	3/8	----
560488	1/2	1/2	----
560412	3/4	3/4	----
560416	1	1	----

904 5604 2091 MMS 1278 C3609

FEMALE PIPE TEE

SAE 140438



PART #	FEMALE PIPE	
560522	1/8	----
560544	1/4	----
560566	3/8	----
56058	1/2	----
560512	3/4	----
560516	1	----
560520	1-1/4	----

917 5605 2090 1225 C3709

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STEEL O-RING ADAPTERS

HYDRAULIC ADAPTERS

JIC TO O-RING CONNECTOR

SAE 070120
MS 51525



PART #	JIC THREAD SIZE 1	O-RING THREAD 2	
64002	5/16-24	5/16-24	----
64003	3/8-24	3/8-24	----
64004	7/16-20	7/16-20	----
640042	7/16-20	5/16-24	----
640046	7/16-20	9/16-18	----
640048	7/16-20	3/4-16	----
64005	1/2-20	1/2-20	----
64006	9/16-18	9/16-18	----
640064	9/16-18	7/16-20	----
640068	9/16-18	3/4-16	----
6400610	9/16-18	7/8-14	----
6400612	9/16-18	1-1/16-12	----
6400616	9/16-18	1-5/16-12	----
64008	3/4-16	3/4-16	----
640084	3/4-16	7/16-20	----
640086	3/4-16	9/16-18	----
6400810	3/4-16	7/8-14	----
6400812	3/4-16	1-1/16-12	----
640010	7/8-14	7/8-14	----
6400106	7/8-14	9/16-18	----
6400108	7/8-14	3/4-16	----
64001012	7/8-14	1-1/16-12	----
640012	1-1/16-12	1-1/16-12	----
6400128	1-1/16-12	3/4-16	----
64001210	1-1/16-12	7/8-14	----
64001214	1-1/16-12	1-3/16-12	----
64001216	1-1/16-12	1-5/16-12	----
640016	1-5/16-12	1-5/16-12	----
64001612	1-5/16-12	1-1/16-12	----
64001620	1-5/16-12	1-5/8-12	----
64001624	1-5/16-12	1-7/8-12	----
640020	1-5/8-12	1-5/8-12	----
64002012	1-5/8-12	1-1/16-12	----
64002016	1-5/8-12	1-5/16-12	----
64002024	1-5/8-12	1-7/8-12	----
640024	1-7/8-12	1-7/8-12	----
64002420	1-7/8-12	1-5/8-12	----
64002432	1-7/8-12	2-1/2-12	----
640032	2-1/2-12	2-1/2-12	----
64003224	2-1/2-12	1-7/8-12	----

6400 202702R F50X 1231 C5315

O-RING TO PIPE ADAPTER



PART #	O-RING THREAD 1	MALE PIPE THREAD 2	
640142	7/16-20	1/8	----
640144	7/16-20	1/4	----
640164	9/16-18	1/4	----
640166	9/16-18	3/8	----
640186	3/4-16	3/8	----
640188	3/4-16	1/2	----
6401812	3/4-16	3/4	----
6401108	7/8-14	1/2	----
6401128	1-1/16-12	1/2	----
64011212	1-1/16-12	3/4	----
64011616	1-5/16-12	1	----
64012020	1-5/8-12	1-1/4	----
64012020	1-5/8-12	1-1/4	----
64012424	1-7/8-12	1-1/2	----

6401 F5X 1264R C3249

O-RING TO 37° JIC - SWIVEL ADAPTER



PART #	O-RING THREAD 1	JIC THREAD SIZE 2	
6402O44	7/16-20	7/16-20	----
6402O66	9/16-18	9/16-18	----
6402O68	9/16-18	3/4-16	----
6402O88	3/4-16	3/4-16	----
6402O86	3/4-16	9/16-18	----
6402O1010	7/8-14	7/8-14	----
6402O1212	1-1/16-12	1-1/16-12	----

6402 2266 F65X 1213 9316

O-RING HEX NIPPLE UNION



PART #	O-RING THRD 1	O-RING THRD 2	
6403O4	7/16-20	7/16-20	----
6403O6	9/16-18	9/16-18	----
6403O8	3/4-16	3/4-16	----
6403O12	1-1/16-12	1-1/16-12	----
6403O16	1-5/16-12	1-5/16-12	----

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STEEL O-RING ADAPTERS

HYDRAULIC ADAPTERS

FEMALE O-RING TO MALE PIPE ADAPTER



PART #	O-RING THREAD 1	MALE PIPE THREAD 2	
640442	7/16-20	1/8	----
640444	7/16-20	1/4	----
640464	9/16-18	1/4	----
640466	9/16-18	3/8	----
640468	9/16-18	1/2	----
640486	3/4-16	3/8	----
640488	3/4-16	1/2	----
6404108	7/8-14	1/2	----
64041212	1-1/16-12	3/4	----
64041616	1-5/16-12	1	----

6404 2246R 1267R C3239 FHG5

O-RING TO FEMALE PIPE ADAPTER



PART #	O-RING THREAD 1	FEMALE PIPE THREAD 2	
6405O22	5/16-24	1/8	----
6405O42	7/16-20	1/8	----
6405O32	3/8-24	1/8	----
6405O34	3/8-24	1/4	----
6405O44	7/16-20	1/4	----
6405O52	1/2-20	1/8	----
6405O54	1/2-20	1/4	----
6405O62	9/16-18	1/8	----
6405O64	9/16-18	1/4	----
6405O66	9/16-18	3/8	----
6405O68	9/16-8	1/2	----
6405O84	3/4-16	1/4	----
6405O86	3/4-16	3/8	----
6405O88	3/4-16	1/2	----
6405O812	3/4-16	3/4	----
6405O104	7/8-14	1/4	----
6405O106	7/8-14	3/8	----
6405O108	7/8-14	1/2	----
6405O126	1-1/16-12	3/8	----
6405O128	1-1/16-12	1/2	----
6405O1212	1-1/16-12	3/4	----
6405O1216	1-1/16-12	1	----
6405O1612	1-5/16-12	3/4	----
6405O1616	1-5/16-12	1	----
6405O2020	1-5/8-12	1-1/4	----
6405O2416	1-7/8-12	1	----
6405O2420	1-7/8-12	1-1/4	----
6405O2424	1-7/8-12	1-1/2	----
6405O3224	2-1/2-12	1-1/2	----
6405O3232	2-1/2-12	2	----

6405 2216R F50G 1268R C3269

O-RING HEX HEAD PLUG

SAE 090109A



* Not all sizes are solid

PART #	O-RING THREAD	
6408O2	5/16-24	----
6408O4	7/16-20	----
6408O5	1/2-20	----
6408O6	9/16-18	----
6408O8	3/4-16	----
6408O10	7/8-14	----
6408O12	1-1/16-12	----
6408O14	1-3/16-12	----
6408O16	1-5/16-12	----
6408O20	1-5/8-12	----
6408O24	1-7/8-12	----

6408 900598 P50N 1265 7237

O-RING HOLLOW - HEX HEAD PLUG

SAE 090109B



PART #	O-RING THREAD	
6408HO2	5/16-24	----
6408HO4	7/16-20	----
6408HO5	1/2-20	----
6408HO6	9/16-18	----
6408HO8	3/4-16	----
6408HO10	7/8-14	----
6408HO12	1-1/16-12	----
6408HO14	1-3/16-12	----
6408HO16	1-5/16-12	----
6408HO20	1-5/8-12	----
6408HO24	1-7/8-12	----

6408HHP FF2138 HP50N 1256 7238 6409

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 For more information, visit www.P65Warnings.ca.gov



FEMALE SWIVELS JIC

HYDRAULIC ADAPTERS

O-RING PORT REDUCER/EXPANDER



PART #	O-RING THREAD 1	O-RING THREAD 2	
6410O46	7/16-20	9/16-18	----
6410O64	9/16-18	7/16-20	----
6410O68	9/16-18	3/4-16	----
6410O84	3/4-16	7/16-20	----
6410O86	3/4-16	9/16-18	----
6410O88	3/4-16	3/4-16	----
6410O812	3/4-16	1-1/16-12	----
6410O124	1-1/16-12	7/16-20	----
6410O126	1-1/16-12	9/16-18	----
6410O128	1-1/16-12	3/4-16	----
6410O166	1-5/16-12	9/16-18	----
6410O168	1-5/16-12	3/4-16	----
6410O1612	1-5/16-12	1-1/16-12	----
6410O2012	1-5/8-12	1-1/16-12	----
6410O2016	1-5/8-12	1-5/16-12	----
6410O2412	1-7/8-12	1-1/16-12	----
6410O2416	1-7/8-12	1-5/16-12	----
6410O2420	1-7/8-12	1-5/8-12	----
6410O3216	2-1/2-12	1-5/16-12	----
6410O3220	2-1/2-12	1-5/8-12	----
6410O3224	2-1/2-12	1-7/8-12	----

6410 FF1010 F50G5 1270 7033

JIC SWIVEL NUT ELBOW

SAE 070221
MS 51521



PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
65004	7/16-20	7/16-20	----
65006	9/16-18	9/16-18	----
65008	3/4-16	3/4-16	----
650086	3/4-16	9/16-18	----
650010	7/8-14	7/8-14	----
6500108	7/8-14	3/4-16	----
650012	1-1/16-12	1-1/16-12	----
650016	1-5/16-12	1-5/16-12	----
650020	1-5/8-12	1-5/8-12	----
650024	1-7/8-12	1-7/8-12	----
650032	2-1/2-12	2-1/2-12	----

6500 2071R C6X 1236 G5506

JIC SWIVEL TO MALE PIPE ELBOW



PART #	JIC THREAD SIZE 1	MALE PIPE THREAD 2	
650142	7/16-20	1/8	----
650144	7/16-20	1/4	----
650164	9/16-18	1/4	----
650166	9/16-18	3/8	----
650186	3/4-16	3/8	----
650188	3/4-16	1/2	----
6501108	7/8-14	1/2	----
65011212	1-1/16-12	3/4	----
65011616	1-5/16-12	1	----
65012020	1-5/8-12	1-1/4	----
65012424	1-7/8-12	1-1/2	----
65013232	2-1/2-12	2	----

6501 2250 1247R TF5406

JIC SWIVEL 45° ELBOW

SAE 070321
MS 51522



PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
65024	7/16-20	7/16-20	----
65026	9/16-18	9/16-18	----
65028	3/4-16	3/4-16	----
650210	7/8-14	7/8-14	----
650212	1-1/16-12	1-1/16-12	----
650216	1-5/16-12	1-5/16-12	----

JIC SWIVEL TO FEMALE - PIPE ELBOW



PART #	JIC THREAD SIZE 1	FEMALE PIPE THREAD 2	
650344	7/16-20	1/4	----
650364	9/16-18	1/4	----
650366	9/16-18	3/8	----
650386	3/4-16	3/8	----
650388	3/4-16	1/2	----
65031212	1-1/16-12	3/4	----

6502 2070R V6X 1237 C5356

FEMALE SWIVELS

HYDRAULIC ADAPTERS

JIC SWIVEL CONNECTOR



PART #	JIC THREAD SIZE 1	JIC THREAD SIZE 2	
650444	7/16-20	7/16-20	----
650466	9/16-18	9/16-18	----
650488	3/4-16	3/4-16	----
65041010	7/8-14	7/8-14	----
65041212	1-1/16-12	1-1/16-12	----
65041616	1-5/16-12	1-5/16-12	----
65042020	1-5/8-12	1-5/8-12	----

6504 1205

JIC SWIVEL TO MALE - PIPE ADAPTER



PART #	JIC THREAD SIZE 1	MALE PIPE THREAD 2	
650542	7/16-20	1/8	----
650544	7/16-20	1/4	----
650546	7/16-20	3/8	----
650564	9/16-18	1/4	----
650566	9/16-18	3/8	----
650586	3/4-16	3/8	----
650588	3/4-16	1/2	----
6505128	1-1/16-12	1/2	----
65051212	1-1/16-12	3/4	----
65051612	1-5/16-12	3/4	----
65051616	1-5/16-12	1	----
65052424	1-7/8-12	1-1/2	----

6505 2018 F6X 1211 9100R

JIC SWIVEL TO FEMALE PIPE ADAPTER



PART #	JIC THREAD SIZE 1	FEMALE PIPE THREAD 2	
650642	7/16-20	1/8	----
650644	7/16-20	1/4	----
650664	9/16-18	1/4	----
650666	9/16-18	3/8	----
650668	9/16-18	1/2	----
650686	3/4-16	3/8	----
650688	3/4-16	1/2	----
6506106	7/8-14	3/8	----
6506128	1-1/16-12	1/2	----
65061212	1-1/16-12	3/4	----
65061616	1-5/16-12	1	----
65062020	1-5/8-12	1-1/4	----
65062424	1-7/8-12	1-1/2	----
65063232	2-1/2-12	2	----

6506 2242 1215

JIC SWIVEL BRANCH TEE



SAE 070433
MS 51524

PART #	JIC THREAD SIZE 1 & 2	JIC FEMALE THREAD 3	
660044	7/16-20	7/16-20	----
660066	9/16-18	9/16-18	----
660088	3/4-16	3/4-16	----
660010	7/8-14	7/8-14	----
660012	1-1/16-12	1-1/16-12	----
660016	1-5/16-12	1-5/16-12	----
660020	1-5/8-12	1-5/8-12	----

6600 203101R 55X 1227 C5707

JIC SWIVEL RUN TEE

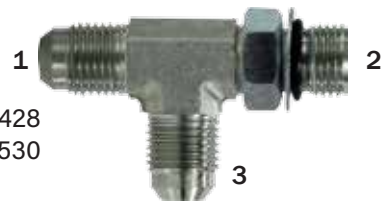


SAE 070432
MS 51523

PART #	JIC THREAD SIZE 1 & 3	JIC FEMALE THREAD 2	
66024	7/16-20	7/16-20	----
66025	1/2-20	1/2-20	----
66026	9/16-18	9/16-18	----
66028	3/4-16	3/4-16	----
660212	1-1/16-12	1-1/16-12	----
660216	1-5/16-12	1-5/16-12	----
660224	1-7/8-12	1-7/8-12	----

6602 203102R R6X 1248 C5706

JIC TO O-RING RUN TEE



SAE 070428
MS 51530

PART #	JIC THREAD SIZE 1 & 3	O-RING THREAD SIZE 2	
6804NWO4	7/16-20	7/16-20	----
6804NWO6	9/16-18	9/16-18	----
6804NWO8	3/4-16	3/4-16	----
6804NWO10	7/8-14	7/8-14	----
6804NWO12	1-1/16-12	1-1/16-12	----
6804NWO16	1-5/16-12	1-5/16-12	----

6804 203005R R50X 1266R C5716

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov



STEEL O-RING ADAPTERS

HYDRAULIC ADAPTERS

JIC TO O-RING ELBOW CONNECTOR

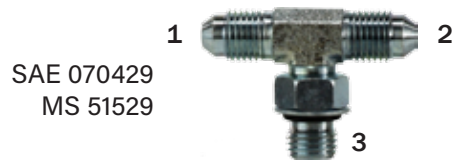


SAE 070220
MS 51527

PART #	JIC THREAD SIZE 1	O-RING THREAD SIZE 2	
6801NWO4	7/16-20	7/16-20	----
6801NWO46	7/16-20	9/16-18	----
6801NWO48	7/16-20	3/4-16	----
6801NWO6	9/16-18	9/16-18	----
6801NWO64	9/16-18	7/16-20	----
6801NWO68	9/16-18	3/4-16	----
6801NWO612	9/16-18	1-1/16-12	----
6801NWO8	3/4-16	3/4-16	----
6801NWO86	3/4-16	9/16-18	----
6801NWO810	3/4-16	7/8-14	----
6801NWO812	3/4-16	1-1/16-12	----
6801NWO816	3/4-16	1-5/16-12	----
6801NWO10	7/8-14	7/8-14	----
6801NWO106	7/8-14	9/16-18	----
6801NWO108	7/8-14	3/4-16	----
6801NWO1016	7/8-14	1-5/16-12	----
6801NWO12	1-1/16-12	1-1/16-12	----
6801NWO128	1-1/16-12	3/4-16	----
6801NWO1210	1-1/16-12	7/8-14	----
6801NWO1216	1-1/16-12	1-5/16-12	----
6801NWO16	1-5/16-12	1-5/16-12	----
6801NWO1612	1-5/16-12	1-1/16-12	----
6801NWO1620	1-5/16-12	1-5/8-12	----
6801NWO20	1-5/8-12	1-5/8-12	----
6801NWO2016	1-5/8-12	1-5/16-12	----
6801NWO2024	1-5/8-12	1-7/8-12	----
6801NWO24	1-7/8-12	1-7/8-12	----
6801NWO32	2-1/2-12	2-1/2-12	----

6801 2062R C50X 1238L C5515

JIC TO O-RING - BRANCH TEE



SAE 070429
MS 51529

PART #	JIC THREAD SIZE 1 & 2	O-RING THREAD SIZE 3	
6803NWO4	7/16-20	7/16-20	----
6803NWO6	9/16-18	9/16-18	----
6803NWO8	3/4-16	3/4-16	----
6803NWO10	7/8-14	7/8-14	----
6803NWO12	1-1/16-12	1-1/16-12	----
6803NWO16	1-5/16-12	1-5/16-12	----

6803 203003X S50X 1265R C5715

JIC TO O-RING 45° ELBOW



SAE 070320
MS 51528

PART #	JIC THREAD SIZE 1	O-RING THREAD SIZE 2	
6802NWO2	5/16-24	5/16-24	----
6802NWO4	7/16-20	7/16-20	----
6802NWO46	7/16-20	9/16-18	----
6802NWO6	9/16-18	9/16-18	----
6802NWO68	9/16-18	3/4-16	----
6802NWO8	3/4-16	3/4-16	----
6802NWO86	3/4-16	9/16-18	----
6802NWO810	3/4-16	7/8-14	----
6802NWO812	3/4-16	1-1/16-12	----
6802NWO10	7/8-14	7/8-14	----
6802NWO108	7/8-14	3/4-16	----
6802NWO1012	7/8-14	1-1/16-12	----
6802NWO12	1-1/16-12	1-1/16-12	----
6802NWO1216	1-1/16-12	1-5/16-12	----
6802NWO16	1-5/16-12	1-5/16-12	----
6802NWO1612	1-5/16-12	1-1/16-12	----
6802NWO1620	1-5/16-12	1-5/8-12	----
6802NWO20	1-5/8-12	1-5/8-12	----
6802NWO2016	1-5/8-12	1-5/16-12	----
6802NWO24	1-7/8-12	1-7/8-12	----
6802NWO32	2-1/2-12	2-1/2-12	----

6802 2061 V50X 1240R C5365

O-RING TO - FEMALE PIPE ELBOW



PART #	O-RING THREAD SIZE 1	PIPE THREAD SIZE 2	
6805NWO42	7/16-20	1/8	----
6805NWO44	7/16-20	1/4	----
6805NWO64	9/16-18	1/4	----
6805NWO66	9/16-18	3/8	----
6805NWO86	3/4-16	3/8	----
6805NWO88	3/4-16	1/2	----
6805NWO108	7/8-14	1/2	----
6805NWO128	1-1/16-12	1/2	----
6805NWO1212	1-1/16-12	3/4	----
6805NWO1616	1-5/16-12	1	----
6805NWO2020	1-5/8-12	1-1/4	----
6805NWO2424	1-7/8-12	1-1/2	----

6805 206801R AEOG 1264 C3459

STEEL O-RINGS

HYDRAULIC ADAPTERS

O-RING TO MALE PIPE ELBOW



PART #	O-RING THREAD SIZE 1	PIPE THREAD SIZE 2	
6806NWO44	7/16-20	1/4	----
6806NWO66	9/16-18	3/8	----
6806NWO88	3/4-16	1/2	----
6806NWO1212	1-1/16-12	3/4	----
6806NWO1616	1-5/16-12	1	----

6806 1263 TF3569

O-RING TO 37° JIC SWIVEL NUT TO O-RING ELBOW



PART #	O-RING THREAD SIZE 1	JIC THREAD SIZE 2	
6809NWO44	7/16-20	7/16-20	----
6809NWO66	9/16-18	9/16-18	----
6809NWO88	3/4-16	3/4-16	----
6809NWO1212	1-1/16-12	1-1/16-12	----

FEMALE O-RING TO MALE O-RING ELBOW



PART #	O-RING THREAD SIZE 1	O-RING THREAD SIZE 2	
6815NWO44	7/16-20	7/16-20	----
6815NWO66	9/16-18	9/16-18	----
6815NWO88	3/4-16	3/4-16	----
6815NWO1010	7/8-14	7/8-14	----
6815NWO1212	1-1/16-12	1-1/16-12	----

MALE O-RING SWIVEL ADAPTER

SAE 140157



PART #	O-RING THREAD SIZE 1	FEMALE NPSM SIZE 2	
6900O42	7/16-20	1/8	----
6900O44	7/16-20	1/4	----
6900O46	7/16-20	3/8	----
6900O48	7/16-20	1/2	----
6900O64	9/16-18	1/4	----
6900O66	9/16-18	3/8	----
6900O68	9/16-18	1/2	----
6900O84	3/4-16	1/4	----
6900O86	3/4-16	3/8	----
6900O88	3/4-16	1/2	----
6900O812	3/4-16	3/4	----
6900O104	7/8-14	1/4	----
6900O106	7/8-14	3/8	----
6900O108	7/8-14	1/2	----
6900O1012	7/8-14	3/4	----
6900O128	1-1/16-12	1/2	----
6900O1212	1-1/16-12	3/4	----
6900O1612	1-5/16-12	3/4	----
6900O1616	1-5/16-12	1	----

6900 2066R 1235 9315

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov



STEEL SAE O-RING

HYDRAULIC ADAPTERS

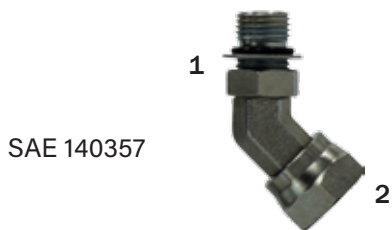
90° O-RING SWIVEL ADAPTER



SAE 140257

PART #	O-RING THREAD SIZE 1	FEMALE NPSM SIZE 2	
6901NWO42	7/16-20	1/8	----
6901NWO44	7/16-20	1/4	----
6901NWO64	9/16-18	1/4	----
6901NWO66	9/16-18	3/8	----
6901NWO68	9/16-18	1/2	----
6901NWO84	3/4-16	1/4	----
6901NWO86	3/4-16	3/8	----
6901NWO88	3/4-16	1/2	----
6901NWO812	3/4-16	3/4	----
6901NWO104	7/8-14	1/4	----
6901NWO106	7/8-14	3/8	----
6901NWO108	7/8-14	1/2	----
6901NWO126	1-1/16-12	3/8	----
6901NWO128	1-1/16-12	1/2	----
6901NWO1212	1-1/16-12	3/4	----
6901NWO1612	1-5/16-12	3/4	----
6901NWO1616	1-5/16-12	1	----
6901NWO2016	1-5/8-12	1	----
6901NWO2020	1-5/8-12	1-1/4	----
6901NWO2424	1-7/8-12	1-1/2	----
6901NWO3232	2-1/2-12	2	----

45° O-RING SWIVEL ADAPTER



SAE 140357

PART #	O-RING THREAD SIZE 1	FEMALE NPSM SIZE 2	
6902NWO42	7/16-20	1/8	----
6902NWO44	7/16-20	1/4	----
6902NWO46	7/16-20	3/8	----
6902NWO64	9/16-18	1/4	----
6902NWO66	9/16-18	3/8	----
6902NWO68	9/16-18	1/2	----
6902NWO84	3/4-16	1/4	----
6902NWO86	3/4-16	3/8	----
6902NWO88	3/4-16	1/2	----
6902NWO108	7/8-14	1/2	----
6902NWO128	1-1/16-12	1/2	----
6902NWO1212	1-1/16-12	3/4	----
6902NWO1616	1-5/16-12	1	----

6902 2067R 1272 9365

Fax 1-800-877-5391

O-RINGS

VITON 75 SAE BOSS O-RING



Fluorocarbon

PART #	O-RING THREAD	
400122	5/16-24	----
400144	7/16-20	----
400166	9/16-18	----
400188	3/4-16	----
400110	7/8-14	----
400112	1-1/16-12	----
400116	1-5/16-12	----
400120	1-5/8-12	----
400124	1-7/8-12	----
400132	2-1/2-12	----

NITRILE 90 SAE BOSS O-RING



PART #	O-RING THREAD	
400022	5/16-24	----
400044	7/16-20	----
400066	9/16-18	----
400088	3/4-16	----
400010	7/8-14	----
400012	1-1/16-12	----
400014	1-3/16-12	----
400016	1-5/16-12	----
400020	1-5/8-12	----
400024	1-7/8-12	----
400032	2-1/2-12	----

BRAZE TUBE NUT (SLEEVE REQUIRED)



SAE 520110

PART #	TUBE O.D.	BRAZE TUBE O.D.	
FSO3184	1/4	.25	----
FSO3186	3/8	.38	----
FSO3188	1/2	.50	----
FSO31810	5/8	.62	----
FSO31812	3/4	.72	----
FSO31816	1	1.00	----
FSO31820	1 1/4	1.25	----
FSO31824	1 1/2	1.50	----

FF318 FF1311

sales@midlandindustries.com

O-RING FACE SEAL ADAPTERS

HYDRAULIC ADAPTERS

BRAZE TUBE SLEEVE

SAE 520115



PART #	TUBE O.D.	
FSO3194	1/4	----
FSO3196	3/8	----
FSO3198	1/2	----
FSO31910	5/8	----
FSO31912	3/4	----
FSO31916	1	----
FSO31920	1-1/4	----

FF319 FF3019

See Page 414 for JIC Nut and Sleeve

CAP

SAE 520112



• Two Piece Nut/ Insert

PART #	TUBE O.D.	FACE SEAL THREAD	
FSO304C4	1/4	9/16-18	----
FSO304C6	3/8	11/16-16	----
FSO304C8	1/2	13/16-16	----
FSO304C10	5/8	1-14	----
FSO304C12	3/4	1-3/16-12	----
FSO304C16	1	1-7/16-12	----
FSO304C20	1-1/4	1-11/16-12	----
FSO304C24	1-1/2	2-12	----

FF304C

BULKHEAD LOCKNUT

SAE 520118



PART #	THREAD SIZE	
FSO3064	9/16-18	----
FSO3066	11/16-16	----
FSO3068	13/16-16	----
FSO30612	1-3/16-12	----
FSO30616	1-7/16-12	----

FF403

MALE UNION CONNECTOR

SAE 520102



PART #	TUBE O.D.	FACE SEAL THREAD 1&2	
FSO240344	1/4	9/16-18	----
FSO240366	3/8	11/16-16	----
FSO240388	1/2	13/16-16	----
FSO24031212	3/4	1-3/16-12	----
FSO24031616	1	1-7/16-12	----

FF2403 FF1203

MALE O-RING FACE SEAL ADAPTER



PART #	FACE SEAL THREAD 1	MALE PIPE SIZE 2	
FSO240444	9/16-18	1/4-18	----
FSO240446	9/16-18	3/8	----
FSO240464	11/16-16	1/4-18	----
FSO240466	11/16-16	3/8-18	----
FSO240484	13/16-16	1/4-18	----
FSO240486	13/16-16	3/8	----
FSO240488	13/16-16	1/2-14	----
FSO2404108	1-14	1/2	----
FSO24041212	1-3/16-12	3/4-14	----
FSO24041616	1-7/16-12	1-11/12	----
FSO24042020	1-11/16-12	1-1/4	----
FSO24042424	2-12	1-1/2	----

FF2404 4205 FLO

FEMALE ORFS TO MALE ORFS REDUCER



PART #	FEMALE FACE SEAL SIZE 1	MALE FACE SEAL THREAD 2	
FSO240664	11/16-16	9/16-18	----
FSO240684	13/16-16	9/16-18	----
FSO2406106	1-14	11/16-16	----
FSO2406108	1-14	13/16-16	----
FSO2406126	1-3/16-12	11/16-16	----

FF2406 TRLON

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

O-RING FACE SEAL ADAPTERS

HYDRAULIC ADAPTERS

PLUG

SAE 520109



PART #	TUBE O.D.	FACE SEAL THREAD	
FSO24084	1/4	9/16-18	----
FSO24086	3/8	11/16-16	----
FSO24088	1/2	13/16-16	----
FSO240810	5/8	1-14	----
FSO240812	3/4	1-3/8-12	----
FSO240816	1	1-7/16-12	----
FSO240820	1-1/4	1-11/16-12	----
FSO240824	1-1/2	2-12	----

FF2408 FF1254 4229 PNLO

ORFS UNION ELBOW 90°



PART #	FACE SEAL THREAD 1	FACE SEAL THREAD 2	
FS250044	9/16-18	9/16-18	----
FS250066	11/16-16	11/16-16	----
FS25001010	1-14	1-14	----
FS25001212	1-3/16-12	1-3/16-12	----
FS25001616	1-7/16-12	1-7/16-12	----

FF2500 4505 ELO

ORFS TO MALE ELBOW

SAE 520202



PART #	FACE SEAL THREAD 1	MALE PIPE THREAD 2	
FS250144	9/16-18	1/4	----
FS250164	11/16-16	1/4	----
FS250166	11/16-16	3/8	----
FS250186	13/16-16	3/8	----
FS250188	13/16-16	1/2	----
FS2501812	13/16-16	3/4	----
FS2501108	1-14	1/2	----
FS25011012	1-14	3/4	----
FS2501128	1-3/8-12	1/2	----
FS25011212	1-3/8-12	3/4	----
FS25011216	1-3/8-12	1	----
FS25011616	1-7/16-12	1	----
FS25012020	1-11/16-12	1-1/4	----
FS25012424	2-12	1-1/2	----

FF2501 FF1208 4405 CLO

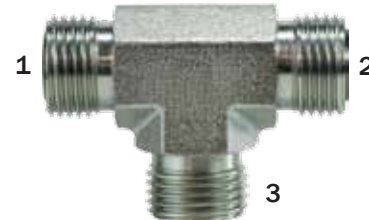
ORFS TO PIPE ELBOW 45°



PART #	FACE SEAL THREAD 1	MALE PIPE THREAD 2	
FS250344	9/16-18	1/4	----
FS250366	11/16-16	3/8	----
FS250388	13/16-16	1/2	----
FS25031212	1-3/16-12	3/4	----
FS25031616	1-7/16-12	1	----

FF2503 4355 VLO

ORFS UNION TEE



PART #	FACE SEAL THREAD 1+2+3	
FS260344	9/16-18	----
FS260366	11/16-16	----
FS260388	13/16-16	----
FS26031212	1-3/16-12	----

MALE FLAT FACE TO FEMALE 37° SWIVEL



PART #	FACE SEAL THREAD 1	JIC THREAD 2	
FS640244	9/16-18	7/16-20	----
FS640266	11/16-16	9/16-18	----
FS640288	13/16-16	3/4-16	----
FS64021010	1-14	7/8-14	----
FS64021212	1-3/16-12	1-1/16-12	----

FF6402 FF1294

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

O-RING FACE SEAL ADAPTERS

HYDRAULIC ADAPTERS

MALE ORFS TO ORB CONNECTOR

SAE 520120



PART #	FACE SEAL THREAD 1	O-RING THREAD 2	
FS6400O44	9/16-18	7/16-20	----
FS6400O46	9/16-18	9/16-18	----
FS6400O64	11/16-16	7/16-20	----
FS6400O66	11/16-16	9/16-18	----
FS6400O68	11/16-16	3/4-16	----
FS6400O86	13/16-16	9/16-18	----
FS6400O88	13/16-16	3/4-16	----
FS6400O810	13/16-16	7/8-14	----
FS6400O108	1-14	3/4-16	----
FS6400O1010	1-14	7/8-14	----
FS6400O1012	1-14	1-1/16-12	----
FS6400O128	1-3/16-12	3/4-16	----
FS6400O1210	1-3/16-12	7/8-14	----
FS6400O1212	1-3/16-12	1-1/16-12	----
FS6400O1216	1-3/16-12	1-5/16-12	----
FS6400O1612	1-7/16-12	1-1/16-12	----
FS6400O1616	1-7/16-12	1-5/16-12	----
FS6400O1620	1-7/16-12	1-5/8-12	----
FS6400O2020	1-11/16-12	1-5/8-12	----
FS6400O2024	1-11/16-12	1-7/8-12	----
FS6400O2424	2-12	1-7/8-12	----

4315 FF6400 FF1231

SWIVEL NUT ELBOW



PART #	FACE SEAL THREAD 1	FACE SEAL THREAD 2	
FS650044	9/16-18	9/16-18	----
FS650066	11/16-16	11/16-16	----
FS650088	13/16-16	13/16-16	----
FS65001212	1-3/16-12	1-3/16-12	----

FF6500 FF1236

MALE JIC 37° FLARE TO FEMALE FLAT FACE SWIVEL



PART #	JIC THREAD SIZE 1	FACE SEAL THREAD 2	
FS650444	7/16-20	9/16-18	----
FS650466	9/16-18	11/16-16	----
FS650488	3/4-16	13/16-16	----
FS65041010	7/8-14	1-14	----
FS65041616	1-5/16-12	1-7/16-12	----

FF6504 FF1296

O-RING ELBOW CONNECTOR



PART #	FACE SEAL THREAD 1	O-RING THREAD 2	
FS680144	9/16-18	7/16-20	----
FS680146	9/16-18	9/16-18	----
FS680164	11/16-16	7/16-20	----
FS680166	11/16-16	9/16-18	----
FS680168	11/16-16	3/4-16	----
FS680186	13/16-16	9/16-18	----
FS680188	13/16-16	3/4-16	----
FS6801810	13/16-16	7/8-14	----
FS6801108	1-14	3/4-16	----
FS68011012	1-14	1-1/16-12	----
FS68011210	1-3/16-12	7/8-14	----
FS68011212	1-3/16-12	1-1/16-12	----
FS68011216	1-3/16-12	1-5/16-12	----
FS68011616	1-7/16-12	1-5/16-12	----
FS68011620	1-7/16-12	1-5/8-12	----
FS68012016	1-11/16-12	1-5/16-12	----
FS68012020	1-11/16-12	1-5/8-12	----
FS68012424	2-12	1-7/8-12	----

FF6801 FF1238 4515

ORFS TO O-RING ELBOW 45°



PART #	FACE SEAL THREAD 1	O-RING SIZE 2	
FS680244	9/16-18	7/16-20	----
FS680266	11/16-16	9/16-18	----
FS680288	13/16-16	3/4-16	----
FS68021010	1-14	7/8-14	----
FS68021212	1-3/16-12	1-1/16-12	----
FS68021616	1-7/16-12	1-5/16-12	----
FS68022020	1-11/16-12	1-5/8-12	----

FF6802 4365 V5OLO

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer.
 For more information, visit www.P65Warnings.ca.gov



STEEL BSPT ADAPTERS

HYDRAULIC ADAPTERS

STRAIGHT THREAD SWIVEL NUT ELBOW



PART #	O-RING THREAD 1	FACE SEAL THREAD 2	
FS680944	7/16-20	9/16-18	----
FS680966	9/16-18	11/16-16	----
FS680988	3/4-16	13/16-16	----
FS68091212	1-1/16-12	1-3/16-12	----

FF6809 FF1239 4535 AOELC

STEEL BSPT ADAPTERS

JIC MALE CONNECTOR BSPT



PART #	JIC THREAD SIZE 1	MALE BSPT 2	
700042	7/16-20	1/8-28	----
700044	7/16-20	1/4-19	----
700064	9/16-18	1/4-19	----
700066	9/16-18	3/8-19	----
700068	9/16-18	1/2-14	----
700086	3/4-16	3/8-19	----
700088	3/4-16	1/2-14	----
7000812	3/4-16	3/4-14	----
7000108	7/8-14	1/2-14	----
70001012	7/8-14	3/4-14	----
7000128	1-1/16-12	1/2-14	----
70001212	1-1/16-12	3/4-14	----
70001616	1-5/16-12	1-11	----

3404 305

JIC MALE ELBOW BSPT



PART #	JIC THREAD SIZE 1	MALE BSPT 2	
720042	7/16-20	1/8-28	----
720044	7/16-20	1/4-19	----
720064	9/16-18	1/4-19	----
720066	9/16-18	3/8-19	----
720068	9/16-18	1/2-14	----
720086	3/4-16	3/8-19	----
720088	3/4-16	1/2-14	----
72001212	1-1/16-12	3/4-14	----

3501 315

BSPT HEX NIPPLE



PART #	MALE BSPT 1	MALE BSPT 2	
752022	1/8-28	1/8-28	----
752044	1/4-19	1/4-19	----
752066	3/8-19	3/8-19	----
752088	1/2-14	1/2-14	----
75201010	5/8-14	5/8-14	----
75201212	3/4-14	3/4-14	----

3520 MBT

BSPT PLUG



PART #	BSPT	
95082	1/8-28	----
95084	1/4-19	----
95086	3/8-19	----
95088	1/2-14	----
950812	3/4-14	----
9508-16	1-11	----

100B-Y KA-RM MHL 296

STEEL BSPP ADAPTERS

BSPP HEX NIPPLE



PART #	MALE BSPP 1	MALE BSPP 2	
742022	1/8-28	1/8-28	----
742042	1/4-19	1/8-28	----
742064	3/8-19	1/4-19	----
742066	3/8-19	3/8-19	----
742086	1/2-14	3/8-19	----
742088	1/2-14	1/2-14	----
7420108	5/8-14	1/2-14	----
7420128	3/4-14	1/2-14	----
74201212	3/4-14	3/4-14	----
74201612	1-11	3/4-14	----
74201616	1-11	1-11	----

3420 MB 9022

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

STEEL BSPP ADAPTERS

HYDRAULIC ADAPTERS

BSPP COUPLING



PART #	BSPP	
74252	1/8-28	----
74254	1/4-19	----
74258	1/2-14	----
742510	5/8-14	----
742512	3/4-14	----
742516	1-11	----

3425 FB

JIC TO BSPP 45° ELBOW



PART #	JIC THREAD SIZE 1	MALE BSPP 2	
78024	7/16-20	1/4-19	----
78026	9/16-18	3/8-19	----
78028	3/4-16	1/2-14	----
780212	1-1/16-12	3/4-14	----
780216	1-5/16-12	1-11	----

3802 35J

JIC TO FEMALE BSPP STRAIGHT SWIVEL



PART #	JIC THREAD SIZE 1	FEMALE BSPP SWIVEL 2	
72404	7/16-20	1/4-19	----
72406	9/16-18	3/8-19	----
72408	3/4-16	1/2-14	----
724010	7/8-14	5/8-14	----
724012	1-1/16-12	3/4-14	----
724016	1-5/16-12	1-11	----

3240 MJFBS

BSPP TO MALE PIPE NIPPLE



PART #	MALE BSPP SIZE 1	MALE PIPE THREAD SIZE 2	
78252	1/8-28	1/8	----
78254	1/4-19	1/4	----
78256	3/8-19	3/8	----
78258	1/2-14	1/2	----
782512	3/4-14	3/4	----
782516	1-11	1	----

MBMP 3825

JIC TO BSPP MALE ELBOW



PART #	JIC THREAD SIZE 1	MALE BSPP 2	
7202NWO42	7/16-20	1/8-28	----
7202NWO44	7/16-20	1/4-19	----
7202NWO64	9/16-18	1/4-19	----
7202NWO66	9/16-18	3/8-19	----
7202NWO68	9/16-18	1/2-14	----
7202NWO86	3/4-16	3/8-19	----
7202NWO88	3/4-16	1/2-14	----
7202NWO812	3/4-16	3/4-14	----
7202NWO108	7/8-14	1/2-14	----
7202NWO1212	1-1/16-12	3/4-14	----
7202NWO1216	1-1/16-12	1-11	----
7202NWO1616	1-5/16-12	1-11	----

3801 315

JIC TO BSPP MALE CONNECTOR



PART #	JIC THREAD SIZE 1	MALE BSPP 2	
700242	7/16-20	1/8-28	----
700244	7/16-20	1/4-19	----
700246	7/16-20	3/8-19	----
700248	7/16-20	1/2-14	----
700264	9/16-18	1/4-19	----
700266	9/16-18	3/8-19	----
700268	9/16-18	1/2-14	----
700286	3/4-16	3/8-19	----
700288	3/4-16	1/2-14	----
7002812	3/4-16	3/4-14	----
7002108	7/8-14	1/2-14	----
70021212	1-1/16-12	3/4-14	----
70021216	1-1/16-12	1-11	----
70021616	1-5/16-12	1-11	----

30J 3800

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

STEEL BSPP ADAPTERS

HYDRAULIC ADAPTERS

JIC TO BSPP STRAIGHT SWIVEL



PART #	JIC THREAD SIZE 1	MALE BSPP 2	
702242	7/16-20	1/8-28	----
702244	7/16-20	1/4-19	----
702266	9/16-18	3/8-19	----
702288	3/4-16	1/2-14	----
7022108	7/8-14	1/2-14	----
70221212	1-1/16-12	3/4-14	----
70221616	1-5/16-12	1-11	----

3402 3055

HEX HEAD PLUG BSPP



PART #	MALE BSPP	
9522P2	1/8-28	----
9522P4	1/4-19	----
9522P6	3/8-19	----
9522P8	1/2-14	----
9522P12	3/4-14	----
9522P16	1-11	----

3408

HOLLOW HEX PLUG BSPP



PART #	MALE BSPP	
9522H2	1/8-28	----
9522H4	1/4-19	----
9522H6	3/8-19	----
9522H8	1/2-14	----
9522H12	3/4-14	----
9522H16	1-11	----

3408 HHP

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www.midlandindustries.com

FEMALE ADAPTER BSPP



PART #	FEMALE PIPE 1	MALE BSPP 2	
704222	1/8	1/8-28	----
704242	1/4	1/8-28	----
704244	1/4	1/4-19	----
704266	3/8	3/8-19	----
704288	1/2	1/2-14	----
70421212	3/4	3/4-14	----
70421616	1	1-11	----

3455 MMFP

STEEL METRIC ADAPTERS

MALE CONNECTOR



PART #	JIC THREAD SIZE 1	METRIC THREAD 2	
7005410	7/16-20	10x1.0	----
7005412	7/16-20	12x1.5	----
7005414	7/16-20	14x1.5	----
7005418	7/16-20	18x1.5	----
7005512	1/2-20	12x1.5	----
7005514	1/2-20	14x1.5	----
7005614	9/16-18	14x1.5	----
7005616	9/16-18	16x1.5	----
7005618	9/16-18	18x1.5	----
7005816	3/4-16	16x1.5	----
7005818	3/4-16	18x1.5	----
7005822	3/4-16	22x1.5	----
70051018	7/8-14	18x1.5	----
70051020	7/8-14	20x1.5	----
70051022	7/8-14	22x1.5	----
70051222	1-1/16-12	22x1.5	----

Port-seal crush washer and O-ring included

7400 30J (R) 7011

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer.
 For more information, visit www.P65Warnings.ca.gov

STEEL METRIC ADAPTERS

HYDRAULIC ADAPTERS

MALE ELBOW



PART #	JIC THREAD SIZE 1	METRIC THREAD 2	
7205NWO410	7/16-20	10x1.0	----
7205NWO412	7/16-20	12x1.5	----
7205NWO414	7/16-20	14x1.5	----
7205NWO512	1/2-20	12x1.5	----
7205NWO614	9/16-18	14x1.5	----
7205NWO616	9/16-18	16x1.5	----
7205NWO816	3/4-16	16x1.5	----
7205NWO818	3/4-16	18x1.5	----
7205NWO822	3/4-16	22x1.5	----
7205NWO1018	7/8-14	18x1.5	----

Port-seal crush washer and O-ring included 7801 315 (R)



PART #	JIC THREAD SIZE 1	METRIC THREAD 2	
7025410	7/16-20	10x1.0	----
7025412	7/16-20	12x1.5	----
7025512	1/2-20	12x1.5	----
7025614	9/16-18	14x1.5	----
7025616	9/16-18	16x1.5	----
7025816	3/4-16	16x1.5	----
70251022	7/8-14	22x1.5	----
70251227	1-1/16-12	27x2.0	----
70251633	1-5/16-12	33x2.0	----

7402 30JS (R)

HEX HEAD PLUG METRIC PARALLEL



PART #	METRIC THREAD	
8555P10	10x1.0	----
8555P12	12x1.5	----
8555P14	14x1.5	----
8555P16	16x1.5	----
8555P18	18x1.5	----
8555P20	20x1.5	----
8555P22	22x1.5	----
8555P26	26x1.5	----
8555P30	30x1.5	----

7408

HOLLOW HEX HEAD PLUG



PART #	METRIC THREAD	
8555H10	10x1.0	----
8555H12	12x1.5	----
8555H14	14x1.5	----
8555H16	16x1.5	----
8555H18	18x1.5	----
8555H20	20x1.5	----
8555H22	22x1.5	----
8555H26	26x1.5	----
8555H30	30x1.5	----

7408 HHP

FEMALE ADAPTER



PART #	FEMALE PIPE THREAD 1	METRIC THREAD 2	
7045210	1/8	10x1.0	----
7045412	1/4	12x1.5	----
7045414	1/4	14x1.5	----
7045612	3/8	12x1.5	----
7045616	3/8	16x1.5	----
7045618	3/8	18x1.5	----
7045816	1/2	16x1.5	----
7045818	1/2	18x1.5	----
7045822	1/2	22x1.5	----
70451227	3/4	27x2.0	----
70451633	1	33x2.0	----

MMFP (R)

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

ISO A AND B INTERCHANGE

HYDRAULIC ADAPTERS



- Brass Body
- Steel Wing Nut
- Buna-Seal (-40° to +250°F)

Aeroquip 5100
Parker 6100
Snaptite B78



- Bonded Face Seal
- External ORing Alleviates Full Connection

PART #	BODY SIZE	FEMALE NPT	MAX PSI		PART #	BODY SIZE	FEMALE NPT	MAX PSI	
61150	3/4	1/2	3000	----	61050	3/4	1/2	3000	----
61152	3/4	3/4	3000	----	61052	3/4	3/4	3000	----
61153	1	1	3000	----	61053	1	1	3000	----
61154	1-1/4	1-1/4	2750	----	61054	1-1/4	1-1/4	2750	----

FEATURES - ISO A and ISO B

- Poppet valves to prevent uncoupled leakage
- Critical parts are induction hardened for durability
- Dependable ball-locking mechanism holds the mating halves together
- Socket and plug are precision machined from solid barstock
- Standard nitrile seals temp range -40°F to +250°F

Body Size	ISO 7241-1 ISO-A Interchange (Connected)			
	Steel Coupler/ Plug			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	5,000	345	18,270	1,200
3/8"	4,000	275	18,270	1,200
1/2"	4,000	275	16,500	1,100
3/4"	4,000	275	14,800	1,000
1"	4,000	275	12,400	850

INTERCHANGE DATA:

- Parker 6600, Aeroquip/ Eaton FD56, Dixon 'K' Series.
- Hansen HA 15000, Safeway S56

Body Size	ISO 7241-1 Series B ISO-B Interchange (Connected)							
	Steel Coupler/ Plug				Brass Coupler/ Plug			
	Max. Working		Burst		Max. Working		Burst	
	PSI	Bar	PSI	Bar	PSI	Bar	PSI	Bar
1/4"	5,000	345	22,500	1,550	3,000	200	15,000	1,000
3/8"	4,000	275	16,500	1,150	2,500	175	12,000	800
1/2"	4,000	275	16,000	1,100	2,500	175	11,500	750
3/4"	4,000	275	16,500	1,150	2,000	150	12,000	800
1"	4,000	275	16,000	1,100	1,500	100	8,500	800

INTERCHANGE DATA:

- Parker 60 Series, Snap-tite 72 series, Dixon 'H' series
- Hansen HK - series, Aeroquip/ Eaton FDH5

B=BRASS



BRASS - HNV SERIES PLUG



BRASS - HNV SERIES COUPLER

ISO-A FEMALE PIPE COUPLER

PART #	BODY SIZE	NPT	
ANV14F	1/4"	1/4"	----
ANV38F	3/8"	3/8"	----
ANV12F	1/2"	1/2"	----
ANV34F	3/4"	3/4"	----
ANV1F	1"	1"	----

ISO-A FEMALE PIPE PLUG

PART #	BODY SIZE	NPT	
ANV14M	1/4"	1/4"	----
ANV38M	3/8"	3/8"	----
ANV12M	1/2"	1/2"	----
ANV34M	3/4"	3/4"	----
ANV1M	1"	1"	----

ISO-B FEMALE PIPE COUPLER

PART #	BODY SIZE	NPT	
HNV14F	1/4"	1/4"	----
HNV14FB	1/4"	1/4"	----
HNV38F	3/8"	3/8"	----
HNV38FB	3/8"	3/8"	----
HNV12F	1/2"	1/2"	----
HNV12FB	1/2"	1/2"	----
HNV34F	3/4"	3/4"	----
HNV34FB	3/4"	3/4"	----

ISO-B FEMALE PIPE PLUG

PART #	BODY SIZE	NPT	
HNV14M	1/4"	1/4"	----
HNV14MB	1/4"	1/4"	----
HNV38M	3/8"	3/8"	----
HNV38MB	3/8"	3/8"	----
HNV12M	1/2"	1/2"	----
HNV12MB	1/2"	1/2"	----
HNV34M	3/4"	3/4"	----
HNV34MB	3/4"	3/4"	----

WARNING: This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, visit www.P65Warnings.ca.gov

FLUSH FACE ISO

HYDRAULIC ADAPTERS

FEATURES

- Steel construction, zinc plated trivalent finish. Hardened Nipples and sleeves and solid barstock construction for maximum resistance to damage from hydraulic and mechanical shock.
- This Anti-Blowout Nitrile/ PTFE bonded seal is designed to prevent blow out or damage during severe service conditions.
- Durable ball-locking mechanism assures reliable connection everytime.
- Temp Range -65° to +250°

ISO 16028

Body Size	FLUSH FACE			
	Steel Coupler/ Plug Coupled			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	5,000	345	18,270	1,200
3/8"	4,000	275	18,270	1,200
1/2"	4,000	275	16,500	1,100
5/8"	4,000	275	14,800	1,000
3/4"	4,000	275	12,400	850
1"	3,000	200	12,600	850

FF Series
HTMC
74C



FEMALE PIPE COUPLER

PART #	BODY SIZE	NPT	
FF14F	1/4"	1/4"	----
FF38F	3/8"	3/8"	----
FF12F	1/2"	1/2"	----
FF3812F	3/8"	1/2"	----
FF1234F	1/2"	3/4"	----
FF3416F	3/4"	1"	----
FF34F	3/4"	3/4"	----
FF-1-F	1"	1"	----

FF Series
HTMN
74N



FEMALE PIPE PLUG

PART #	BODY SIZE	NPT	
FF14M	1/4"	1/4"	----
FF38M	3/8"	3/8"	----
FF12M	1/2"	1/2"	----
FF3812M	3/8"	1/2"	----
FF1234M	1/2"	3/4"	----
FF3416M	3/4"	1"	----
FF34M	3/4"	3/4"	----
FF1M	1"	1"	----

FLAT FACE THREAD LOCK - VEP QUICK COUPLING

SPECIFICATIONS

BODY SIZE (IN)	1/2(12)	3/4(34)	1(1)	1-1/2(24)
Rated Pressure (PSI)	7000	7000	6000	5000
Rated Flow (GPM)	12	50	88	152
Temperature Range	-20°C +120°C			

APPLICATIONS

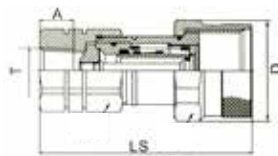
- Widely used in public equipment
- Portable construction equipment.
- Hydraulic tools
- Vehicles

FEATURES

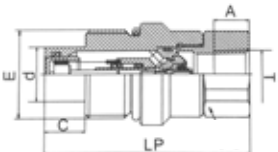
- New valve design provides better resistance from high flow and the pressure of impulse, thus providing advanced performance.
- Special nipple design for connecting under pressure, allows connection and disconnection with high residual pressures.
- The LSQ-VEP series employs a threaded sleeve locking mechanism, mates with matching male threads on the coupler.
- New plating treatment provides advanced anti-rust performance.
- LSQ-VEP series couplings employ flush valving when connecting or disconnecting, therefore only a small amount of fluid can be lost during disconnecting or air inclusion during reconnection.
- The Anti-Blowout bonded seal is designed to prevent blow-out or damage during severe service conditions.
- Machined form solid steel barstock for durability. Compatible with most other VEP series.
- **O-Ring SAE Boss Thread available with import lead time (same list price)**

Standard seal material is **NBR**

Test Fluid-Oil = 200 SUS



FEMALE COUPLER					
PART #	LS	D	A	NPT	
LSQVEP12SF	4.09	1.13	0.67	1/2	----
LSQVEP34SF	4.49	2.13	0.79	3/4	----
LSQVEP1SF	5.28	2.33	0.83	1	----
LSQVEP20SF	5.71	2.72	0.83	1-1/4	----
LSQVEP24SF	7.41	3.63	0.83	1-1/2	----



FEMALE PLUG					
PART #	LS	D	A	NPT	
LSQVEP12PF	4.09	1.13	0.67	1/2	----
LSQVEP34PF	4.49	2.13	0.79	3/4	----
LSQVEP1PF	5.28	2.33	0.83	1	----
LSQVEP20PF	5.71	2.72	0.83	1-1/4	----
LSQVEP24PF	7.41	3.63	0.83	1-1/2	----

QUICK DISCONNECT - HYDRAULIC JACK

HYDRAULIC ADAPTERS

Nominal Size	AG - Series Agricultural Interchange (Connected)			
	Steel Coupler/ Plug			
	Maximum Working		Burst	
	PSI	Bar	PSI	Bar
1/4"	4,000	275	21,000	1,500
3/8"	4,000	275	23,100	1,600
1/2"	4,000	275	16,500	1,100
3/4"	3,000	200	10,300	700
1"	3,000	200	13,000	900

Snap-Tite 60 Series



FEMALE PIPE COUPLER

Part #	Body Size	NPT	
NV14F	1/4"	1/4"	----
NV38F	3/8"	3/8"	----
NV12F	1/2"	1/2"	----
NV34F	3/4"	3/4"	----
NV1F	1"	1"	----

FEMALE PIPE PLUG

Part #	Body Size	NPT	
NV14M	1/4"	1/4"	----
NV38M	3/8"	3/8"	----
NV12M	1/2"	1/2"	----
NV34M	3/4"	3/4"	----
NV1M	1"	1"	----

FEATURES

- Heavy duty heat treated poppet: valves are standard with rugged, specially-designed seals made of nitrite for leak-free performance in the toughest application.
- High-strength steel valve guides designed for high flow rates and made extra tough for agricultural service.
- Dependable hardened chrome alloy steel locking balls. Heat treated plugs and sleeves.
- Standard seals temp range -40°F to +250°F

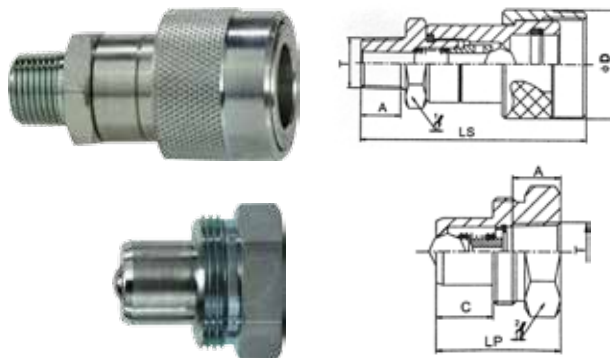
THREAD LOCK HYDRAULIC JACK COUPLING

SPECIFICATIONS

Body Size	1/4(14)	3/8(38)
Rated Pressure	10,000	
Rated Flow (GPM)	3	6
Temperature Range	-20°C +120°C	
Standard seal material is NBR		

APPLICATIONS

- Thread lock couplings with their threaded union locking system and precision ball-type check valves are designed for extreme high pressure applications such as portable hydraulic jacks.
- **Ball Type.**



MALE COUPLER

PART #	LS	D	HEX	A	NPT	
KZEB14SM	2.40	1.14	0.87	0.55	1/4	----
KZEB38SM	2.91		0.98	0.57	3/8	----

FEMALE COUPLER

PART #	LS	D	HEX	A	NPT	
KZEB14PF	1.30	0.44	0.75	0.51	1/4	----
KZEB38PF	1.38	0.63	1.26	0.55	3/8	----

WARNING: This product can expose you to chemicals, including Cobalt, which are known to the State of California to cause cancer. For more information, visit www.P65Warnings.ca.gov

HYDRAULIC FLOW CONTROL/ NEEDLE VALVES

HYDRAULIC ADAPTERS

MM-FC SERIES FLOW CONTROL VALVES

FEATURES:

- Micrometer adjustment knob for accurate valve setting.
- Rugged construction.

TECHNICAL DATA:

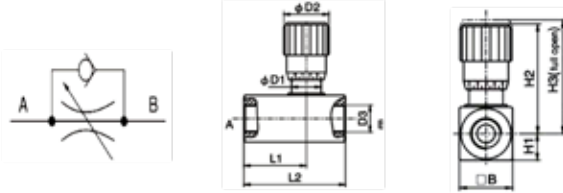
• Materials

Body: Carbon steel w/ black oxide plating
 Handle: Zinc Alloy
 Set Screw: Steel
 Packing: Buna O-Ring/ PTFE stem packing

Maximum Pressure: 5000PSI
 Temperature Ratings: -4°F to 176°F (-20°C to 80°C)
 Flow Rate: 0-42 GPM



INLET
 << FREE FLOW



Part#	B	D1	D2	D3	H1	H2	H3	L1	L2	WEIGHT (lbs)	
MMFC4NPT	1.10	0.76	1.18	1/4 NPT	0.55	2.41	2.67	1.54	2.52	0.90	----
MMFC6NPT	1.10	0.76	1.18	3/8 NPT	0.55	2.41	2.67	1.69	2.75	0.90	----
MMFC8NPT	1.50	0.95	1.46	1/2 NPT	0.75	3.07	3.41	2.05	3.27	2.00	----
MMFC12NPT	1.50	0.95	1.46	3/4 NPT	0.75	3.08	3.41	2.19	3.50	2.00	----
MMFC16NPT	1.89	1.38	1.89	1 NPT	0.94	4.03	4.50	2.79	4.60	4.20	----
MMFC20NPT	2.38	1.96	2.28	1-1/4 NPT	1.18	5.25	5.88	3.39	6.07	9.55	----

MM-NV SERIES NEEDLE VALVES

FEATURES:

- Micrometer adjustment knob for accurate valve setting.
- Rugged construction.

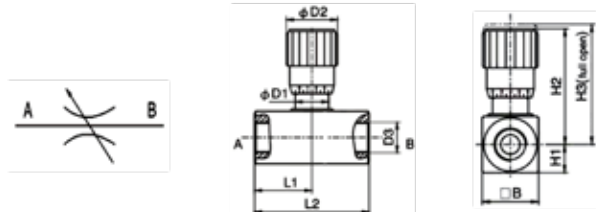
TECHNICAL DATA:

• Materials

Body: Carbon steel w/ black oxide plating
 Handle: Zinc Alloy
 Set Screw: Steel
 Packing: Buna O-Ring/ PTFE stem packing

Maximum Pressure: 5000PSI
 Temperature Ratings: -4°F to 176°F (-20°C to 80°C)
 Flow Rate: 0-42 GPM

• FULL SHUT-OFF



Part#	B	D1	D2	D3	H1	H2	H3	L1	L2	WEIGHT (lbs)	
MMNV4NPT	1.10	0.76	1.18	1/4 NPT	0.55	2.41	2.67	1.07	2.13	0.90	----
MMNV6NPT	1.10	0.76	1.18	3/8 NPT	0.55	2.41	2.67	1.07	2.13	0.90	----
MMNV8NPT	1.50	0.95	1.46	1/2 NPT	0.75	3.07	3.41	1.34	2.38	2.00	----
MMNV12NPT	1.50	0.95	1.46	3/4 NPT	0.75	3.08	3.41	1.54	3.09	2.00	----
MMNV16NPT	1.89	1.38	1.89	1 NPT	0.94	4.03	4.50	1.81	3.62	4.20	----

WARNING: This product can expose you to chemicals, including cobalt, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, visit www.P65Warnings.ca.gov



HYDRAULIC FLOW CONTROL/ BREATHERS

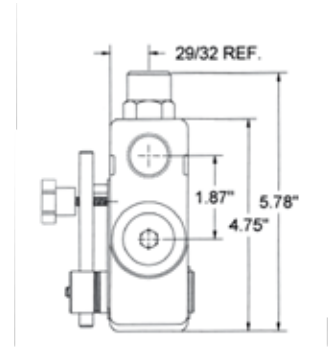
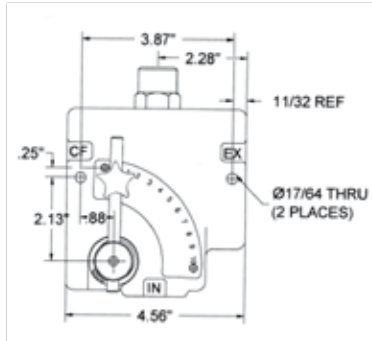
HYDRAULIC ADAPTERS

PRESSURE COMPENSATING VARIABLE FLOW CONTROL

FEATURES:

MFC-51 model is a full range pressure compensating variable flow control. It is designed so that the orifice area varies as the lever is rotated. The outlet flow is smooth and constant regardless of the pressure on the control flow or excess flow ports. An adjustable ball spring relief allows for pressure compensated flow up to the pressure setting on the relief. Relief valves are preset at 1500 PSI and field adjustable from 750 to 3000 PSI.

- Materials: Cast Iron Body, Heat Treated Compensator Spool, Stainless Steel Rotary Spool, Buna N "O" Rings (Standard)
- **ALL ARE STANDARD FLOW CONTROL**
- **ALL HAVE ADJUSTABLE BALL SPRING RELIEF**
- **SAE PORT AVAILABLE. MINIMUM ORDER REQUIRED**



Part#	Size	Flow	
MFC38N	3/8" - NPT	0-8 gpm	----
MFC12N	1/2" - NPT	0-16 gpm	----
MFC34N	3/4" - NPT	0-30 gpm	----

SCREW-ON TYPE AIR BREATHERS



- Chrome Plated Steel
- 1/4 To 1 Inch NPT
- 40 Micron Breather

PART NUMBER	FLOW CFM	NPT	
MB4004	10	1/4	----
MB4006	10	3/8	----
MB4008	10	1/2	----
MB4012	25	3/4	----
MB4016	25	1	----

WARNING: This product can expose you to chemicals, including Chromium, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, visit www.P65Warnings.ca.gov

FLANGE ADAPTERS

HYDRAULIC ADAPTERS

STEEL FLANGE ADAPTERS

CONFORMANCE

- SAE J518

MATERIALS

- Steel per SAE J518 with either black phosphate finish or plated zinc finish or iridite dip. Stainless Steel available upon request.

WORKING PRESSURES

The following table lists the recommended working pressures for steel Four-bolt Solid and Split Flange Fittings and Hose Ends manufactured in accordance with SAE standards J518 and J517. SAE recommends sufficient testing to be conducted to assure that performance levels will be safe and satisfactory, especially if installed in systems operating at elevated pressures or in severe conditions. When using Flanged Fittings that have a threaded connection on one end, use the lower pressure rating of the two.

Caution: Although many Four-bolt Flanged Fittings have sufficient structural integrity to support the weight of many components, we recommend consulting with our technical support department for guidance in selection of parts for this purpose.

SAE J518 FOUR-BOLT CODE 61 FLANGE PRESSURE RATINGS

Dash Size	Flange Head OD Inches	4 TO 1 Minimum Burst PSI
-8	1-3/16 - 1.188	5000
-12	1-1/2 - 1.500	5000
-16	1-3/4 - 1.750	5000
-20	2 - 2.000	4000
-24	2-3/8 - 2.375	3000
-32	2-13/16 - 2.812	3000
-40	3-5/16 - 3.312	2500
-48	4 - 4.000	2000
-56	4-1/2 - 4.500	500
-64	5 - 5.000	500
-80	6 - 6.000	500

SAE J518 FOUR-BOLT CODE 62 FLANGE PRESSURE RATINGS

Dash Size	Flange Head OD Inches	4 TO 1 Minimum Burst PSI
-8	1-1/4 - 1.250	6000
-12	1-5/8 - 1.625	6000
-16	1-7/8 - 1.875	6000
-20	2-1/8 - 2.125	6000
-24	2-1/2 - 2.500	6000
-32	3-1/8 - 3.125	6000

STEEL FLANGE ADAPTERS ASSEMBLY INSTRUCTIONS

RECOMMENDED SOLID FOUR-BOLT

- Step 1.** Inspect port area to be smooth and free of nicks, burrs, scratches, or contaminants.
- Step 2.** Lubricate the o-ring and place in flange head groove.
- Step 3.** Lubricate screw threads, slip lock washers onto screws, and insert screws into flange
- Step 4.** Position flange on port and finger tighten all screws.
- Step 5.** Torque the screws in a figure eight sequence, incrementally until the appropriate torque value in the following table is achieved.

J518 CODE 61 AND CODE 62 FLANGE MINIMUM TORQUE VALUES

Dash Size	Port Size	Code 61 Foot/Lbs.	Code 62 Foot/Lbs.
-8	1/2"	15-19	15-19
-12	3/4"	20-29	25-33
-16	1"	27-35	41-50
-20	1-1/4"	35-46	62-75
-24	1-1/2"	46-58	116-133
-32	2"	53-67	200-217
-40	2-1/2"	79	NA
-48	3"	137	NA
-56	3-1/2"	116	NA
-64	4"	116	NA
-80	5"	116	NA

RECOMMENDED SPLIT FOUR-BOLT

- Step 1.** Follow steps 1 through 3 above, then proceed to the following steps.
- Step 2.** Position both flanges on port and turn one screw in each flange about three turns.
- Step 3.** Rotate each flange away from the port for sufficient clearance to position hose or fitting flange head on port.
- Step 4.** Close each flange until it properly captures flange head. Insert remaining screws and finger tighten.
- Step 5.** Torque the screws in a figure eight sequence incrementally until the appropriate torque value in the preceding table is achieved.

WHY WET TORQUE?

Due to the difference in plating types and thickness, materials, and thread quality of different components, the coefficient of friction varies greatly on any given assembly. Lubrication not only produces a more consistent coefficient of friction, it increases clamping force on sealing area with less torque on the threads. Overtightening causes threads to yield, deform and lose their ability to maintain an adequate load or clamping force on the seating area. Extended operation and severe conditions cause further yielding which results in leaks. Overtightening is the single greatest cause for leaks in metal to metal seat hydraulic connections. It is our firm position, that to not wet torque, is to compromise consistency and quality for convenience.

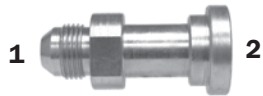
FLANGE ADAPTERS

HYDRAULIC ADAPTERS

JIC FLANGE ADAPTER

CODE 61

6840
503



3000 PSI

PART #	JIC THREAD SIZE 1	FLANGE SIZE 2	LIST PRICE
170088	3/4-16	1/2	
1700812	3/4-16	3/4	
17001212	1-1/16-12	3/4	
17001216	1-1/16-12	1	
17001616	1-5/16-12	1	
17001620	1-5/16-12	1-1/4	
17001624	1-5/16-12	1-1/2	
17002016	1-5/8-12	1	
17002020	1-5/8-12	1-1/4	
17002032	1-5/8-12	2	
17002424	1-7/8-12	1-1/2	
17003232	2-1/2-12	2	
17002024	1-5/8-12	1-1/2	
17002420	1-7/8-12	1-1/4	
17001612	1-5/16-12	3/4	
17002432	1-7/8-12	2	

6840 503

JIC FLANGE 450 ADAPTER

CODE 61

6845
505



3000 PSI

Part #	JIC Thread Size 1	Flange Size 2	
170388	3/4-16	1/2	
1703812	3/4-16	3/4	
17031212	1-1/16-12	3/4	
17031216	1-1/16-12	1	
17031616	1-5/16-12	1	
17031620	1-5/16-12	1-1/4	
17032016	1-5/8-12	1	
17032020	1-5/8-12	1-1/4	
17032024	1-5/8-12	1-1/2	
17033232	2-1/2-12	2	
17032420	1-7/8-12	1-1/4	
17032424	1-7/8-12	1-1/2	
17032432	1-7/8-12	2	
17031612	1-5/16-12	3/4	

6845 505

JIC FLANGE 90° ADAPTER

CODE 61



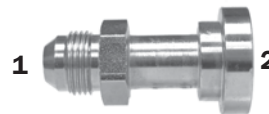
3000 PSI

Part #	JIC Thread Size 1	Flange Size 2	List Price
170488	3/4-16	1/2	
1704812	3/4-16	3/4	
17041016	7/8-14	1	
17041212	1-1/16-12	3/4	
17041216	1-1/16-12	1	
17041220	1-1/16-12	1-1/4	
17041612	1-5/16-12	3/4	
17041616	1-5/16-12	1	
17041620	1-5/16-12	1-1/4	
17041624	1-5/16-12	1-1/2	
17042016	1-5/8-12	1	
17042020	1-5/8-12	1-1/4	
17042024	1-5/8-12	1-1/2	
17042420	1-7/8-12	1-1/4	
17042432	1-7/8-12	2	
17043232	2-1/2-12	2	
17042032	1-5/8-12	2	
17042424	1-7/8-12	1-1/2	

6890 504

JIC FLANGE ADAPTER

CODE 62



6000 PSI

Part #	JIC Thread Size 1	Flange Size 2	
180088	3/4-16	1/2	
18001212	1-1/16-12	3/4	
18001216	1-1/16-12	1	
18001616	1-5/16-12	1	
18001620	1-5/16-12	1-1/4	
18002016	1-5/8-12	1	
18002020	1-5/8-12	1-1/4	
18002024	1-5/8-12	1-1/2	
18002424	1-7/8-12	1-1/2	
18003232	2-1/2-12	2	
18001612	1-5/16-12	3/4	
18001624	1-5/16-12	1-1/2	
18002420	1-7/8-12	1-1/4	

6842

FLANGE ADAPTERS

HYDRAULIC ADAPTERS

JIC FLANGE 45° ADAPTER CODE 62



6000 PSI

PART #	JIC THREAD SIZE 1	FLANGE SIZE 2	LIST PRICE
18031212	1-1/16-12	3/4	
18031216	1-1/16-12	1	
18031616	1-5/16-12	1	
18031620	1-5/16-12	1-1/4	
18032016	1-5/8-12	1	
18032020	1-5/8-12	1-1/4	
18032024	1-5/8-12	1-1/2	
18032424	1-7/8-12	1-1/2	
18033232	2-1/2-12	2	
18031612	1-5/16-12	3/4	
18031624	1-5/16-12	1-1/2	
18032420	1-7/8-12	1-1/4	

6847 508

JIC FLANGE 90° ADAPTER - CODE 62



6000 PSI

PART #	JIC THREAD SIZE 1	FLANGE SIZE 2	LIST PRICE
18041212	1-1/16-12	3/4	
18041216	1-1/16-12	1	
18041616	1-5/16-12	1	
18041620	1-5/16-12	1-1/4	
18042016	1-5/8-12	1	
18042020	1-5/8-12	1-1/4	
18042024	1-5/8-12	1-1/2	
18042424	1-7/8-12	1-1/2	
18043232	2-1/2-12	2	
18041612	1-5/16-12	3/4	
18041624	1-5/16-12	1-1/2	
18042420	1-7/8-12	1-1/4	

6842

SPLIT FLANGE PLUG - CODE 61



3000 PSI

PART #	FLANGE SIZE	LIST PRICE
196112	3/4	11.10
196116	1	11.10
196120	1-1/4	12.07
196124	1-1/2	14.94
196132	2	37.41

6861P

SPLIT FLANGE PLUG CODE 62

6862P



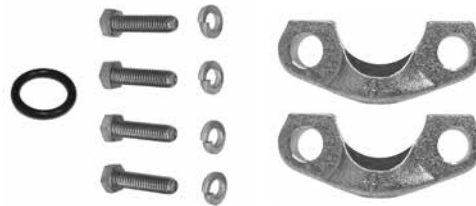
6000 PSI

PART #	FLANGE SIZE	LIST PRICE
196212	3/4	25.17
196216	1	25.78
196220	1-1/4	28.57
196224	1-1/2	34.10
196232	2	72.40

6862P

SPLIT FLANGE KIT CODE 61

SFK



3000 PSI

PART #	FLANGE SIZE	FLANGE HEAD DIA.	LIST PRICE
190112	3/4	1.50	20.46
190116	1	1.75	29.31
190120	1-1/4	2.00	33.30
190124	1-1/2	2.38	28.28
190132	2	2.81	37.41

SPLIT FLANGE KIT CODE 62

SFXK



6000 PSI

PART #	FLANGE SIZE	FLANGE HEAD DIAMETER	LIST PRICE
190212	3/4	1.63	48.22
190216	1	1.88	35.78
190220	1-1/4	2.12	44.12
190224	1-1/2	2.50	63.52
190232	2	3.12	141.00

FLANGE ADAPTERS

HYDRAULIC ADAPTERS

SPLIT FLANGE HALF CODE 61

SF



3000 PSI

PART #	FLANGE SIZE	FLANGE HEAD DIAMETER	LIST PRICE
206112	3/4	1.50	3.67
206116	1	1.75	3.32
206120	1-1/4	2.00	9.22
206124	1-1/2	2.38	6.14
206132	2	2.81	7.26

SPLIT FLANGE HALF CODE 62

SFX



6000 PSI

PART #	FLANGE SIZE	FLANGE HEAD DIAMETER	LIST PRICE
206212	3/4	1.63	6.67
206216	1	1.88	7.84
206220	1-1/4	2.12	13.57
206224	1-1/2	2.50	17.14
206232	2	3.12	35.60

PIPE THREAD FLANGE PAD CODE 61

W43



3000 PSI

PART #	PIPE SIZE	LIST PRICE
226188	1/2	33.15
22611212	3/4	28.78
22611616	1	29.46
22612020	1-1/4	40.41
22612424	1-1/2	38.60
22613232	2	45.89

PIPE THREAD FLANGE PAD CODE 62

W44



6000 PSI

PART #	PIPE SIZE	LIST PRICE
22621212	3/4	105.77
22621616	1	65.17
22622020	1-1/4	96.05
22622424	1-1/2	111.23
22623232	2	141.88

O-RING FLANGE PAD CODE 61

W46



3000 PSI

PART #	O-RING THREAD SIZE	PAD SIZE	LIST PRICE
23611212	1-1/16-12	3/4	43.31
23611616	1-5/16-12	1	42.45
23612020	1-5/8-12	1-1/4	49.17
23612424	1-7/8-12	1-1/2	57.78

O-RING FLANGE PAD CODE 62

W48



6000 PSI

PART #	O-RING THREAD SIZE	PAD SIZE	LIST PRICE
23621212	1-1/16-12	3/4	64.99
23621616	1-5/16-12	1	84.08
23622020	1-5/8-12	1-1/4	93.02
23622424	1-7/8-12	1-1/2	161.95