

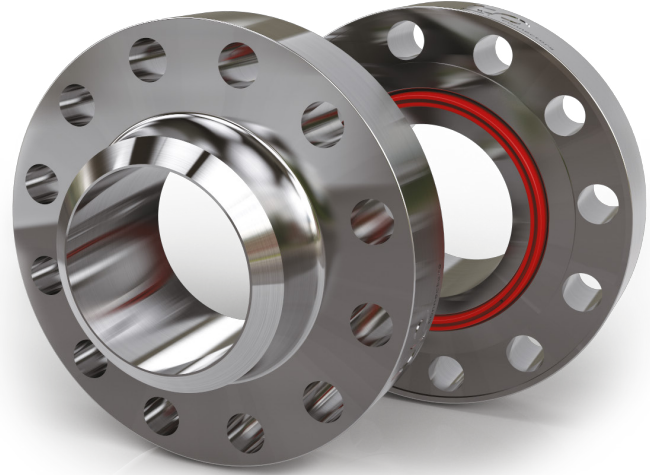
**TPC Compact Flange**

# TPC Compact Flange

## Extreme reliability in a compact design

TP-Products has been producing NORSOK type compact flanges since 1989. Our engineers have long experience in the design and development of this product, and were responsible for writing the product standard in NORSOK L-005. We also participated in the ISO 27509 compact flange standardisation work..

The TPC Compact Flange (TPC CF) meets the functional and design requirements of Chapter 4 of NORSOK L-005. Compact Flanges can be delivered in pressure classes CL150 (PN20) to CL2500 (PN420) and in nominal pipe sizes ½" to 48". The Compact Flange is also available outside the product standard, both in terms of size and design pressure as explained under special CF designs.



## Major Benefits



weight

### SIZE AND WEIGHT ADVANTAGE

The TPC Compact flange offers a much smaller, lighter, and tighter design compared to ASME or API flanges.



### 100% MAINTENANCE FREE

The TPC Compact Flange is a static connection which means that there is no relative movement between the two flange halves when in service. Therefore a leak cannot develop over time + the static behaviour also makes the flange 100% maintenance free.



### EASY, FAST & COST EFFECTIVE

The high reliability of TPC Compact Flanges allows for the use of mechanical connections in restricted areas. The use of flanged connections instead of welds, for instance towards equipment, makes maintenance and replacement a lot easier, faster and cheaper.



### HIGH QUALITY & STRENGTH

Compact flanges use self-energised and pressure assisted seals; the performance of such seal rings is dependent on using materials of high quality and strength.

**77%**  
weight saving

**33%**  
smaller OD

**58%**  
smaller length

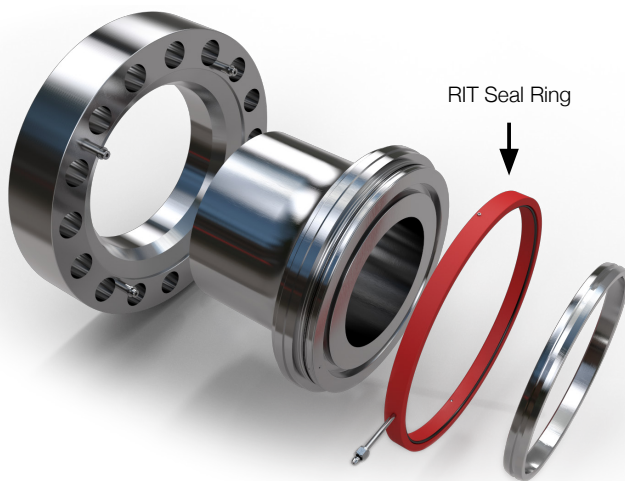
Comparison between 6" 2500# ASME Weld Neck and TPC Compact Flange (full set of flanges incl. bolting)



## Seal ring types

TP-Products produces high-quality metal seal rings for compact flanges. The company's seals are available in IX and HX types, suitable for use in standard process piping applications and subsea applications, as well as demanding environments such as extreme temperatures. These self-energized, pressure-assisted seals feature deformation control capabilities that depend on using high-quality materials with strict dimensional tolerances. Our machine shop has over 25 years of experience producing such parts according to customer specifications.

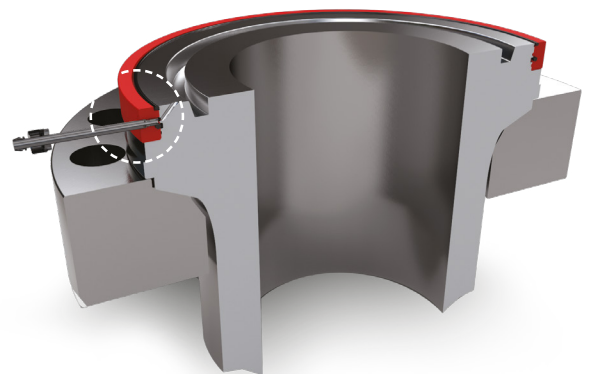
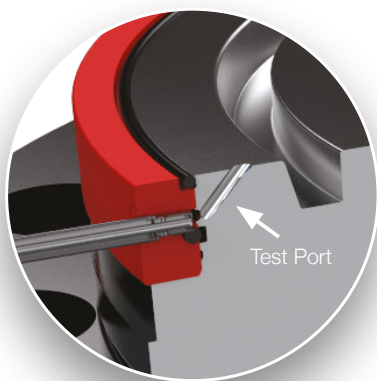
The seal rings are available with coatings selected to suit the functionality of sealing for compact flanges. For subsea use, we will recommend our silver coated seals which is a very robust solution giving an extremely good and everlasting sealing performance. For topside applications, we recommend using MoS<sub>2</sub> based dry film coatings.



## Swivel flanges

The TPC CF also features a swivel flange hub with a ring to ease bolt misalignment.

A different material on the hub and ring allows to decrease the overall cost. TP-Products has also developed a reverse integrity seal ring for swivel flanges. This allows verification of proper assembly and sealing without pressurizing the complete piping system.



Scan to learn more about the  
TP-Compact Flange



## Third party Equipment manufacturers

For manufacturers of equipment with a compact flange or clamp connector end connection, TP-Products will supply machining drawings as well as calculations including non-linear Finite Element Analysis to specified codes and standards.



## Markets & Applications

TPC Compact Flanges can be used in any application where other types of pipe connector traditionally have been used. In addition, TPC Compact Flanges can be used in areas where welded connections are normally required. The high reliability of TPC Compact Flanges allows for the use of mechanical connections in restricted areas. The use of flanged connections instead of welds, for instance towards equipment, makes equipment maintenance and replacement a lot easier, faster and cheaper.

Due to the static behaviour of «NORSOK type» compact flanges and the high reliability, the TPC Compact Flange can be used in critical dynamic applications such as in dynamic offshore riser systems. The static condition also give very good fatigue resistance which will always make the flange better than the adjoining weld. TPC Compact Flanges are superior to other connectors also in extreme low temperatures and in extreme high temperatures.

Due to the flange's compact design with low weight and small diameter, module and skid designers can design more compact modules/skids which is beneficial in many ways. One important example is offshore lifting of modules either to a platform or to a subsea location, where weight and space is crucial to keep installation cost down.

