



## **The Pricing of Factory Pre-Assembled Isometric Spools**

In order to be responsive, we can often provide unit pricing for the various factory welds. It is necessary, however, to have the project drawings, in order to make sure that all costs are included when quoting factory pre-fabricated isometric spools.

We would like to take a minute to discuss what is involved in the manufacturing of factory pre-assembled isometric spools. There is more than just providing a cost for making a shop factory adhesive weld, or a shop factory butt and strap weld.

By way of example: If you are simply shaving or sanding a piece of pipe on one end, and then attaching a flange, that is one set of manhours. If you take that same length of pipe, and now have to prepare both ends, and put flanges on both ends, the number of hours is more than just twice the number of hours per one flange. The second flange has to be aligned, both in orientation of bolt holes, and with a parallel face to the first flange.

If you now add elbows, tees, and reducers, between those flanges the total manhours to make that isometric spool become more than just the mathematical sum of each individual joint. There are also jiggling, spooling, and layout hours required. The alignment and orientation can become quite complex. Alignment is difficult, especially if there are reducers involved - with a different number of bolt holes for each flange.

Also, in developing isometric pricing for factory preassembling spools you have to take into account the costs for: Preparation of spool drawings, pipe cutting to length, layout and jiggling, and increased in-plant handling costs. In addition, for most of the factory preassembled spools that we build, the customer also wants us to do an air test, or hydrotest, before shipping.

Finally, before shipping, there are extra hours that have to be added for shipping prep for factory preassembled isometric spools. Our standard unit costs include boxing or palletizing fittings, and loading straight lengths of pipe on trucks. However, when you start getting in to some of the complex isometric shapes; special pipe shipping supports are typically required, and many more manhours are often needed to load and block all of the spools on the truck.

The above is somewhat of a "long winded" way of saying that it is impossible to quote a fixed price on factory preassembled spools, without first seeing the detailed project drawings, and knowing just how many manhours are required for each of the above described productions steps.