

Introduction:

JIC Fitting is a range of hydraulic fittings which is made in accordance to the SAE J514 standards. The acronym JIC stands for Joint Industry Council. It is also known as the JIC 37 degrees flare fitting because it has a 37 degrees flare seating surface. These fittings are used on oil hydraulic systems in many fields (fuel delivery, fuel power application, shipbuilding, mobile hydraulic equipment, etc...). A JIC fitting system has three components that make a tubing assembly: fitting, flare nut, and sleeve (Figure 1).



Figure1:
JIC Components: Fitting, Flare Nut & Sleeve

Material:

Materials used to fabricate JIC fittings include carbon steel and stainless steel SS316L (Figure 2).

Sizes:

JIC body and flare nut are available in outer diameter ("OD) sizes between 1/8" to 1 2". Sleeve has two different reading measurements, metric size (mm) and inch outer diameter ("OD). Sleeve size is available from 3mm to 50mm and 1/8" to 2". Fitting sizes are designated by the corresponding outside diameter of the tubing for the various types of tube ends.



Figure 2: SS316 JIC Fitting

Working Pressure:

The standard working pressure of the fittings ranges from 1000 to 5000 psi for different sizes and connections. The minimum burst pressure is four times the working pressure. JIC fittings must be able to withstand twice the working pressure for a period of 1 minute without failure or leakage.

Please take note that the pressure rating of a same fitting may vary when it is connected to different equipments.. For example, if a fitting with a low working pressure is connected to a pipe, it will result in an overall even lower working pressure. In all cases, always consider the lowest pressure as the maximum working pressure of the system.

How does a JIC fitting works:

For tube connections (Figure 3), the assembly procedure starts from the preparation of the tube. First, the nut and sleeve are inserted onto the end of a tube. With the use of a flaring tool, form the end of the tube to 37 degrees. Next, tighten the nut by using a spanner until the nut is tight and the sleeve grips onto the tube. If the fittings are bench assembled, the gripping action can be determined by rotating the tube by hand as the nut is drawn down. When the tube can no longer be rotated by hand, the sleeve has gripped onto the tube. When this happens,, tighten the nut by turning it one full turn. This may vary slightly with different tubing materials, but for general practice, it is a good rule to follow.

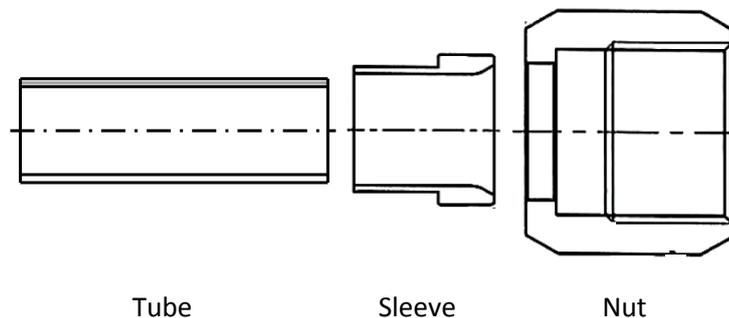


Figure 3: Connection tube and JIC fitting

Configurations of JIC Fitting:

Commonly used connection types consist of: JIC/BSPP Male Connector, JIC/ NPT Male connector, JIC Union, JIC/NPT Swivel Male Connector , JIC/BSPP Swivel Male Connector.

HS Corporation:

HS Corporation is a Korean manufacturer specializing in JIC Fitting. Established in 1980, HS Corporation has more than 30 years of specialized experience in manufacturing fittings. HS Corporation JIC Fittings are distributed by Chuan Kok Hardware & Machinery Pte Ltd to major shipyards, engineering as well as marine and offshore companies in Singapore.



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