Features, NPTF Pipe Fittings

NPTF pipe fittings described in this section include fittings with NPTF male or female pipe ends. Pipe thread connections are used in a wide variety of applications and provide reliable metal to metal sealing. Because of the tapered NPTF thread design, pipe thread connections are not recommended for applications that require repeated re-assembly or precise orientation of the fitting after tightening.

For connections between male or female NPTF pipe ends and 37 degree tube ends, refer to the Tube Fittings Section. For connections between male/female NPTF pipe ends and SAE O-ring Ports, refer to the Adjustable and O-ring Fittings Section. For connections between NPTF male pipe ends and Female NPSM Swivels, refer to the Adapter Union Section.

Performance

Where applicable, fittings are designed and qualified to the requirements of SAE J514. Beaded hose stem ends conform to SAE J1231 and are intended for suction or low pressure lines, typically less than 300 psi.

Construction

Unless otherwise specified, fittings are machined from carbon steel and may utilize brazed construction for shaped fittings. Standard plating is Zinc with a yellow Dichromate finish per ASTM B633 (Type II SC2) and is rated at 96 hours minimum salt spray resistance.

Threads

NPTF Threads: Male and female pipe threads conform to the Dryseal American Standard Taper Pipe Thread (SAE J476a, NPTF) Series which will provide pressure

tight joints without the use of a lubricant or sealer. Use of these fittings with non-dryseal NPT pipe or hose ends is not recommended for high-pressure applications.

Note: Where not functionally objectionable, use of a compatible lubricant/sealant is recommended for either NPT or NPTF threads to minimize the possibility of galling in assembly.

Assembly Information

For assembly instructions, refer to the Technical Data Section for the appropriate fitting end. Also, refer to the Technical Data Section for recommendations regarding tubing pressure ratings, tube flares and hose/tube routing information. Please note the following:

Tubing for single flare tube ends should be either seamless or welded and drawn, fully annealed tubing per SAE J524 or J525. For double flaring, tubing per SAE J356, J524, J525 or J526 may be used.

In the design and fabrication of tubing or hose runs for any hydraulic system, precautions should be taken to allow for sufficient adjustment of the hose or tubing so that proper alignment can be attained at the fitting connections. Improper fit-up or misalignment should be corrected before final connections are made. Location of fitting connections should be planned to maximize accessibility. Whenever possible, use a torque wrench to tighten connections to the recommended torque.

Ordering Information

Size of fittings are indicated by dash number relating to sixteenths of an inch for the nominal O.D. of the pipe size used. Example: 1/2 inch pipe = 8/16 or (-8) size.

Order standard fittings from appropriate chart indicating required dash numbers. For example, 5502-8-8 is 1/2" male pipe thread to 1/2" female pipe thread. Jump size 5502-8-6 is 1/2" male pipe thread to 3/8" female pipe thread. Pictorial views for each fitting style indicate the correct numbering sequence for fitting ends.

If information is needed for jump sizes not shown, please contact customer service for engineering assistance.

Table JP1. Pressure Ratings for Fittings With NPTF Pipe Threads

Nominal Pipe Size		Thread Size	Working Pressures	
Nom SAE Dash Size	Nom Inch Pipe O.D.	Dryseal Pipe Thread (NPTF[1]) Male and Female	Fittings With NPTF Pipe Threads	
			MPa	psi
-2	1/8	1/8-27	34.5	5,000
-4	1/4	1/4-18	27.5	4,000
-6	3/8	3/8-18	21	3,000
-8	1/2	1/2-14	21	3,000
-12	3/4	3/4-14	17	2,500
-16	1	1-11-1/2	14	2,000
-20	1 1/4	1-1/4-11-1/2	8	1,150
-24	1 1/2	1-1/2-11-1/2	7	1,000
-32	2	2-11-1/2	7	1,000

1) Dryseal American Standard Taper Pipe Thread