

Bi-Directional Piggable Wye Fitting



The Bi-Directional Piggable Wye is a forged or cast fitting that joins pipelines and permits bi-directional pigging of subsea and onshore pipelines. For subsea applications, the fitting may be installed in shallow and deep waters. The fitting utilizes the same 30° inclusive angle between the inlet bores as a standard piggable wye fitting. A 30° angle is an industry accepted intersection for reliable passage of most common pipeline pigs.

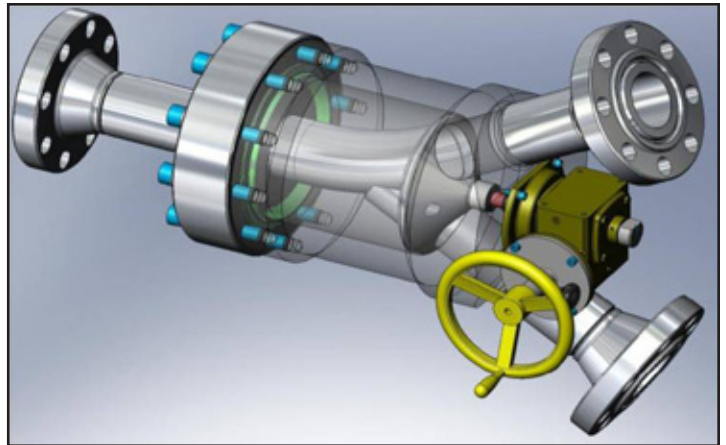
The wye fitting provides an easy and reliable solution to pigging of pipeline systems through one designated pipeline into either of the lateral lines connected to the inlets of the fitting. The inlets of the fitting can be designed in various configurations. The standard weld end configuration for new construction is commonly used. Optional fabrication services to weld customer provided pipe pups to the weld ends of the fitting are available on request. The fitting is available in two basic designs, Symmetrical and Asymmetrical.

The wye fitting can be custom designed for any type of actuator per customer request. On actuation, the internal diverter sleeve in the main line rotates the sleeve to isolate the lateral line, allowing bi-directional pigging from the main line to the open lateral line. The design allows for a normal pipeline operation when the sleeves are in open position. For manually operated wyes, a gear box with a hand wheel is used to rotate the diverter sleeve 180° into closed position. For subsea applications beyond diver depths, the actuator is designed to be hydraulically operated by a Remotely Operated Vehicle (ROV).

Bi-Directional Piggable Wye Fitting Specifications

Design Parameters:

- Nominal Pipe Size (NPS): any API Specification 5L pipe, wall thickness and grade
- Service: Standard (i.e. crude oil, natural gas, hydrocarbons, water or chemical injection, etc.) & Sour (i.e. Hydrogen Sulfide, Carbon Dioxide, etc.)
- Design Pressure Rating: up to ANSI Class 2500 and API Pressure Ratings
- Hydrostatic Test Pressure (min): 1.5 times Design Pressure Rating rounded up to nearest 25 psig
- Hydrostatic Test Duration (min): 1 hr
- Design Temperature Range: 25°F (-4°C) to 250°F (121°C)
- Inlet/Outlet Ends: Butt-Welds (BW), Flanged (FLG), Grayloc® Hubs (GL)
- Actuation: Manual, Hydraulic, Electric (Input Power and Service Class Required), visual position indication is standard, remote position feedback is optional



Material Specifications:

- Body: ASTM A105 or ASTM A694 forging (size and pipeline grade dependent)
- Diverter: ASTM A216 WCC
- Bearings: Glass Filled PTFE
- Shaft: ASTM A249
- Seals: High Pressure Chevron Elastomeric Packing
- External Coating: Carboline 890 Epoxy Paint System, Safety Yellow Color

NDT Requirements:

- Body: 100% UT
- Welding: 100% Examination: (RT, UT, MT)

Applicable Design Codes (latest editions):

- OIE ISO 9001:2000 Quality Assurance - Quality Control Procedures & PCRS Operating Procedures
- ASME Boiler Pressure Vessel Code, Section VIII, Division 1 and 2
- ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
- ASME B31.8, Gas Transmission and Distribution Systems
- ASME Boiler and Pressure Vessel Code, Section IX Welding and Brazing
- ASME Boiler Pressure Vessel Code, Section V Nondestructive Examination
- ASME B16.5, Pipe Flanges and Flanged Fittings
- API SPEC 5L, Specification for Line Pipe
- MSS SP-44, Steel Pipeline Flanges
- NACE MR0175, Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment

Certifications:

- ISO 9001:2008 - World Certification Services Ltd. - Accredited by UKAS Quality Management
- EN 10204 Section 3.1B (DIN 50049), Inspection Documents for the Delivery of Metallic Products

