



Technical Information

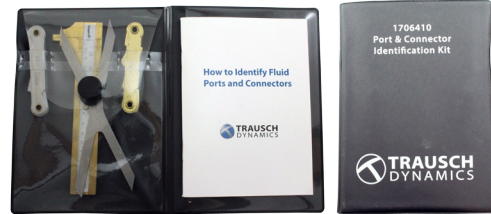
Adapter Sizing Chart

NPTF, BSPT and BSPP measure 1/4" larger than their actual size. For example, a 1/4" NPTF, BSPT or BSPP will actually measure 1/2" on the O. D. of the threads. JIC, SAE O-ring & Flat Face threads measure as listed below. The first number listed is the size of thread, the second number is the threads per inch.

| Size | NPTF (Pipe) | JIC (37°) | SAE (O-Ring) | Face Seal (Flat Face) | BSPP (Parallel) | BSPT (Tapered) |
|------|----------------|-------------|--------------|-----------------------|-----------------|----------------|
| -2 | 1/8 - 27 | 5/16 - 24 | 5/16 - 24 | - | 1/8 - 28 | 1/8 - 28 |
| -3 | - | 3/8 - 24 | 3/8 - 24 | - | - | - |
| -4 | 1/4 - 18 | 7/16 - 20 | 7/16 - 20 | 9/16 - 18 | 1/4 - 19 | 1/4 - 19 |
| -5 | - | 1/2 - 20 | 1/2 - 20 | - | - | - |
| -6 | 3/8 - 18 | 9/16 - 18 | 9/16 - 18 | 11/16 - 16 | 3/8 - 19 | 3/8 - 19 |
| -8 | 1/2 - 14 | 3/4 - 16 | 3/4 - 16 | 13/16 - 16 | 1/2 - 14 | 1/2 - 14 |
| -10 | - | 7/8 - 14 | 7/8 - 14 | 1 - 14 | - | - |
| -12 | 3/4 - 14 | 1-1/16 - 12 | 1-1/16 - 12 | 13/16 - 12 | 3/4 - 14 | 3/4 - 14 |
| -14 | - | 1-3/16 - 12 | 1-3/16 - 12 | 15/16 - 12 | - | - |
| -16 | 1 - 11-1/2 | 1-5/16 - 12 | 1-5/16 - 12 | 17/16 - 12 | 1 - 11 | 1 - 11 |
| -20 | 1-1/4 - 11-1/2 | 1-5/8 - 12 | 1-5/8 - 12 | 1 11/16 - 12 | 1-1/4 - 11 | 1-1/4 - 11 |
| -24 | 1-1/2 - 11-1/2 | 1-7/8 - 12 | 1-7/8 - 12 | 2 - 12 | 1-1/2 - 11 | 1-1/2 - 11 |
| -32 | 2 - 11-1/2 | 2-1/2 - 12 | 2-1/2 - 12 | 2 1/2 - 12 | 2 - 11 | 2 - 11 |

Thread Sizing Kit

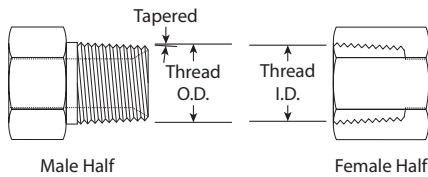
Allows the user to properly identify threads of all hydraulic types. This handy kit includes a fractional thread pitch gauge, a metric thread pitch gauge, inside & outside caliper (inches and millimeters), a seat angle gauge (24 degree/30 degree/37 degree/45 degree), 27-page fluid ports & connections identification guid. A carrying case is standard for easy and convenient storage.



| Stock Number | Ship Wt. |
|--------------|----------|
| 1706410 | 1 |

NPTF (National Pipe Thread Fuel)

Commonly referred to as "pipe" threads, this connection is still widely used in fluid power systems, even though it is not recommended by the National Fluid Power Association (NFPA) for use in hydraulic applications. The thread is tapered and the seal takes place by deformation of the threads. NPTF threads differ from NPT threads in that NPT threads are designed for mechanical or low-pressure air or fluid applications. Visually, the two look identical. However, the thread forms are different. Mating a NPT threads with NPTF threads will most likely produce a connection what will leak. All of our hydraulic fittings and adapters are NPTF threads. A thread sealant is recommended for all NPTF fittings and adapters.

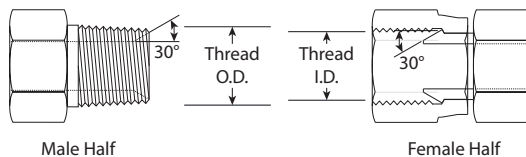


NPTF Thread Measuring Tip: Measure the thread diameter and subtract one quarter inch to find the nominal thread size.

| Inch Size | Dash Size | Nominal Thread Size | Male Thread O.D. | Female Thread I.D. |
|-----------|-----------|---------------------|------------------|--------------------|
| 1/8 | 02 | 1/8 - 27 | 12/32 (0.41) | 3/8 (0.38) |
| 1/4 | 04 | 1/4 - 18 | 17/32 (0.54) | 1/2 (0.49) |
| 3/8 | 06 | 3/8 - 18 | 11/16 (0.68) | 5/8 (0.63) |
| 1/2 | 08 | 1/2 - 14 | 27/32 (0.84) | 25/32 (0.77) |
| 3/4 | 12 | 3/4 - 14 | 1 1/16 (1.05) | 1 (0.98) |
| 1 | 16 | 1 - 11 1/2 | 1 5/16 (1.32) | 1 1/4 (1.24) |
| 1 1/4 | 20 | 1 1/4 - 11 1/2 | 1 21/32 (1.66) | 1 19/32 (1.58) |
| 1 1/2 | 24 | 1 1/2 - 11 1/2 | 1 29/32 (1.90) | 1 13/16 (1.82) |
| 2 | 32 | 2 - 11 1/2 | 2 3/8 (2.38) | 2 5/16 (2.30) |

NPSM (National Pipe Thread Mechanical)

Commonly referred to as "female pipe swivels," this connection is still widely used in fluid power systems. The NPSM thread design differs from the NPTF pipe thread design which seals on the threads themselves. The NPSM female pipe swivel seals on a 30° seat (flare) and is visible down inside of the swivel nut. This swivel nut is permanently attached to the body and mates with a male pipe thread that has a 30° seat (chamfer) machined into the end. The threads bring both 30° seats (flare and chamfer) together creating a metal-to-metal mechanical seal. Please note that not all male NPTF threads have a chamfer machined into the end. The SAE standard does not require the chamfer to be machined. Sometimes a male NPTF thread adapter or fitting will have what looks like a small chamfer, but is in fact a small burr that does not meet the requirement for the metal-to-metal mechanical seal.



| Inch Size | Dash Size | Nominal Thread Size | Male Thread O.D. | Female Thread I.D. |
|-----------|-----------|---------------------|------------------|--------------------|
| 1/8 | 02 | 1/8 - 27 | 12/32 (0.41) | 3/8 (0.38) |
| 1/4 | 04 | 1/4 - 18 | 17/32 (0.54) | 1/2 (0.49) |
| 3/8 | 06 | 3/8 - 18 | 11/16 (0.68) | 5/8 (0.63) |
| 1/2 | 08 | 1/2 - 14 | 27/32 (0.84) | 25/32 (0.77) |
| 3/4 | 12 | 3/4 - 14 | 1 1/16 (1.05) | 1 (0.98) |
| 1 | 16 | 1 - 11 1/2 | 1 5/16 (1.32) | 1 1/4 (1.24) |
| 1 1/4 | 20 | 1 1/4 - 11 1/2 | 1 21/32 (1.66) | 1 19/32 (1.58) |
| 1 1/2 | 24 | 1 1/2 - 11 1/2 | 1 29/32 (1.90) | 1 13/16 (1.82) |
| 2 | 32 | 2 - 11 1/2 | 2 3/8 (2.38) | 2 5/16 (2.30) |

