



SPECIAL JOINTS

HAMMER UNIONS

Material:

➡ Hammer Unions manufactured from steel forgings using materials appropriate to specific pressure ratings.

End Connections:

➡ Available in a choice of end connections. API line pipe threads are standard. Butt weld ends can be provided. Customer to specify schedule of pipe while ordering.

Sour Service:

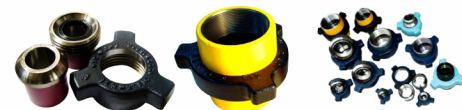
➡ Sour service compliance being kept and all H2S service parts can also conform to the latest NACE specifications.

Low Temperature Service:

➡ Unions can be supplied for low temperature applications with suitable impact value testing.

Traceability:

➡ Unions are supplied with full traceability documentation for each component.



SWIVEL JOINTS

Long radius & Short radius Swivel Joints

Available in sizes 3/4" through 3" up to 15,000 PSI non-stock cold working pressure, we can offer the following features...

- Minimum flow restriction
- Heavy duty hex head style ball loading plug
- Grease retainer ring (ensures clean ball race)
- Standard packing units (Operating temperature to 2250 F)



- » High temperature packing units (Operating temperature to 4500 F)
- » Superior hardened ball races ensure uniform surface hardness and depth for longer life under severe thrust and radial loading.
- » Standard Swivel Joints are provided with API line pipe threads.
- » Other end connections are available on request.
- » Available for standard and sour service.
- » All sizes are available in 8 styles, for 360 rotation in 1, 2 or 3 planes.



INSULATION JOINTS

Monolithic isolation joints are used in pipelines to electrically isolate the pipe for corrosion protection by means of cathodic protection. Monolithic isolation joints are fully designed, manufactured and tested in-house in compliance with customer requirements and international standards.

In general each monolithic isolation joint will be a unique, fit for purpose, produced piece of high quality equipment.

Quality Assurance:

➔ We ensure that all our products are sourced and supplied from ISO 9001 Certified facilities which ensures a close control over all the production and manufacturing processes.

Design and Calculations:

➔ Monolithic Insulating Joints are designed in accordance with ASME VIII Div. I and applicable Codes (ASME B31.3, 31.4, 31.8), or according to Client's specific requirements.

➔ **SIZE RANGE** : From 1/2" to 56"

➔ **PRESSURE RATING** : From PN 25 to PN 100
(Other pressure ratings available upon request.)

➔ **TYPE**: Butt Weld, BW / Fillet Weld, FW



➔ MATERIALS

➔ PIPE SECTIONS

- Carton Steel pipes in accordance with API, ASTM, DIN and other standards
- Rolled plates longitudinally arc welded

➔ BODY

- Forged materials or seamless ring made of plate material, depending upon requirements

➔ SEALING

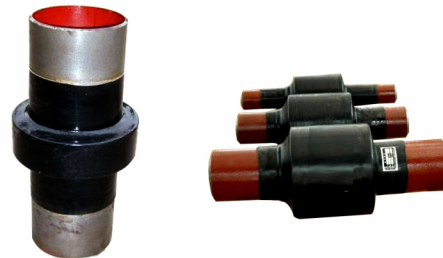
- Seals of aging resistant material form nitrile, fluoride and silicone elastomers in accordance with ASTM D-2000

➔ INSULATING MATERIALS

- Epoxy-glass laminates or epoxy-glass prefabrication in accordance with ASTM D-709

➔ COATINGS

- Internal surfaces: Epoxy resins or according to Client's specific requirements
- External surfaces: Epoxy primers, Epoxy paints or according to Client's specific requirements



Welding And Non Destructive Testing:

- All welding processes are in accordance with ASME IX and are certified by independent and international Authorities.
- Non-destructive tests using dye penetrants, magnetoscopic, x-rays and ultrasonic inspections in accordance with ASME VIII, ASME V, ASME B16.34, ASME SA-388 and applicable codes.

Testing:

According to the agreed requirements, typically:

- Hydrostatic pressure and Bending test
- Torsional test
- Electrical resistant test in dry air
- Hydrostatic Fatigue test
- Dielectric strength test
- Combined Hydro-Thermo-Bending test
- Dimensional checks



EXPANSION JOINTS

Fabric Expansion Joints:

- » Series of standard types of Fabric Expansion Joints along with numerous special designs.
- » Custom made Fabric Expansion Joints are also available in all sizes and shapes for any application.
- » Available from single bellows for ventilating systems to highly advanced multilayer expansion joints for gas turbine exhaust.
- » The temperature capability ranges from - 50 deg. C to 1000 deg. C and the pressure ranges from - 50 kPa to 50 kPa.

Elastomer Expansion Joints:

- » Suitable for continuous temperatures up to 200 C.
- » The Elastomere Expansion Joints are available in numerous shapes and sizes, but four elastomer products represent the standard range.
 - » PTFE polytetrafluoroethylene
 - » EPDM ethylene propylene diene terpolymer
 - » FKM fluorocarbon elastomer (Viton B)
 - » SI silicone rubber

Metal Expansion Joints:

- » This covers any application where Fabric and Elastomere Expansion Joints are not suitable, mainly due to pressure conditions.
- » Designed according to either EN14917, EN13445 or EJMA.
- » Standard designs are Axial, Lateral, Angular and Universal Expansion Joints, in materials of stainless steel or Titanium.
- » Manufactured as single or multiple bellows and can be combined into double expansion joints.

