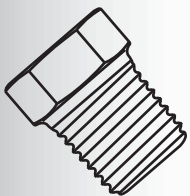


NPT Fitting Guide



Thread Identification			
Fitting Size	Dash Size	Thread Size	Thread O.D. Male
1/8" NPT	-02	1/8-27	13/32"
1/4" NPT	-04	1/4-18	35/64"
3/8" NPT	-06	3/8-18	43/64"
1/2" NPT	-08	1/2-14	27/32"
3/4" NPT	-12	3/4-14	1 1/16"
1" NPT	-16	1-1 1/2	1 5/16"
1 1/4" NPT	-20	1 1/4-1 1/2	1 43/64"
1 1/2" NPT	-24	1 1/2-1 1/2	1 29/32"
2" NPT	-32	2-1 1/2	2 3/8"

Pipe thread fittings seal using a metal-to-metal connection. The metal of the male and female fittings deforms during installation to create this seal. As a result, pipe thread connections tend to leak after a connection is made and then disassembled and re-assembled. If the connection leaks after re-assembly, you may need to replace one or more of the fittings. Continuing to tighten the connection will not necessarily eliminate the leak and can easily result in a split fitting or port.

Over-tightening the connection can easily split the female portion of a pipe thread connection; this is especially an issue when installing male pipe thread fittings into cast iron ports on valves, motors, and cylinders. Split ports are not covered by manufacturers' warranties!

Leaks can also result from vibration, thermal cycling and from loads being supported by the connection (i.e. using the fittings in the connection to support mechanical loads).

Using a liquid thread sealant for NPT connections is recommended over using Teflon tape. If using Teflon tape, only use one-and-a-half wraps around the male portion of the thread. Start two threads up from the end of the male portion of the fitting. Keep in mind that liquid thread sealant and Teflon tape are potential contaminants to the hydraulic system.

Whenever possible, we highly recommend using SAE O-ring fittings or JIC fittings. Both of these provide a highly reliable, reusable connection. Since these fittings don't rely on mechanical deformation to create a seal, the risk of a broken fitting or port is virtually eliminated.

NPT Assembly Instructions

STEP 1: Inspect port and fitting to ensure that both are free of contaminants and excessive burrs and nicks.

STEP 2: Apply a stripe of an anaerobic liquid pipe sealant around the male threads leaving the first two threads uncovered. If no liquid sealant is available, wrap Teflon tape 1-1/2 turns in a clockwise direction, viewed from the pipe end, leaving the first two threads uncovered.

CAUTION: Teflon tape and some pipe sealants are destructive to hydraulic components. Always use extreme caution and follow manufacturer's recommendations for proper application of any sealant in order to prevent contamination.

STEP 3: Screw finger tight into the port.

STEP 4: Wrench tighten the fitting to the correct Turns Past Finger Tight position (See following table). When installing elbows or tees, consider final orientation position as to not exceed the recommended TPFT. A properly assembled fittings total thread engagement should be 3.5 to 6 turns.

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.

Torque installation of pipe fittings is not a recommended practice. Thread taper and quality, different port and fitting materials, plating thickness and types, varying thread sealants, orientation, and other factors reduce the reliability of a torqued connection. If torque installation is required, refer to the following table for suggested torque values.

Fitting Size	Dash Size	Turns Past Finger Tight	Torque ft/lbs
1/8" NPT	-02	1.5 - 3.0	12
1/4" NPT	-04	1.5 - 3.0	25
3/8" NPT	-06	1.5 - 3.0	40
1/2" NPT	-08	1.5 - 3.0	54
3/4" NPT	-12	1.5 - 3.0	78
1" NPT	-16	1 - 2.5	112
1 1/4" NPT	-20	1 - 2.5	154
1 1/2" NPT	-24	1 - 2.5	211
2" NPT	-32	1 - 2.5	300



Thread Size Chart (Male)

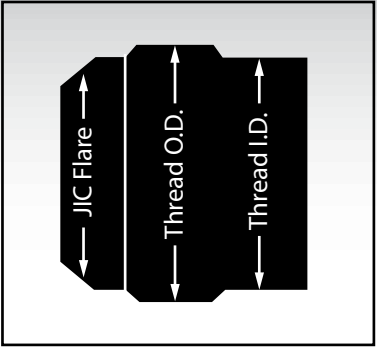
For most accurate sizing results when printing, change the page scaling setting to 'None'.

NPT / BSPT / BSPP

2" -32	1 1/2" -24	1 1/4" -20	1" -16	3/8" -6	1/4" -4	1/8" -2
2" -32	1 1/2" -24	1 1/4" -20	1" -16	3/4" -12	1/2" -8	

JIC 37° / SAE O-Ring

2" -32	1 1/2" -24	1 1/4" -20	1" -16	7/8" -14	3/4" -12	1/2" -8	5/16" -5	1/4" -4
2" -32	1 1/2" -24	1 1/4" -20	1" -16	7/8" -14	3/4" -12	1/2" -8	5/16" -5	1/4" -4



ORFS (O-Ring Face Seal)

1 1/2" -24	1" -16	3/4" -12	5/8" -10	1/2" -8	3/8" -6	1/4" -4
1 1/2" -24	1" -16	3/4" -12	5/8" -10	1/2" -8	3/8" -6	1/4" -4