Weco® Original Wing Unions

*The widest selection of fast, high-pressure connections in the oilfield*

Standard-service wing unions
Sour-gas wing unions
Tank unions
Air-o-unions
Suction-hose unions

Catalog WU-11/96
<table>
<thead>
<tr>
<th>Figure Number</th>
<th>Assembly Color Key</th>
<th>Standard Service</th>
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<th>Nominal Pipe Size</th>
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Notes:
- NA - Not Available
- All end connections are line pipe threads unless otherwise noted.

1. Butt-weld available. Consult factory for wall thickness.
2. Nonpressure seal configurations available.
3. Power make-up must be used for line pipe threaded connections to achieve rated cold working pressure.
4. Line pipe threads are not offered for sour gas service in this figure number.
5. Line pipe threads are not recommended for sour gas service above 4-inches nominal pipe diameter.
6. Figure 400 available in 5 1/2- to 7-inch OD with casing threads.
7. Figure 1002 also available in 2 1/2-inch EUE: 5- and 6-inch sizes available with butt-weld ends only.
8. Figure 1502 in 4-inch size available for 3 1/2-inch ID tubing, butt-weld or nonpressure seal configuration only.
9. Figure 2002 in 3-inch size available for 3-inch ID tubing.
10. Figure 1003 in 5-inch size available with butt-weld ends only.
11. Available with butt weld ends only.
12. All unions for sour gas service are painted olive green, stamped "SOUR GAS" or NACE MR-01-75 and have specially modified material properties.
13. 5- and 6-inch sizes rated at 7,500 psi CWP and 11,250 psi test; 5-inch unions for sour gas service rated at 5,000 psi CWP and 7,500 psi test.
14. 4- and 5-inch sizes rated at 7,500 psi CWP and 11,250 psi test; 4- and 5-inch unions for sour gas service rated at 5,000 psi CWP and 7,500 psi test.

Sour gas service
FMC manufactures Weco sour gas wing unions in accordance with the National Association of Corrosion Engineers (NACE) Standard MR-01-75 and the American Petroleum Institute's (API) Standard RP-14E.
Widest selection in the oilfield
FMC offers the most complete line of standard service and sour gas wing unions with sizes ranging from 1- to 12-inches in diameter with working pressures up to 20,000 psi. Unions are available with line pipe or tubing threads, butt-weld, or nonpressure-thread seal end connections.

Positive sealing designs
Weco wing union seals vary according to pressure and application. All wing unions provide positive, pressure-tight sealing.

For low-pressure services (1,000 to 2,000 psi), the spherical surface of the male sub and the conical surface of the female sub form a metal-to-metal seal. This ball-and-cone seal remains leak-proof even when one surface is slightly pitted or misaligned.

Most medium-pressure models (2,000 to 4,000 psi) supplement the metal-to-metal seal with a resilient O-ring in the male sub. Weco high-pressure unions (6,000 to 20,000 psi) 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.

The Weco nonpressure-thread seal option is designed for abrasive, high-pressure applications where welded connections are undesirable. (Details on this design can be found on page 6.)

Fast make-up and break-out
Three-lug nuts and rugged self-locking ACME threads provide fast make-up and break-out regardless of position or space restrictions. No special tools are required.

Simple identification
Weco standard service wing unions are color coded for quick identification. Sour gas wing unions are stamped “sour gas” using low-stress dot stamping and painted with a green, zinc-chromate primer unique to sour gas equipment.

Interchangeable parts
All Weco parts of the same size, pressure rating, and figure number are interchangeable. This feature makes it easy to match male and female subs that are frequently made-up and broken-out. And, because FMC makes every Weco wing union to the same rigid standards, you get a quick and positive seal every time.

Rigid quality control
Weco unions are produced using the finest raw materials, tooling procedures, and heat-treating techniques available. Each union is carefully inspected to assure long, dependable service in the most extreme conditions.

Weco wing unions, like all pressure containing equipment, require special care and use. See the inside back cover for complete information.

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Weco Wing Unions

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Weco Original Wing Unions

Figure 100
1,000 psi (69 bar) 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 (138 bar) cold working pressure
Recommended service
General-service manifolds and lines

Features
- Economical, general-purpose union
- 1- to 4-inch sizes
- Butt-weld available

Figure 206
2,000 psi (138 bar) cold working pressure
Recommended service
Manifold and 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-inch sizes

See Specifications Table (page 8) for sizes, dimensions, weights, and materials.
**Weco Original Wing Unions**

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**Figure 207**  
Blanking union  
2,000 psi (138 bar) cold working pressure  
Recommended service  
To seal manifold connections and protect union threads  

**Features**  
- Parts are interchangeable with Figs. 200 and 206  
- O-ring on blanking cap ensures a leak-free seal  
- Raised lugs on cap allow for make-up with a hammer  
- Available in butt-weld  
- Cap can be tapped for pressure gauge if specified

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**Figure 211**  
Insulating union  
2,000 psi (138 bar) cold working pressure  
Recommended service  
For production systems with electrolytic corrosion problems  

**Features**  
- Laminated insulating rings eliminate all metal-to-metal contact; 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 provides a positive secondary seal  
- Insulating rings, O-ring, and seal ring can be replaced to extend union life

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**Figure 400**  
4,000 psi (276 bar) cold working pressure through 4-inch sizes; 2,500 psi (172 bar) cold working pressure, 5- through 12-inch sizes  
Recommended service  
Manifold and line connections, pump suction, and mud service  

**Features**  
- 2 1/2- through 12-inch sizes have O-rings for primary seal  
- Butt-weld available  
- Available for sour gas service: 2,500 psi (172 bar) cold working pressure, 5- through 12-inch sizes; 4,000 psi (276 bar) coldworking pressure, 1- through 4-inch sizes

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*See Specifications Table (pages 8 and 9) for sizes, dimensions, weights, and materials.*
Weco Original Wing Unions

Figure 600
6,000 psi (414 bar) cold working pressure

Recommended service
Steam service, boiler connections, manifold, and 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 (414 bar) cold working pressure

Recommended service
Manifold and line connections and mud service

Features
- Compact
- 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: 6,000 psi (414 bar) cold working pressure

Figure 1002
10,000 psi (690 bar) cold working pressure through 4-inch sizes; 7,500 psi (517 bar) cold working pressure, 5- and 6-inch sizes

Recommended service
Cementing, fracturing, acidizing, testing, and choke-and-kill lines

Features
- Replaceable, lip-type seal provides primary seal, protects secondary metal-to-metal, and minimizes flow turbulence
- Butt-weld available
- Available for sour gas service: 7,500 psi (517 bar) cold working pressure
- 5- and 6-inch sizes have O-rings for primary seals

See Specifications Table (pages 9 and 10) for sizes, dimensions, weights, and materials.
Weco Original Wing Unions

Figure 1003
Misaligning union
10,000 psi (690 bar) cold working pressure, 2- and 3-inch sizes; 7,500 psi (517 bar) cold working pressure, 4- and 5-inch sizes

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

Features
• Ball seat provides positive seal with up to 7½° misalignment; 2-inch model up to 4°
• Replacement O-ring on male sub provides primary seal, and protects metal-to-metal seal against abrasion and corrosion
• Available with threaded or butt-weld ends

Figure 1502
15,000 psi (1034 bar) cold working pressure

Recommended service
Cementing, fracturing, acidizing, testing, and choke-and-kill lines

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: 10,000 psi (690 bar) cold working pressure; butt-weld or nonpressure-thread seal configurations only

Figure 2002
20,000 psi (1380 bar) cold working pressure

Recommended service
Cementing, fracturing, acidizing, testing, and choke-and-kill lines

Features
• Replaceable, lip-type seal provides primary seal, protects secondary metal-to-metal seal, and minimizes flow turbulence
• 2- and 3-inch line sizes
• Butt-weld configurations only

See Specifications Table (page 11) for sizes, dimensions, weights, and materials.
Weco Original Wing Unions

Figure 2202
15,000 psi (1034 bar) cold working pressure

Recommended service
Especially designed for sour gas service

Features
- Meets National Association of Corrosion Engineers Standard MR-01-75 and American Petroleum Institute RP-14E
- Heat-treated components are 100% tested for hardness
- Fluoroelastomer seal rings
- Butt-weld only
- Stamped “sour gas” using low-stress dot stamping and painted with a green zinc-chromate primer to assure quick identification

See Specifications Table (page 11) for sizes, dimensions, weights, and materials.

Sour gas service
FMC manufactures Weco sour gas wing unions in accordance with the National Association of Corrosion Engineers (NACE) Standard MR-01-75 and American Petroleum Institute (API) Standard RP-14E. These outstanding, field proven unions are specially heat treated for controlled hardness. For fast, sure identification, each Weco sour gas union is stamped “sour gas” using low-stress dot stamping and painted with a green zinc-chromate primer that is unique to sour gas equipment. FMC uses fluoroelastomer seals or O-rings in all sour gas unions, but does not warrant the performance of any elastomer for sour gas service. (See Quick Reference Chart for model numbers, pressures, and sizes.)

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 “Warnings and Safety Instructions” on inside back cover.)

Nonpressure-thread seal connection
The Weco, nonpressure-thread seal option is especially designed for abrasive, high-pressure 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-locking compound is used to secure the connection. All threads are isolated from the line fluid by the seal ring, and the smooth bore assures minimum turbulence, decreases washouts, and reduces chemical, acid, sand, or cement build-up around the pipe ends. Connection threads are API round tubing threads for extra strength. Nonpressure-thread seal configurations are available in Figures 602, 1002, and 1502 wing unions.
Other Weco Unions

Tank unions

150 psi (10 bar) maximum line pressure

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
• Tank union accepts up to 7° pipe misalignment
• Available in 6-, 8-, 10-, and 12-inch sizes
• 6-, 8-, and 10-inch unions may be socket welded to pipe, or butt welded to tubing. 12-inch unions require butt welds.

Air-o-unions

150 psi (10 bar) maximum line pressure

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
• Available in 4-, 6-, 8-, 10-, 12-, 13-, and 16-inch sizes

Suction-hose unions

Recommended service
Mud system suction lines

Features
• Replaceable O-ring
• Choice of end fittings
• Secondary metal-to-metal seal
• Socket welded, threaded, or hosed

See Specifications Table (page 12) for sizes, dimensions, weights, and materials.
Figure 100

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<th>Nominal pipe size (in.)</th>
<th>2</th>
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<th>6</th>
<th>8</th>
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<td>3¾</td>
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<td>5½</td>
<td>6½</td>
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<td>3½</td>
<td>4½</td>
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<td>6½</td>
<td>8½</td>
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<tr>
<td>DI — Ductile iron casting</td>
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<td>3½</td>
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<td>8½</td>
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Woco Wing Union Specifications

Figure 200 and 206

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<td>84</td>
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CS — Carbon steel
SF — Steel forging
SC — Steel casting
DI — Ductile iron casting

* The dimensions and materials for figure 200 and figure 206 steel forging hubs are:
B. Outside diameter 2 ½/₄ (71), C. End-to-end 3 ½ (83).

Figure 207

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<td>7½</td>
<td>9½</td>
<td>12½</td>
<td>14 ½</td>
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ACME threads per inch

Weight (lb) (kg)

Material (Sub) (Nut)

70 3/₄
32
96

44
### Weco Wing Union Specifications

#### Figure 211

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<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
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<th>1 ¼ 32</th>
<th>1 ½ 40</th>
<th>2 50</th>
<th>2 ½ 65</th>
<th>3 80</th>
<th>4 100</th>
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<td>A Clearance radius</td>
<td>(in.) (mm)</td>
<td>2 ½</td>
<td>2 ½</td>
<td>2 ½</td>
<td>3 ½</td>
<td>3 ½</td>
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<td>4</td>
</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
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<td>1 ¼</td>
<td>2 ½</td>
<td>3 ½</td>
<td>3 ½</td>
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<tr>
<td>C End-to-end threaded</td>
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<td>2 ½</td>
<td>3 ½</td>
<td>3 ½</td>
<td>3 ½</td>
<td>3 ½</td>
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<tr>
<td>D Inside diameter</td>
<td>(in.) (mm)</td>
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<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
</tr>
</tbody>
</table>

#### Material
- CS — Carbon steel
- SF — Steel forging
- DI — Ductile iron casting

#### Weight
- (lb) (kg)

#### ACME threads per inch
- Standard
- Modified

#### Figure 400

<table>
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<th>Nominal pipe size</th>
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<th>5 ½ 140</th>
<th>6 150</th>
<th>7 175</th>
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<th>10 250</th>
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<td>3 ½</td>
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<tr>
<td>C End-to-end threaded</td>
<td>(in.) (mm)</td>
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<td>6 ½</td>
<td>6 ½</td>
<td>6 ½</td>
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</tr>
<tr>
<td>D Inside diameter</td>
<td>(in.) (mm)</td>
<td>2 ½</td>
<td>2 ½</td>
<td>2 ½</td>
<td>2 ½</td>
<td>2 ½</td>
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#### Material
- (Sub) (Nut)

#### ACME threads per inch
- Standard

#### Weight
- (lb) (kg)

#### Figure 600

<table>
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<tr>
<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
<th>1 25</th>
<th>1 ½ 40</th>
<th>2 50</th>
<th>2 ½ 65</th>
<th>3 80</th>
<th>4 100</th>
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<tr>
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<td>3 ½</td>
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</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
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<td>1 ½</td>
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<tr>
<td>D Inside diameter</td>
<td>(in.) (mm)</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
<td>1 ½</td>
</tr>
</tbody>
</table>

#### Material
- (Sub) (Nut)

#### ACME threads per inch
- Standard

#### Weight
- (lb) (kg)

#### Material
- CS — Carbon steel
- SF — Steel forging
- SC — Steel casting
- AS — Alloy steel
# Weco Wing Union Specifications

## Figure 602

<table>
<thead>
<tr>
<th>Nominal pipe size (in.) (mm)</th>
<th>1</th>
<th>1 ¼</th>
<th>1 ½</th>
<th>2</th>
<th>2 ¼</th>
<th>2 ½</th>
<th>2 ½ (EUE)</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearance radius (in.) (mm)</td>
<td>2 ½</td>
<td>3 ½</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
</tr>
<tr>
<td>Outside diameter (in.) (mm)</td>
<td>3 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
</tr>
<tr>
<td>End-to-end threaded (in.) (mm)</td>
<td>3 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
</tr>
<tr>
<td>Butt-weld* diameter (in.) (mm)</td>
<td>28</td>
<td>36</td>
<td>43</td>
<td>52</td>
<td>65</td>
<td>81</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (lb) (kg)</td>
<td>3 ¼</td>
<td>9 ¼</td>
<td>12 ¼</td>
<td>16 ¼</td>
<td>21 ¼</td>
<td>30</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Material</td>
<td>CS SF</td>
<td>CS SF</td>
<td>CS SF</td>
<td>CS SF</td>
<td>CS SF</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- CS — Carbon steel
- SF — Steel forging
- ** — XX heavy
- * — Schedule 160

## Figure 1002

<table>
<thead>
<tr>
<th>Nominal pipe size (in.) (mm)</th>
<th>1</th>
<th>1 ¼</th>
<th>1 ½</th>
<th>2</th>
<th>2 ¼</th>
<th>2 ½</th>
<th>2 ½ (EUE)</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearance radius (in.) (mm)</td>
<td>2 ½</td>
<td>3 ½</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
<td>3 ¼</td>
</tr>
<tr>
<td>Outside diameter (in.) (mm)</td>
<td>3 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
<td>4 ¼</td>
</tr>
<tr>
<td>End-to-end threaded (in.) (mm)</td>
<td>3 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
<td>4 ½</td>
</tr>
<tr>
<td>Butt-weld* diameter (in.) (mm)</td>
<td>28</td>
<td>36</td>
<td>43</td>
<td>52</td>
<td>65</td>
<td>81</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (lb) (kg)</td>
<td>3 ¼</td>
<td>9 ¼</td>
<td>12 ¼</td>
<td>16 ¼</td>
<td>21 ¼</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- AS — Alloy steel
- CS — Carbon steel
- SF — Steel forging
- * — Schedule 160

### Diagram

- A
- B
- C
- D
- E*

* Line pipe thread configuration.
- Butt-weld inside diameter dependent on pipe schedule.
### Weco Wing Union Specifications

#### Figure 1003

<table>
<thead>
<tr>
<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
<th>2 50</th>
<th>3 80</th>
<th>4 100</th>
<th>5 125</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Clearance radius</td>
<td>(in.) (mm)</td>
<td>3 ⅜ 95</td>
<td>4 ⅛ 124</td>
<td>5 ⅝ 146</td>
<td>6 ⅜ 166</td>
</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
<td>3 ⅛ 76</td>
<td>4 ⅞ 111</td>
<td>5 ⅜ 140</td>
<td>6 ⅞ 161</td>
</tr>
<tr>
<td>C End-to-end threaded</td>
<td>(in.) (mm)</td>
<td>4 ⅜ 121</td>
<td>9 ⅝ 232</td>
<td>10 ⅝ 278</td>
<td>—</td>
</tr>
<tr>
<td>D End-to-end butt-weld*</td>
<td>(in.) (mm)</td>
<td>4 ⅜ 117</td>
<td>8 ⅞ 225</td>
<td>10 ⅝ 271</td>
<td>10 ⅞ 273</td>
</tr>
<tr>
<td>D End-to-end butt-weld**</td>
<td>(in.) (mm)</td>
<td>4 ⅜ 121</td>
<td>9 ⅝ 232</td>
<td>10 ⅝ 278</td>
<td>10 ⅞ 273</td>
</tr>
<tr>
<td>E Inside diameter</td>
<td>(in.) (mm)</td>
<td>2 50</td>
<td>3 ⅛ 81</td>
<td>4 100</td>
<td>—</td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td></td>
<td>4 Standard</td>
<td>4 Standard</td>
<td>4 Standard</td>
<td>4 Standard</td>
</tr>
<tr>
<td>Weight</td>
<td>(lb) (kg)</td>
<td>12 5.4</td>
<td>45 20</td>
<td>72 33</td>
<td>74 33</td>
</tr>
<tr>
<td>Material</td>
<td>(Sub) (Nut)</td>
<td>AS SF</td>
<td>AS SC</td>
<td>AS SF</td>
<td>AS SC</td>
</tr>
</tbody>
</table>

AS — Alloy steel
CS — Carbon steel
SF — Steel forging

* Schedule 160
** XX heavy

#### Figure 2002

<table>
<thead>
<tr>
<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
<th>2 50</th>
<th>3 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Clearance radius</td>
<td>(in.) (mm)</td>
<td>3 ⅜ 95</td>
<td>4 ⅝ 115</td>
</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
<td>2 ⅜ 65</td>
<td>4 ⅝ 135</td>
</tr>
<tr>
<td>D End-to-end butt-weld</td>
<td>(in.) (mm)</td>
<td>7 ⅜ 188</td>
<td>9 ⅜ 243</td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td></td>
<td>4 4</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>(lb) (kg)</td>
<td>22 10</td>
<td>96 44</td>
</tr>
<tr>
<td>Material</td>
<td>(Sub) (Nut)</td>
<td>AS AS</td>
<td></td>
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</table>

AS — Carbon steel

#### Figure 2202

<table>
<thead>
<tr>
<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
<th>2 50</th>
<th>2 65</th>
<th>3 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Clearance radius</td>
<td>(in.) (mm)</td>
<td>3 ⅜ 95</td>
<td>4 ⅝ 115</td>
<td>6 ⅛ 159</td>
</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
<td>2 ⅜ 65</td>
<td>4 ⅝ 135</td>
<td>5 ⅜ 150</td>
</tr>
<tr>
<td>D End-to-end butt-weld</td>
<td>(in.) (mm)</td>
<td>7 ⅜ 188</td>
<td>9 ⅜ 243</td>
<td>10 ⅜ 267</td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td></td>
<td>5 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>(lb) (kg)</td>
<td>28 12</td>
<td>42 19</td>
<td>55 25</td>
</tr>
<tr>
<td>Material</td>
<td>(Sub) (Nut)</td>
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<td></td>
</tr>
</tbody>
</table>

AS — Alloy steel

#### Figure 1502

<table>
<thead>
<tr>
<th>Nominal pipe size</th>
<th>(in.) (mm)</th>
<th>1 25</th>
<th>1 ⅛ 40</th>
<th>2 50</th>
<th>2 ⅝ 65</th>
<th>3 80</th>
<th>4 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Clearance radius</td>
<td>(in.) (mm)</td>
<td>2 ⅔ 73</td>
<td>3 ⅜ 93</td>
<td>3 ⅜ 93</td>
<td>4 ⅜ 106</td>
<td>4 ⅜ 114</td>
<td>6 300</td>
</tr>
<tr>
<td>B Outside diameter</td>
<td>(in.) (mm)</td>
<td>2 ⅜ 55</td>
<td>3 76</td>
<td>3 ⅜ 81</td>
<td>3 ⅜ 95</td>
<td>4 ⅜ 112</td>
<td>5 ⅛ 146</td>
</tr>
<tr>
<td>C End-to-end threaded</td>
<td>(in.) (mm)</td>
<td>4 ⅜ 110</td>
<td>5 ⅜ 137</td>
<td>7 178</td>
<td>7 ⅛ 184</td>
<td>7 ⅛ 194</td>
<td>8 ⅛ 216</td>
</tr>
<tr>
<td>D End-to-end butt-weld**</td>
<td>(in.) (mm)</td>
<td>4 ⅜ 110</td>
<td>5 ⅜ 137</td>
<td>6 ⅛ 159</td>
<td>—</td>
<td>5 ⅛ 130</td>
<td>8 ⅛ 216</td>
</tr>
<tr>
<td>E Inside diameter</td>
<td>(in.) (mm)</td>
<td>1 ⅛ 28</td>
<td>1 ⅜ 43</td>
<td>2 ⅛ 52</td>
<td>2 ⅝ 65</td>
<td>3 ⅜ 81</td>
<td>—</td>
</tr>
<tr>
<td>ACME threads per inch</td>
<td></td>
<td>3 ⅝ Standard</td>
<td>3 ⅝ Standard</td>
<td>3 Standard</td>
<td>3 ⅝ Standard</td>
<td>3 ⅝ Standard</td>
<td>3 Standard</td>
</tr>
<tr>
<td>Weight</td>
<td>(lb) (kg)</td>
<td>8 3.6</td>
<td>12 5.4</td>
<td>19 ⅛ 8.7</td>
<td>22 10</td>
<td>28 ⅛ 13</td>
<td>75 34</td>
</tr>
<tr>
<td>Material</td>
<td>(Sub) (Nut)</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td>AS SF</td>
<td></td>
</tr>
</tbody>
</table>

AS — Alloy steel
CS — Carbon steel
SF — Steel forging

* Nonpressure-thread seal
** XX heavy

* Line pipe thread configuration.
Butt-weld inside diameter dependent on pipe schedule.
# Weco Wing Union Specifications

## Tank unions

<table>
<thead>
<tr>
<th>Nominal pipe size (in.) (mm)</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>150</td>
</tr>
<tr>
<td><strong>A Clearance radius (in.) (mm)</strong></td>
<td><strong>B Outside diameter (in.) (mm)</strong></td>
</tr>
<tr>
<td>SC</td>
<td>SC</td>
</tr>
</tbody>
</table>

## Air-o-unions

<table>
<thead>
<tr>
<th>Nominal pipe size (in.) (mm)</th>
<th>Material</th>
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</thead>
<tbody>
<tr>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td><strong>A Tube inside diameter (in.) (mm)</strong></td>
<td><strong>B Body inside diameter (in.) (mm)</strong></td>
</tr>
<tr>
<td>SC</td>
<td>SC</td>
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</table>

## Suction-hose unions

<table>
<thead>
<tr>
<th>Size/Type</th>
<th>Length in. mm</th>
<th>Nut radius in. mm</th>
<th>Material Nut Nut Sub</th>
<th>Weight in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-inch hose</td>
<td>14 1/4 356</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>34 15.4</td>
</tr>
<tr>
<td>5-inch hose</td>
<td>14 1/4 356</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>30 14</td>
</tr>
<tr>
<td>5-inch socket weld</td>
<td>4 1/4 103</td>
<td>5 1/4 130</td>
<td>DI Steel</td>
<td>18 8.2</td>
</tr>
<tr>
<td>5-inch line pipe thread</td>
<td>7 1/4 194</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>21 10</td>
</tr>
<tr>
<td>4-inch line pipe thread</td>
<td>6 150</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>25 11.3</td>
</tr>
<tr>
<td>4-inch hose</td>
<td>14 1/2 368</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>25 11.3</td>
</tr>
<tr>
<td>Blanking cap</td>
<td>13 1/4 342</td>
<td>5 1/4 130</td>
<td>DI DI</td>
<td>10 4.5</td>
</tr>
</tbody>
</table>

**DI** — Ductile iron casting

**SC** — Steel casting
FMC can not anticipate all of the situations a user may encounter while installing and using FMC products. Therefore, the user of FMC products MUST know and follow all applicable industry specifications on the safe installation and use of these products. Refer to FMC product catalogs, product brochures and installation, operating and maintenance manuals for additional product safety information or contact FMC at 800/772-8582.

**WARNINGS**

**FAILURE TO FOLLOW THESE WARNINGS COULD RESULT IN SERIOUS INJURY OR DEATH!**

1. Do not mix or assemble components, parts or end connections with different pressure ratings. Mismatched parts may fail under pressure.

2. Do not use or substitute non FMC components or parts in FMC products and assemblies.

3. Do not strike, tighten or loosen pressurized components or connections.

4. Do not exceed the rated working pressure of the product.

5. Complete and proper make-up of components and connections is required to attain rated working pressure.

6. Do not use severely worn, eroded or corroded products. Contact FMC for more information on how to identify the limits of erosion and corrosion.

7. Follow safe practices when using products in overhead applications. Products not properly secured could fall.

8. Select only appropriate product and materials for the intended service:
   - Do not expose standard service products to sour gas fluids. (Refer to NACE MR-0175.)
   - Do not interchange sour gas components with standard service components.
   - Use appropriate safety precautions when working with ferrous products in below freezing temperatures. Freezing temperatures lower the impact strength of ferrous materials.


10. Make certain that personnel and facilities are protected from residual hazardous fluids before disassembly of any product.

11. If any leakage is detected from FMC products, take them from service immediately to prevent potential damage and personal injury.

**SAFETY INSTRUCTIONS**

The applications of FMC products are in working environments where general personnel safety procedures and policies MUST be followed. Always use appropriate protective equipment in high pressure, extreme temperature or severe service applications.
FMC Corporation
Fluid Control Division

Division Headquarters
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Houston, Texas 77040
Phone: 713/510-6800
Fax: 713/510-6803
http://www.fmc.com/Eteg
E-mail: fluid_control@fmc.com

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Fax: 254/968-5709
TollFree: 1-800-772-8582

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Fax: (65) 861-8251

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Fax: (971) 4/310-950