



# HYDRAULIC SAE FLANGES

## Literature





**Figure 1 SAE Flanges**

### **Introduction:**

SAE flange is a hydraulic flange that is made in accordance with SAE J518/ ISO 6162 standards. SAE flanges are normally supplied for oil hydraulic systems in extensive range such as shipbuilding, oil and gas, mobile hydraulic systems and where there is a passage of oil.

### **Material:**

SAE flanges are fabricated by two kinds of materials which are steel (ST52.3) and stainless steel (AISI SS316L). SAE flanges are made from normalized forgings from raw material.

### **Size Range & Pressure Rating:**

SAE flanges are available in nominal sizes ranging from 3/8" (DN10) to 5" (DN125). The pressure rating of SAE flange can be defined to two series: Code 61 Series and Code 62 Series.

The working pressure for Code 61 series ranges from 34 Bar to 345 Bar, depending on the sizes. While for Code 62 series, the working pressure is 414 Bar. However, the pressure rating of SAE flanges and connected equipment combination might vary from each other.



**Figure 2 Flat Side SAE Flanges**

### **Connections Type & Configurations:**

For the connections of SAE flanges, it is usually available in a few types: threaded (NPT / BSPP), welding (Socket Weld / Butt Weld), blind flanges, and split flanges.



**Figure 3 Oring Side SAE Flanges**

SAE flanges are available in two types: Flat Side and Oring Side. Flat side of SAE flange are SAE flange that come with bolt thread (UNC / Metric) and oring side of SAE flange are SAE flange that contains a groove seat to place a rubber o-ring. Flanges with Oring are has an advantage of prevent leakage as all metal-to-metal flanges are more prone to leakage.

The configurations of SAE flanges are flat side, Oring side or complete set. A complete set of SAE flanges are a combination of flat side and Oring side where it forms a seal between the flat surface and oring held in a recessed circular groove in the other half. By tightening the bolts, it draws the flat side and Oring side together and compresses the Oring.

SAE flange complete set is tightened by using socket head cap screws and spring washers according to the recommended torque value. According to the SAE J518 standard, the lengths of cap screws are usually shorter than the overall length of the SAE flange complete set.

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