

Spherical Union Advantages

The Problem:

Irregularities in parallelism of upper & lower vessel nozzles can cause the vessel unions to be out of square.

The two point attachment of a typical sight glass requires simultaneous squareness when making up the unions - otherwise leak at the union or excessive strain of the connector and the "connecting nipples" will result

Spherical Unions... useful for

End Connected Gages - **NO** (except with tee's)

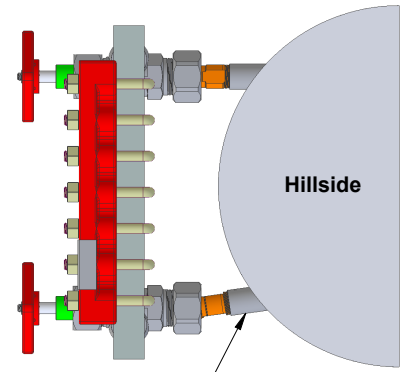
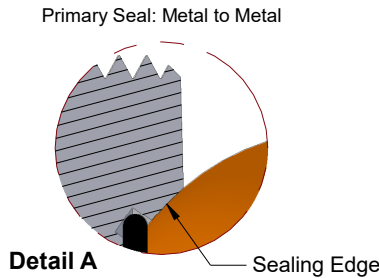
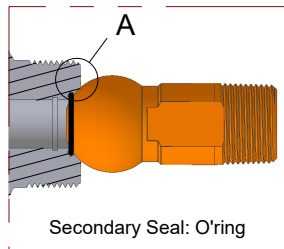
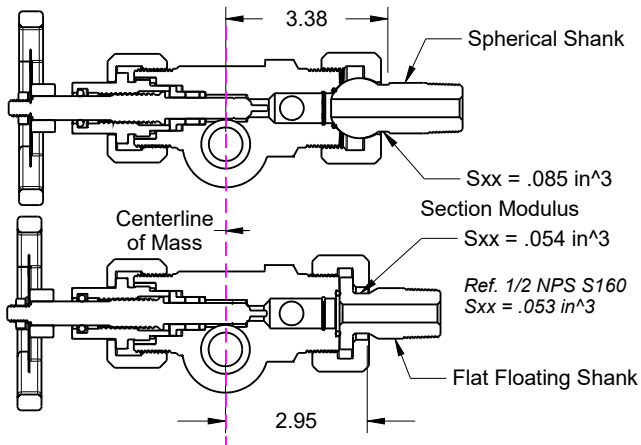
Reason: ball and socket joint does not allow for variation in vessel C-C

Side or Back Connected Gages - **YES**

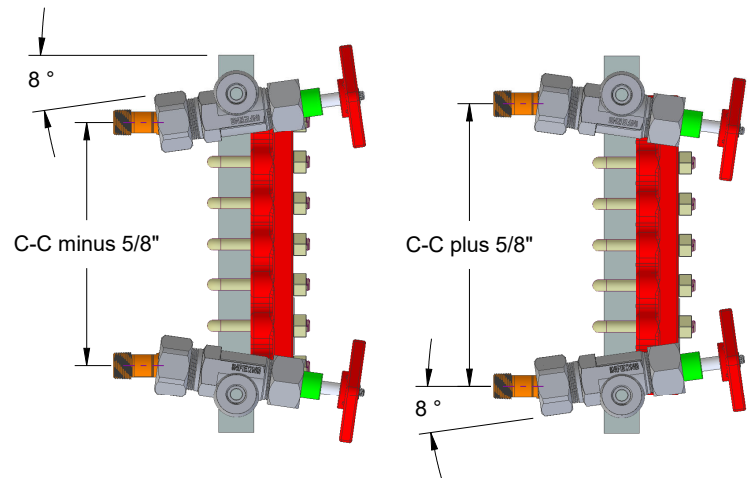
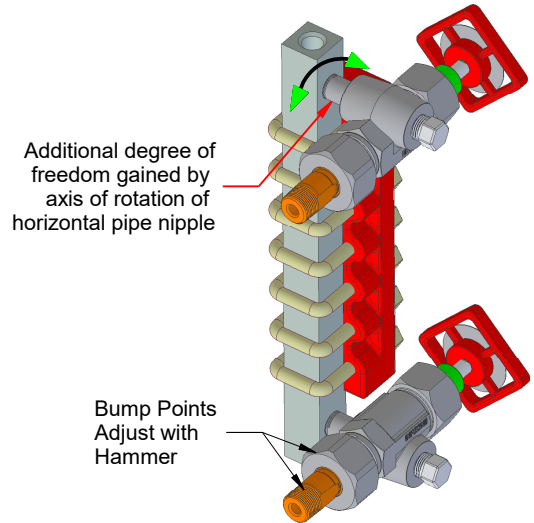
Recommended for:

- * Angular misalignment
Caused by non-jigset construction, welding distortion, etc
- * **Long and Heavy LG's** and/or Vibration service

Increased bending strength of Spherical Union vessel connector compared to Flat Union vessel connector, 1.57x greater section modulus with standard ± 8 degree rotation design or 1.98x with 4 degree rotation design



Angular misalignment often seen on horizontal vessels and field constructed piping. Corrected with use of spherical unions - as shown



Reference Documents

A202103 Long & Heavy Level Gages

Spherical Union Advantages:

- * Minimize piping strain
- * Minimize leak at union
- * Quicker assembly in the field



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