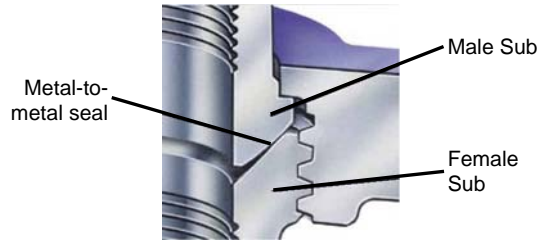


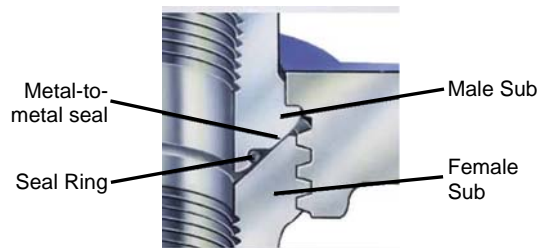


Proven Seal Designs



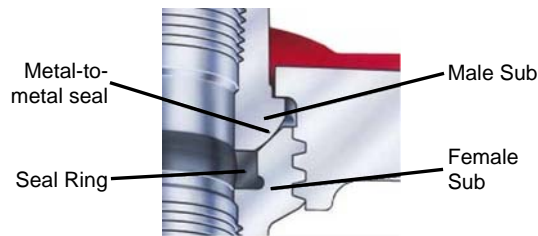
Low-Pressure Services (1,000 to 2,000 psi)

BEST wing unions for low-pressure services feature a primary metal-to-metal seal. The spherical surface of the male sub and the conical surface of the female sub provide a large, ball-and-cone sealing surface. This metal-to-metal seal remains leak-proof even when one surface is slightly pitted or misaligned.



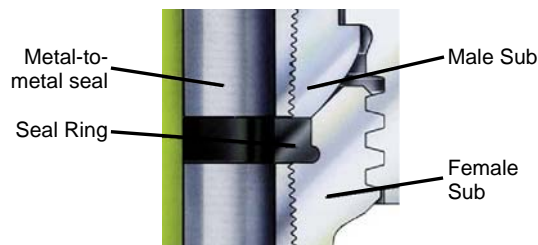
Medium-Pressure Services (2,000 to 4,000 psi)

Many BEST wing union designs supplement the metal-to-metal seal with a resilient O-ring in the male sub. The replaceable O-ring extends union life and protects the metal-to-metal seal against corrosion.



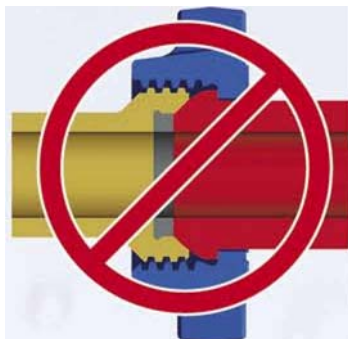
High-Pressure Services (6,000 to 20,000 psi)

BEST wing unions for high-pressure services feature a replaceable, lip-type seal ring in the female sub. This primary seal protects the secondary metal-to-metal seal from abrasion and corrosion while minimizing flow turbulence.



NPS (Non-Pressure Seal) Option Figures 602, 1002, and 1502

The BEST non-pressure seal option is especially designed for abrasive, high-pressure wing union services where welded connections are undesirable. This design provides strong, permanent end connections without butt-welding. The union ends are shop assembled to pipe or tubing. An epoxy thread compound is used to secure the connection.



WARNING

Interchangeable parts

BEST wing union parts of the same figure number, size, and pressure rating are interchangeable, making it easy to match male and female subs that are frequently made-up and broken-out. For positive identification in the field, all BEST wing union nuts and subs include the BEST name, figure number, size, and pressure rating. It is vital that the user positively identify union connections and components to avoid mismatch conditions and potential union failure. See inside back cover for details.

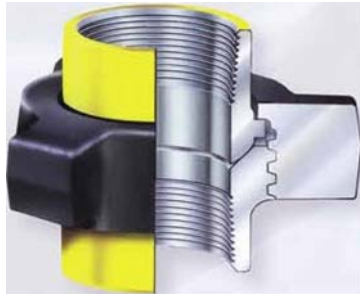


Figure 100

1,000 psi cold working pressure

Recommended service

Manifold and line connections

Features

- Pressure-tight make-up with hammer
- Economical low-pressure union



Figure 200

2,000 psi cold working pressure

Recommended service

General service manifolds and lines

Features

- Economical, general-purpose union
- 1" to 10" sizes
- Available in socket-weld



Figure 206

2,000 psi cold working pressure

Recommended service

Manifold line connections, suction service, and corrosion service

Features

- O-ring in male sub improves sealing and protects metal-to-metal seal against corrosion
- Replaceable O-ring extends union service life
- 1" to 10" sizes
- Available in socket-weld or butt-weld



Figure 207

2,000 psi cold working pressure

Recommended service

Seals manifold connections and protects union threads

Features

- Parts interchangeable with Figures 200 and 206
- O-ring on blanking cap ensures a leak-free seal
- Cap can be tapped for pressure gauge
- Available in butt-weld



Figure 211

2,000 psi cold working pressure

Recommended service

Production systems with electrolytic corrosion problems

Features

- Laminated insulating rings provide 35 million ohms resistance across the union
- O-ring in male sub provides a positive primary seal
- Seal ring in female sub delivers a positive secondary seal



Figure 400

4,000 psi cold working pressure through 4" sizes; 2,500 psi cold working pressure, 5"-12" sizes

Recommended service

Manifold line connections, pump suction, and mud services

Features

- 2-1/2" through 12" sizes have O-rings for primary seal
- Butt-weld available
- Available for sour gas service

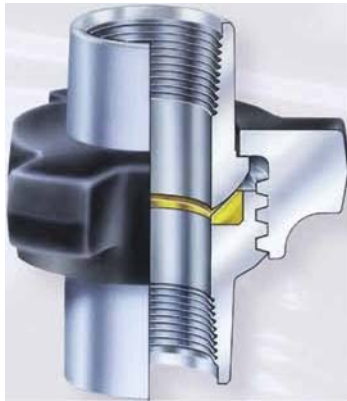


Figure 600
 6,000 psi cold working pressure

Recommended service
 Steam service, boiler connections, and manifold line connections for production, drilling, and well servicing

- Features**
- Bronze seat provides primary seal; will not rust in water services



Figure 602
 6,000 psi cold working pressure

Recommended service
 Manifold line connections and mud service

- Features**
- Replaceable, lip-type seal provides primary seal, protects secondary metal-to-metal seal, and minimizes flow turbulence
 - Butt-weld available
 - Available for sour gas service at 6,000 psi cold working pressure

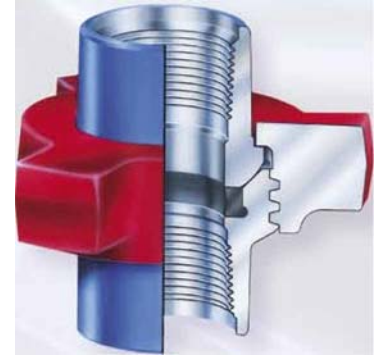


Figure 1002
 10,000 psi cold working pressure through 4" sizes; 7,500 psi cold working pressure, 5" & 6" sizes

Recommended service
 Cementing, fracturing, acidizing, testing, and choke-and-killilines

- Features**
- Replaceable, lip-type seal
 - 5" & 6" sizes have O-rings for primary seals
 - Available for sour gas service: 7,500 psi cold working pressure
 - Butt-weld available



Figure 1003 (Misaligning union)
 10,000 psi cold working pressure, 2" & 3" sizes; 7,500 psi cold working pressure, 4" & 5" sizes

Recommended service
 For high-pressure connections where lines cannot be aligned

- Features**
- Ball seat provides positive seal with up to 7-1/2' misalignment; 2-inch model up to 4'
 - Replaceable O-ring on male sub provides primary seal
 - Available with threaded or butt-weld ends

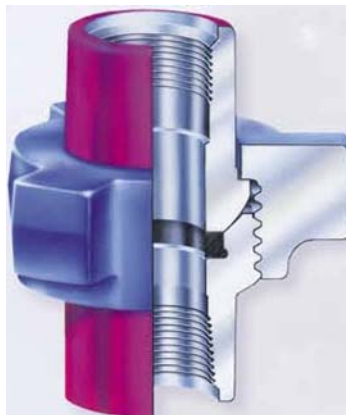


Figure 1502
 15,000 psi cold working pressure

Recommended service
 Cementing, fracturing, acidizing, testing, and choke-and-killilines

- Features**
- Replaceable, lip-type seal
 - Available for sour gas service: 10,000 psi cold working pressure; butt-weld or non-pressure seal configurations only
 - Butt-weld available

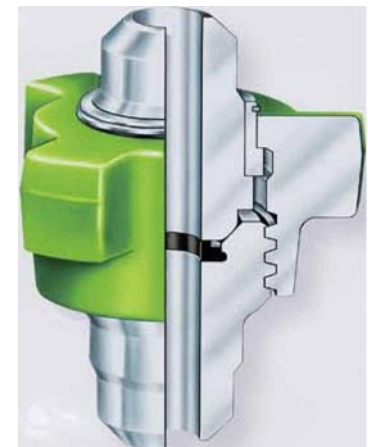


Figure 2002
 20,000 psi cold working pressure

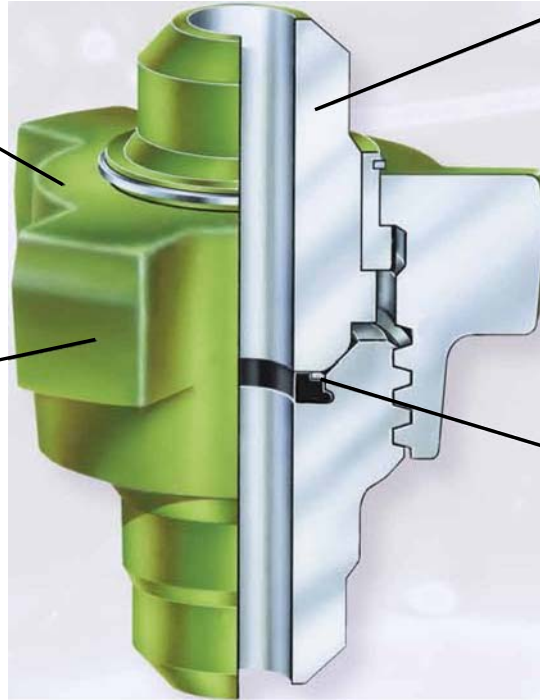
Recommended service
 Cementing, fracturing, acidizing, testing, and choke-and-killilines

- Features**
- Replaceable, lip-type seal
 - 2" and 3" line sizes
 - Butt-weld configurations only



Quick, positive identification
BEST unions for sour gas service are stamped "Sour Gas" and painted with an olive green zinc-chromate primer to ensure quick, positive identification.

Controlled hardness
BEST union subs and nuts are specially heat-treated and 100% tested for controlled hardness.



Meets industry standards

All BEST wing unions for sour gas service meet both the National Association of Corrosion Engineers Standard MR-01-75 and API Standard RP-14-E.

Positive sealing

Primary fluoroelastomer seal and metal-to-metal seal combine to deliver positive sealing throughout the stated pressure range.

Figure 2202

Sour Gas Service

BEST manufactures sour gas wing unions in accordance with the National Association of Corrosion Engineers (NACE) Standard MR-OI-75 and American Petroleum Institute (API) Standard RP-14-E. These outstanding, field-proven unions are specially heat treated for controlled hardness. For fast, sure identification, each BEST sour gas union is stamped "Sour Gas" or "NACE MR-OI-75" using low stress dot stamping and painted with an olive green zinc-chromate primer that is unique to sour gas equipment. FMC Fluid Control uses fluoroelastomer seals or O-rings in all sour gas unions, but does not warrant the performance of any elastomer for sour gas service.

Caution: It is possible to interchange sour gas parts with standard service products. Users must adopt safe practices for identification, installation, use, maintenance, and storage of sour gas equipment. (See inside back cover for additional Warnings and Cautions.)

BEST Wing Unions for Sour Gas Service

Figure 400

4,000 psi cold working pressure, 1" through 4" sizes; 2,500 psi cold working pressure, 5" through 12" sizes; butt-weld only above 4" sizes

Figure 602

6,000 psi cold working pressure, 1" through 4" sizes

Figure 1002

7,500 psi cold working pressure, 1 through 4-inch sizes;
5,000 psi cold working pressure, 5 and 6-inch sizes

Figure 1003

7,500 psi cold working pressure, 2" and 3" sizes;
5,000 psi cold working pressure, 4" and 5" sizes

Figure 1502

10,000 psi cold working pressure, 1" through 4" sizes;
butt-weld or non-pressure seal configurations only

Figure 2202

15,000 psi cold working pressure, 2", 2-1/2", and 3" sizes;
butt-weld only



Tank Unions

500 psi maximum line pressure, 6", 8", 10", and 12" sizes

Recommended service

Mud tanks, mud tank connecting lines, and pump suction flanges

Features

- Molded nitrile seal provides a compression seal
- Makes up with hammer
- Elongated cross-section of seal ring ensures greater sealing surface when in contact with the pipe
- Accepts up to 7° pipe misalignment
- 6", 8", and 10" sizes may be socket welded to pipe or butt welded to tubing; 12" sizes require butt-weld



Air-O-Unions

150 psi maximum line pressure, 4", 6", 8", 10", 13-3/8", and 16" sizes

Recommended service

Mud suction and return lines and low-pressure fluid lines

Features

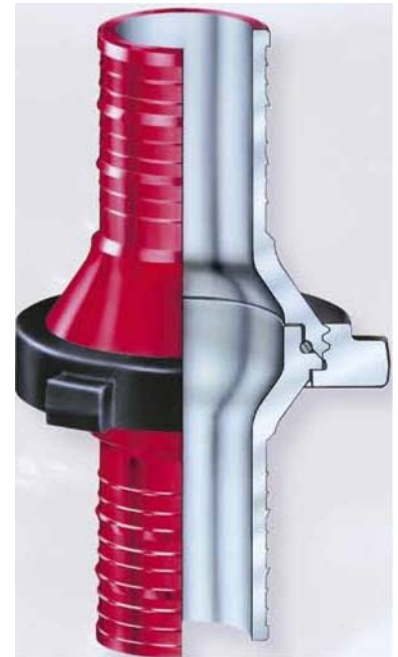
- Shot of rig air inflates tube to seal around pipe
- Fast, easy make-up without close alignment
- Allows pipe expansion or misalignment without breaking the seal
- No nuts, bolts, or wrenches required



Socket weld



Line pipe threads



Hose nipple

Suction-Hose Unions

500 psi maximum line pressure, 4", 5", and 6" sizes

Recommended service

Mud system suction lines

Features

- Replaceable O-ring seal
- Choice of end fittings
- Secondary metal-to-metal seal
- Socket welded, threaded, or hose nipple



Socket weld with female plug assembly