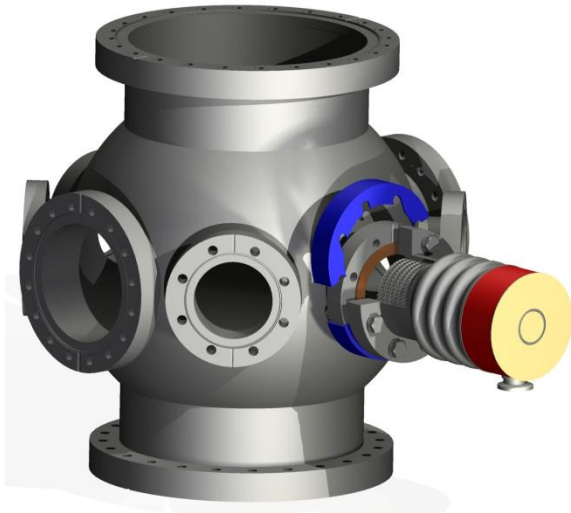




## A Positioning Device for CF Flange Gaskets

### Technology Description



**Figure 1: A better handling of a delicate sealing**  
The new positioning device (blue) makes mounting CF flanges an easy task. It secures the thin copper gasket (brown) in the right place while the technician has the time he needs to tighten the bolts.

CF flanges are well-established components for building ultra-high-vacuum environments. There are several geometries of the tubes that follow the ISO/TS 3669-2 standard, so that the customer can combine products from different companies.

Nevertheless, a rather tricky task remains: For sealing the contact points between two different CF flanges, the technician has to mount a thin gasket between the two outer ends of the flanges before tightening the bolts. The gasket is typically made of high purity copper. When tightening the bolts, the extruded metal leads to a leak-tight seal (see Figure 1). Mounting and positioning of the copper seal still remains manual work – the technician has to fix the ring in the right position until the bolts hold the two flanges in place. Even if the technician is well trained, the gasket is likely to move and drop out when handling heavy components (pumps, evaporation devices, sections of the vacuum system, etc.). This is a waste of time and money – the damaged copper gasket can't be reused.

Our new positioning device eliminates the need for this tedious and rather complicated positioning of the sealing ring by hand.

### Innovation

**Up to now:** Tricky handling of the copper gasket when sealing the ends of two different CF flanges

**Improvement:** Our new positioning device is handy, intuitive and reusable.

### Market Potential

Prices for copper gaskets can be up to 30€ (CF250 standard, not annealed, not silver plated). Technicians and engineers will appreciate the comfort that the positioning device delivers.

### Proof of Concept

A prototype has been built and is ready for demonstration. Engineering drawing available.

Please turn to the next page for details.

### IP Status/Requested Cooperation

**Patent filed – Priority date 2014-09-19**

We are looking for a company that licenses our IP and implements it in their production lines. Non-exclusive license also negotiable.

# A NOVEL WAY OF MOUNTING CF FLANGES

## How it works: The new Positioning Device

Our new positioning device makes mounting of CF flanges an easy task as shown by the four steps on the right side. The two-part device (shown in blue color) secures the copper seal in the right position (see Figure 2), so that the technician has no further need to take care of the seal while tightening the bolts between the two CF flanges (see Figure 3). Later on, the positioning device can be removed and reused (Figure 4). The CF flange connections remain in their due positions, the technician can finish his task by firmly tightening the bolts (Figure 5).

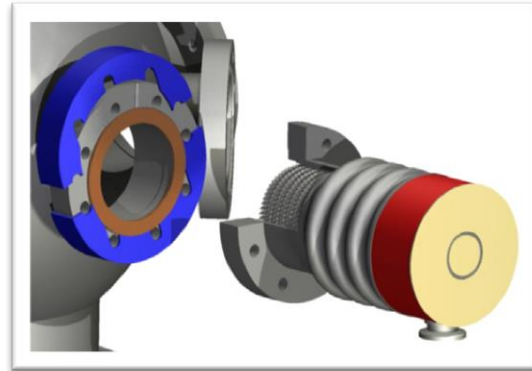


Figure 2: Fixing of seal via the new device

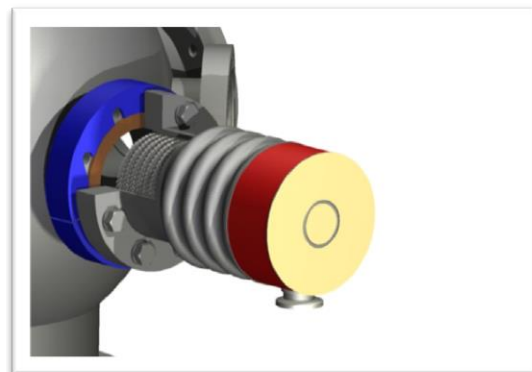


Figure 3: Loosely tightening the bolts

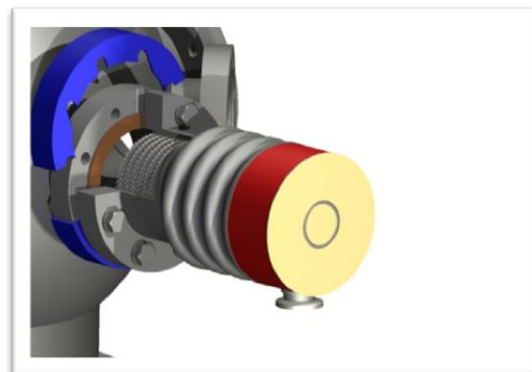


Figure 4: Removal of the positioning device

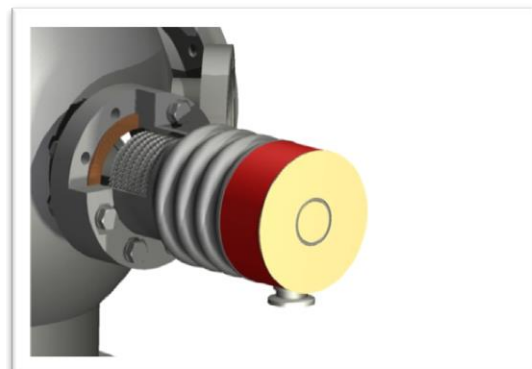


Figure 5: Firmly tightening all the bolts



### Figure 6: No more loss of copper gaskets

So far, the technician had to fix the sealing copper ring manually in the right position while positioning and tightening the bolts of the CF flanges. Very often, even a skilled technician lost the copper ring during this laborious task.