

CONFORMANCE

- SAE J514
- 30-Degree Chamfers - Most NPSM pipe swivel union fittings have 30-degree chamfer on NPTF male end of fittings. This chamfer is optional per SAE J514. If chamfer is mandatory, consult with our customer service department to verify chamfer exists on items you are requesting.
- Temperature Range" -65° F to +400° F

MATERIALS

- Steel - Carbon steel plated Zinc with yellow Dichromate per ASTM B633-98 (Type II SC-2).

Torque Values: The torque values provide benchmarks that we believe give optimum results for leak free connections. Actual torque values should be based on individual applications.

WORKING PRESSURES

The following table lists the recommended working pressures for steel 37° flare hydraulic tube fittings manufactured in accordance with SAE standard J514. Many factors such as impulsing, vibration, mechanical shock and over tightening may affect the integrity of the fitting and swivel union connection. For these reasons, the recommended working pressures are actually lower than the capacity of the fittings. 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 fittings with different size or thread type, use the lower pressure rating of the two threads.

SAE J514 NPSM PRESSURE RATINGS

Dash Size	NPSM Thread Size	4 TO 1 Minimum Burst PSI
-2	1/8-27	5000
-4	1/4-18	5000
-6	3/8-18	4000
-8	1/2-14	3500
-12	3/4-14	2250
-16	1-11 1/2	2000
-20	1-1/4-11 1/2	1625
-24	1-1/2-11 1/2	1250
-32	2-11 1/2	1125

Caution: NPSM pipe swivel unions are not designed to provide structural support for other components.

Hydraulic

**STEEL PIPE SWIVEL
ASSEMBLY INSTRUCTIONS**

RECOMMENDED

- Step 1.** Inspect male pipe fitting connecting to swivel and confirm that it has an internal 30-degree chamfer. Do not install into union if chamfer is missing.
- Step 2.** Lubricate the threads and the entire chamfered area of male fitting with hydraulic fluid or other light weight lubricant.
- Step 3.** Install lubricated pipe fitting into swivel nut and turn nut until finger tight.
- Step 4.** Place wrench on hex of male fitting to prevent male fitting from turning, and torque swivel nut to the values in the following table.

Caution: Never back off an installed pipe fitting to achieve proper alignment. Loosening installed pipe fittings will corrupt the seal and contribute to leakage and failure.

Dash Size	NPSM Thread Size	Torque Foot/Lbs.
-2	1/8-27	13
-4	1/4-18	20
-6	3/8-18	25
-8	1/2-14	47
-12	3/4-14	84
-16	1-11 1/2	129
-20	1-1/4-11 1/2	152
-24	1-1/2-11 1/2	152
-32	2-11 1/2	300

ALTERNATE ASSEMBLY METHOD

- Step 1.** If torque method not possible, follow steps 1-3 above, then proceed to the steps below.
- Step 2.** Place wrench on hex of male pipe fitting and consider this wrench in the 12 o'clock position.
- Step 3.** Lightly wrench tighten the swivel union nut so that the wrench is as near the 3 o'clock position as possible.
- Step 4.** Rotate wrench in 3 o'clock position counterclockwise to no less than the 1 o'clock position, but no more than the 12 o'clock position.

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. Over tightening causes threads to yield, deform and lose their ability to maintain an adequate load of clamping force on the sealing area. Extended operation and severe conditions cause further yielding which results in leaks. Over tightening 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.



STEEL PIPE SWIVEL ADAPTERS

MALE PIPE SWIVEL ADAPTER

SAE 140130

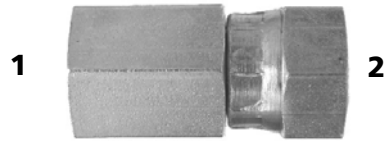


Part #	Male Pipe 1	Female NPSM 2
604-02-02S	1/8	1/8
604-02-04S	1/8	1/4
604-04-02S	1/4	1/8
604-04-04S	1/4	1/4
604-04-06S	1/4	3/8
604-04-08S	1/4	1/2
604-06-04S	3/8	1/4
604-06-06S	3/8	3/8
604-06-08S	3/8	1/2
604-06-12S	3/8	3/4
604-08-04S	1/2	1/4
604-08-06S	1/2	3/8
604-08-08S	1/2	1/2
604-08-12S	1/2	3/4
604-12-06S	3/4	3/8
604-12-08S	3/4	1/2
604-12-12S	3/4	3/4
604-12-16S	3/4	1
604-16-08S	1	1/2
604-16-12S	1	3/4
604-16-16S	1	1
604-16-20S	1	1-1/4
604-20-16S	1-1/4	1
604-20-20S	1-1/4	1-1/4
604-20-24S	1-1/4	1-1/2
604-24-20S	1-1/2	1-1/4
604-24-24S	1-1/2	1-1/2
604-32-32S	2	2

*Also available in Stainless Steel
More sizes available
- Available in a Restrictor -*

FEMALE PIPE SWIVEL ADAPTER

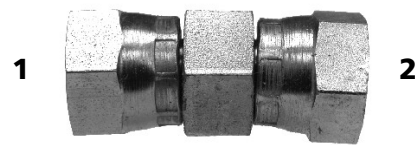
SAE 140131



Part #	Female Pipe 1	Female NPSM 2
605-02-02S	1/8	1/8
605-02-04S	1/8	1/4
605-04-02S	1/4	1/8
605-04-04S	1/4	1/4
605-04-06S	1/4	3/8
605-06-04S	3/8	1/4
605-06-06S	3/8	3/8
605-06-08S	3/8	1/2
605-08-04S	1/2	1/4
605-08-06S	1/2	3/8
605-08-08S	1/2	1/2
605-08-12S	1/2	3/4
605-12-08S	3/4	1/2
605-12-12S	3/4	3/4
605-12-16S	3/4	1
605-16-16S	1	1
605-20-20S	1-1/4	1-1/4
605-24-24S	1-1/2	1-1/2
605-32-32S	2	2

Available in Stainless Steel

FEMALE SWIVEL UNION



Part #	Female NPSM 1	Female NPSM 2
610-04-04S	1/4	1/4
610-06-06S	3/8	3/8
610-08-08S	1/2	1/2
610-12-12S	3/4	3/4
610-16-16S	1	1



Hydraulic Adapters

MALE PIPE ELBOW SWIVEL ADAPTER

SAE 140230



Part #	Male Pipe 1	Female NPSM 2
601-02-02S	1/8	1/8
601-02-04S	1/8	1/4
601-04-02S	1/4	1/8
601-04-04S	1/4	1/4
601-04-06S	1/4	3/8
601-04-08S	1/4	1/2
601-06-04S	3/8	1/4
601-06-06S	3/8	3/8
601-06-08S	3/8	1/2
601-06-12S	3/8	3/4
601-08-04S	1/2	1/4
601-08-06S	1/2	3/8
601-08-08S	1/2	1/2
601-08-12S	1/2	3/4
601-12-06S	3/4	3/8
601-12-08S	3/4	1/2
601-12-12S	3/4	3/4
601-12-16S	3/4	1
601-16-08S	1	1/2
601-16-12S	1	3/4
601-16-16S	1	1
601-16-20S	1	1-1/4
601-20-16S	1-1/4	1
601-20-20S	1-1/4	1-1/4
601-20-24S	1-1/4	1-1/2
601-24-20S	1-1/2	1-1/4
601-24-24S	1-1/2	1-1/2
601-32-32S	2	2

*Also available in Stainless Steel
More sizes available*

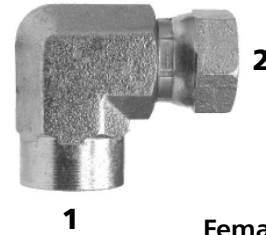
- Available in a Restrictor -

EXTRA LONG MALE PIPE ELBOW



Part #	Male Pipe 1	Female NPSM 2
601LL-04-04S	1/4	1/4
601LL-06-06S	3/8	3/8
601LL-08-08S	1/2	1/2
601LL-12-12S	3/4	3/4
601LL-16-16S	1	1

FEMALE UNION ELBOW SWIVEL ADAPTER



Part #	Female Pipe 1	Female NPSM 2
602-02-02S	1/8	1/8
602-02-04S	1/8	1/4
602-04-02S	1/4	1/8
602-04-04S	1/4	1/4
602-04-06S	1/4	3/8
602-06-04S	3/8	1/4
602-06-06S	3/8	3/8
602-06-08S	3/8	1/2
602-08-04S	1/2	1/4
602-08-06S	1/2	3/8
602-08-08S	1/2	1/2
602-08-12S	1/2	3/4
602-12-08S	3/4	1/2
602-12-12S	3/4	3/4
602-12-16S	3/4	1
602-16-16S	1	1
602-20-20S	1-1/4	1-1/4
602-24-24S	1-1/2	1-1/2
602-32-32S	2	2

Available in Stainless Steel

Send DFBurnham all your high volume quotes!

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MALE 45° PIPE ELBOW SWIVEL ADAPTER



Part #	Male Pipe 1	Female NPSM 2
606-02-02S	1/8	1/8
606-02-04S	1/8	1/4
606-04-02S	1/4	1/8
606-04-04S	1/4	1/4
606-04-06S	1/4	3/8
606-06-04S	3/8	1/4
606-06-06S	3/8	3/8
606-06-08S	3/8	1/2
606-08-04S	1/2	1/4
606-08-06S	1/2	3/8
606-08-08S	1/2	1/2
606-08-12S	1/2	3/4
606-12-06S	3/4	3/8
606-12-08S	3/4	1/2
606-12-12S	3/4	3/4
606-12-16S	3/4	1
606-16-12S	1	3/4
606-16-16S	1	1
606-16-20S	1	1-1/4
606-20-16S	1-1/4	1
606-20-20S	1-1/4	1-1/4
606-24-24S	1-1/2	1-1/2
606-32-32S	2	2

*Also available in Stainless Steel
More sizes available*

FEMALE 45° UNION ELBOW SWIVEL ADAPTER



Part #	Female Pipe 1	Female NPSM 2
607-02-02S	1/8	1/8
607-04-04S	1/4	1/4
607-06-04S	3/8	1/4
607-06-06S	3/8	3/8
607-08-06S	1/2	3/8
607-08-08S	1/2	1/2
607-12-12S	3/4	3/4
607-16-16S	1	1
607-20-20S	1-1/4	1-1/4
607-24-24S	1-1/2	1-1/2

*Also available in Stainless Steel
More sizes available*

MALE SWIVEL BRANCH TEE



Part #	Male Pipe 1	Female NPSM 2 & 3
608-02-02S	1/8	1/8
608-04-04S	1/4	1/4
608-06-04S	3/8	1/4
608-06-06S	3/8	3/8
608-06-08S	3/8	1/2
608-08-04S	1/2	1/4
608-08-06S	1/2	3/8
608-08-08S	1/2	1/2
608-12-08S	3/4	1/2
608-12-12S	3/4	3/4
608-16-12S	1	3/4
608-16-16S	1	1
608-20-20S	1-1/4	1-1/4
608-24-24S	1-1/2	1-1/2

FEMALE SWIVEL BRANCH TEE



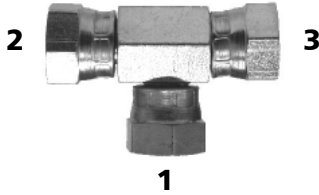
Part #	Female Pipe 1	Female NPSM 2 & 3
609-02-02S	1/8	1/8
609-04-04S	1/4	1/4
609-06-04S	3/8	1/4
609-06-06S	3/8	3/8
609-08-06S	1/2	3/8
609-08-08S	1/2	1/2
609-12-08S	3/4	1/2
609-12-12S	3/4	3/4
609-16-12S	1	3/4
609-16-16S	1	1
609-20-20S	1-1/4	1-1/4
609-24-24S	1-1/2	1-1/2

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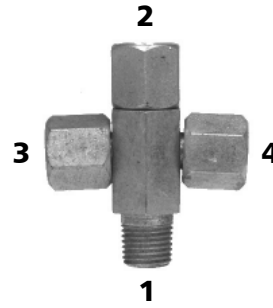
Hydraulic Adapters

FEMALE SWIVEL UNION TEE



Part #	Female NPSM 1	Female NPSM 2 & 3
603-02-02S	1/8	1/8
603-04-04S	1/4	1/4
603-06-06S	3/8	3/8
603-08-08S	1/2	1/2
603-12-12S	3/4	3/4
603-16-16S	1	1
603-20-20S	1-1/4	1-1/4

SWIVEL CROSS



Part #	Male Pipe 1	Female NPSM 2, 3 & 4
1604-4-4	1/4	1/4
1604-6-6	3/8	3/8
1604-8-88S	1/2	1/2



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