



# Threaded Fitting Identification

How to identify NPT and JIC parts from the many types of threaded fittings out there

**NPT**, short for "National Pipe Taper", is a standard based off nominal inch pipe, used across the US for fluid, pneumatic, and electrical connections. It uses a **tapered thread** type, meaning that the threads are not straight along the length of the pipe but are instead slightly tapered by approximately 1.79° towards the center. This allows the threads to become tighter as you thread them together to the point of becoming a tight interference fit. These connections require the use of a pipe dope or PTFE tape to seal the joint and provide lubrication while tightening and loosening.



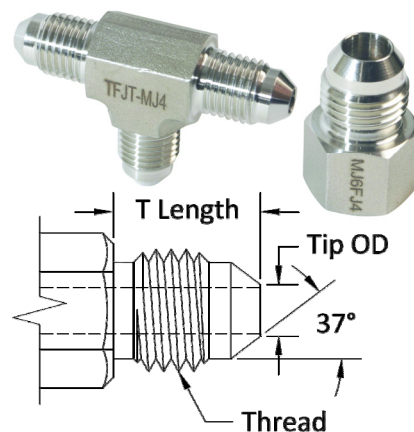
Size	Dash	Nominal	T Face OD	T Length	TPI	H Turns	W Turns
1/4"	-4	0.540"	.477"	0.401"	18	4	3
3/8"	-6	0.675"	.612"	0.408"	18	4.5	3
1/2"	-8	0.840"	.758"	0.534"	14	4.5	3
3/4"	-12	1.050"	.968"	0.546"	14	4.5	3
1	-16	1.315"	1.214"	0.682"	11.5	4.5	3.25
1-1/4"	-20	1.660"	1.557"	0.707"	11.5	4.5	3.25
1-1/2"	-24	1.900"	1.796"	0.724"	11.5	4.5	3.25
2	-32	2.375"	2.269"	0.756"	11.5	5	3
2-1/2"	n/a	2.875"	2.720"	1.136"	8	5.5	3
3	n/a	3.500"	3.341"	1.200"	8	6	3
3-1/2"	n/a	4.000"	3.838"	1.250"	8	6.5	3.5
4	n/a	4.500"	4.334"	1.300"	8	6.75	3.5

The chart to the left defines the **NPT sizes** and their measured diameters, as well as the diameter at the end of the tapered threads in the size range that we offer. Important to remember is that until pipe reaches 14"+, the outside diameter (OD) of the pipe will be larger than the labeled size. For example 1" pipe has an OD of 1.315".

- Size:** Labeled size of standard piping
- Dash:** Dash size (1/16" increments)
- Nominal:** Outside Diameter of pipe
- T Face OD:** Diameter of threaded end
- T Length:** Length of threaded section
- TPI:** Threads Per Inch
- H Turns:** Hand tight turns
- W Turns:** Wrench make up turns

**JIC**, short for "Joint Industry Council", is the modern standard for hydraulic high pressure fittings. Based on the SAE J514 and MIL-DTL-18866 standards, this fitting started as an AN (Army-Navy) standard. After being widely used throughout the military, AN fittings were adopted by manufacturers for consumer goods. The tolerances for civilian use were reduced for **the JIC standard**, and remain compatible with most AN fittings.

The tip **taper angle of 37°** is the main defining feature for identifying JIC fittings. The 37° taper angle is visually distinct for leading to a sharper tip, compared to the close cousin SAE which has a 45° angle. However, SAE uses the same thread specifications, so care must be made to check the taper angle before buying fittings. Another close fitting type is the Japanese standard JIS, which uses metric threads and a 30° angled tip. There are dozens of other types of similar fittings, but SAE and JIS are the two that are closest and easiest to confuse with JIC.



This chart has all **JIC sizes** near the range we offer to help identify the size you need.

- Size:** Labeled size of JIC fitting
- Dash:** Dash size (1/16" increments)
- Thread:** Thread specifications of fitting
- M Th OD:** Male thread outside diameter
- F Th ID:** Female thread inside diameter
- Tip OD:** Tip of taper outside diameter
- T Length:** Minimum length before nut

Size	Dash	Thread	M Th OD	F Th ID	Tip OD	T Length
1/8"	-2	5/16"-24	0.313"	0.281"	0.063"	0.450"
3/16"	-3	3/8"-24	0.375"	0.344"	0.125"	0.480"
1/4"	-4	7/16"-20	0.438"	0.406"	0.172"	0.550"
5/16"	-5	1/2"-20	0.500"	0.469"	0.234"	0.550"
3/8"	-6	9/16"-18	0.563"	0.531"	0.297"	0.560"
1/2"	-8	3/4"-16	0.750"	0.688"	0.391"	0.660"

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