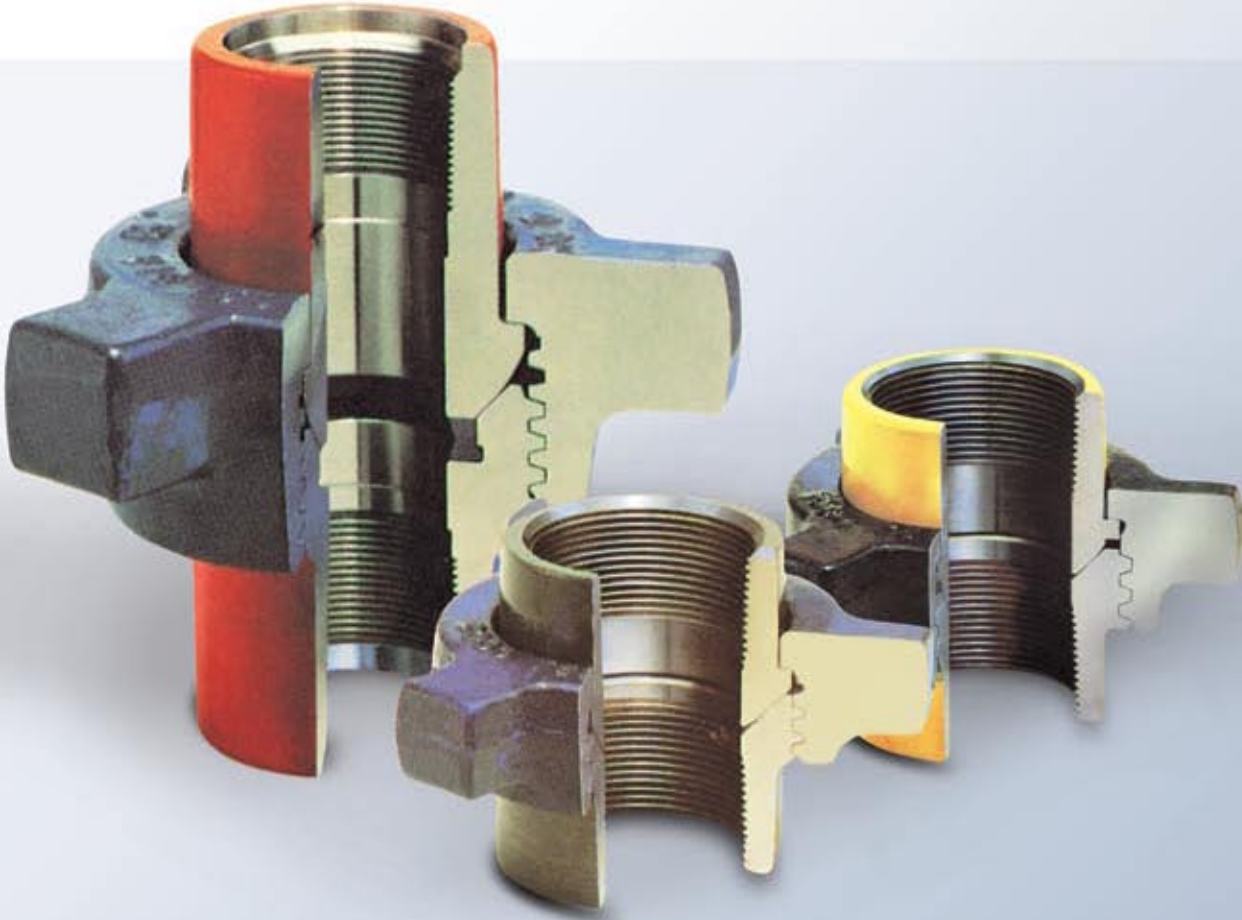


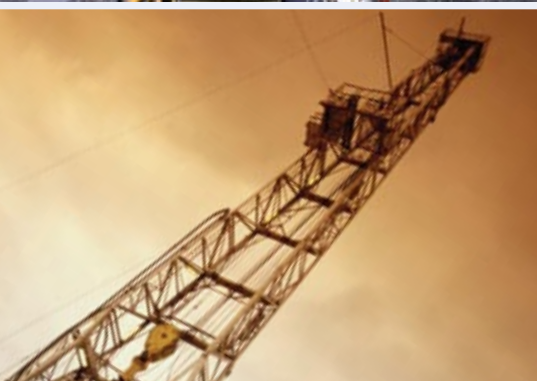
July 2008




Catawissa[™]
Wing Unions

BUILDING CONNECTIONS THAT LAST

BUILDING CONNECTIONS THAT LAST



For over 150 years, Anvil has worked diligently to build a strong, vibrant tradition of making connections — from pipe to pipe and people to people.

We pride ourselves in providing the finest-quality pipe products and services with integrity and dedication to superior customer service at all levels.

We provide expertise and product solutions for a wide range of applications, from plumbing and mechanical, HVAC, industrial and fire protection to mining, and oil and gas. Our comprehensive line of products includes: grooved pipe couplings, grooved and plain-end fittings, valves, cast and malleable iron fittings, forged steel fittings, steel pipe nipples and couplings, pipe hangers and supports, channel and strut fittings, mining and oil field fittings, along with much more.

As an additional benefit to our customers, Anvil offers a complete and comprehensive Design Services Analysis for mechanical equipment rooms, to help you determine the most effective and cost-efficient piping solutions for your pipe system.

At Anvil, we believe that responsive and accessible customer support is what makes the difference between simply delivering products — and delivering solutions.



Wing Unions

Anvil is a leading manufacturer of quality industrial forged steel and oil field wing unions. Oil field wing union products range in size from 1" to 10" and include the standard ball-and-cone design, plus our unique Figure 300 Flat Face design, where space and pipeline separation is a consideration. Catawissa™ unions are available for both standard and sour gas service, and in threaded ends as well as butt weld and non-pressure seal ends.

All Catawissa oil field wing unions are machined to rigid quality standards, ensuring that like components of same size, figure number, and pressure rating are fully interchangeable in the field. Catawissa oil field unions are interchangeable with most other leading union manufacturers. All Catawissa products meet or exceed the following standards: NACE, ISO, DNV, API, ASTM A-105, ASTM A29, ASTM A536 Grade 65-45-12, and ANSI B1.20.1.

When you choose Catawissa, you receive the utmost quality, the widest selection, and unmatched on-time delivery. Our 106,000-square-foot Longview facility produces more than 460,000 forged steel fittings, hammer unions, and seamless nipples each month — with documented first article and in-process inspections every hour. Our meticulous Quality Control department also threads gauges every 5–10 pieces and performs product audits according to a strict sampling plan.

Catawissa — Preferred the world over!

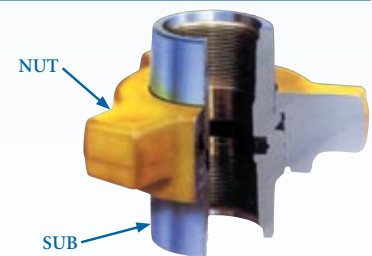
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Product Availability Quick Reference Chart

Fig No.	Standard Service		Sour Service		Pipe Size (in.)									
	CWP	Test	CWP	Test	1	1¼	1½	2	2½	3	4	6	8	10
	SUB	NUT	NUT	SUB										
100	1,000	1,500	N/A	N/A				✓	✓	✓	✓	✓	✓	
200	2,000	3,000	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
206	2,000	3,000	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	
207	2,000	3,000	N/A	N/A						✓	✓			
211	2,000	3,000	N/A	N/A	✓			✓						
300	2,000	3,000	N/A	N/A	✓			✓	✓	✓	✓			
301	3,000	4,500	N/A	N/A	✓		✓	✓		✓				
400	4,000	6,000	4,000	6,000				✓	✓	✓	✓			
600	6,000	9,000	N/A	N/A	✓		✓	✓		✓	✓			
602	6,000	9,000	6,000	9,000	✓		✓	✓	✓	✓	✓			
607	6,000	9,000	N/A	N/A			✓	✓						
1002	10,000	15,000	7,500	12,500	✓		✓	✓		✓	✓			
1502	15,000	22,500	10,000	15,000			✓	✓		✓				
100C	1,000	100	100	N/A				✓						
200C	2,000	1,500	N/A	N/A	✓			✓						
S1A High Speed	3,000	4,500	N/A	N/A				✓		✓				
S1A	3,000	4,500	N/A	N/A	✓			✓						

NOTES: Catawissa recommends Butt Weld Unions for Sour Gas Service. Sour Gas Unions will be supplied with Viton seals as standard. Catawissa does not warrant any elastomer for H2S service (Sour Gas). Power makeup required for Figures 1002 and 1502 Unions.



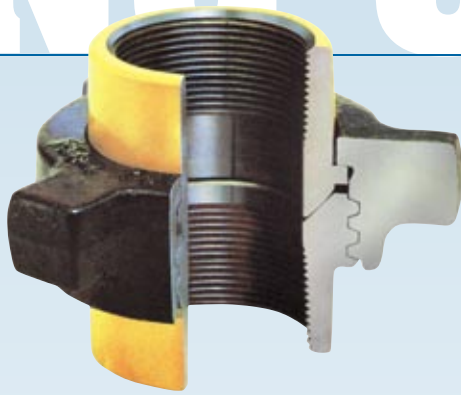


Figure 100* | 1,000 PSI CWP — 69 Bar

Low pressure service. Manifold and general service. Female threaded ends. 2" available with 8RD thread. Consult factory.

Material Specifications

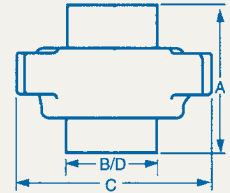
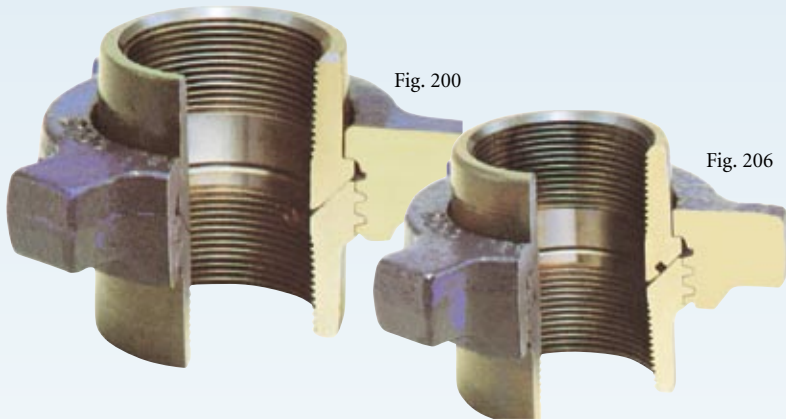


FIGURE 100

Size IN	MM	Weight Lbs	A	B	C+	TPI	Material	
							Nuts	Subs
2	50	6.25	3.940	2.840	6.250	3 MOD	DI	DI
2½	65	10.05	4.490	3.390	7.925	3 MOD	DI	DI
3	80	13.65	5.000	4.030	9.000	3 MOD	DI	DI
4	100	22.00	5.940	5.230	10.560	3 MOD	DI	DI
6	150	45.85	6.800	7.390	13.810	3 STD	DI	DI
8	200	66.65	7.230	9.700	16.125	3 STD	DI	DI



Figures 200** & 206 | 2,000 PSI CWP — 138 Bar

Fig. 200 is a general purpose union. Thread and butt weld ends available. Fig. 206 has O-ring in male sub for improved sealing. Available in threaded and weld ends.

FIGURE 200 & 206

Size IN	MM	Weight Lbs	A	B	C+	D	TPI	Material	
								Nuts	Subs
1	25	1.75	2.670	1.640	4.065	**	6 STD	DI	SF
1¼	32	2.25	2.730	1.935	4.635	**	6 STD	DI	SF
1½	40	2.75	2.770	2.250	4.750	**	6 STD	DI	SF
2	50	4.90	3.275	2.825	5.900	**	4 STD	DI	*DI
2½	65	10.00	4.250	3.400	7.900	**	4 STD	DI	SF
3	80	13.25	4.660	4.170	8.100	**	4 STD	DI	SF
4	100	18.35	4.910	5.075	9.060	**	3 MOD	DI	SF
6	150	46.00	6.610	7.410	12.800	**	3 STD	DI	SF
8	200	68.00	7.240	9.650	13.750	**	3 STD	DI	SF
10	250	98.00	9.200	11.500	18.000	**	3 STD	DI	SF

FIGURE 207



Figure 207 | 2,000 PSI CWP — 138 Bar

Manifold and end of line service. Use for general blanking service. O-Ring seal in cap. Available in threaded and weld ends. Cap can be tapped for pressure gauge. Recommended for air, water, and oil or gas service.

Size IN	MM	Weight Lbs	A	B	C+	D	TPI	Material	
								Nuts	Subs
3	80	10.00	3.750	4.093	5.750	**	4 STD	SF	SF
4	100	18.76	4.500	5.315	7.240	**	3 MOD	SF	SF

TPI = Threads per inch ** Weld ends — Consult Factory
 DI = Ductile Iron † Steel Forging Subs available/Consult Factory
 SF = Steel Forging

WARNINGS

1. Do not mix Standard Service and Sour Gas Service Unions or parts.
2. Do not make up or break out Unions in pressurized lines.
3. Always use good safety practices, including use of safety glasses, when making up or breaking out Unions.

* FIG. 100 — 2". Also available in import. Contact your Anvil sales rep.
 ** FIG. 200 — 1-2". Also available in import. Contact your Anvil sales rep.

Material Specifications

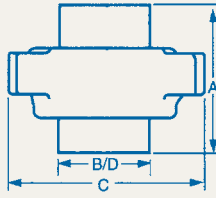


FIGURE 211

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Nuts	Subs
1	25	2.34	2.830	1.560	4.660	6 STD	SF	SF
2	50	6.24	3.510	2.880	6.250	6 STD	SF	SF

FIGURE 300

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Nuts	Subs
1	25	2.00	2.625	1.560	4.250	DI	SF	
2	50	5.50	3.750	2.780	5.750	DI	SF	
2½	65	9.00	4.625	3.410	7.000	DI	SF	
3	80	12.00	5.000	4.30	8.000	DI	SF	
4	100	21.00	5.750	5.110	8.875	DI	SF	

FIGURE 301

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Nuts	Subs
1	25	1.75	2.670	1.640	4.065	6 STD	SF	SF
2	50	4.90	3.275	2.825	5.900	3½ STD	SF	SF
3	80	13.25	4.660	4.170	8.100	4 STD	SF	SF
4	100	18.35	4.910	5.075	9.060	3 MOD	SF	SF

TPI = Threads per inch ** Consult Factory
 DI = Ductile Iron † Steel Forging Subs available/Consult Factory
 SF = Steel Forging

WARNINGS

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2. Do not make up or break out Unions in pressurized lines.
3. Always use good safety practices, including use of safety glasses, when making up or breaking out Unions.

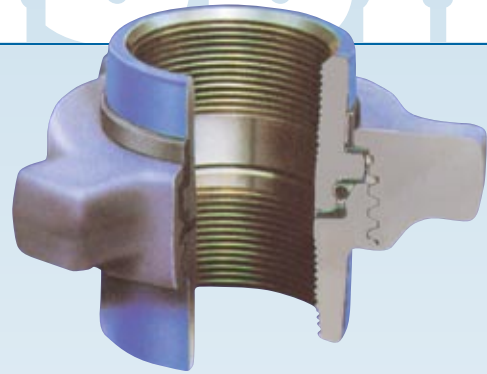
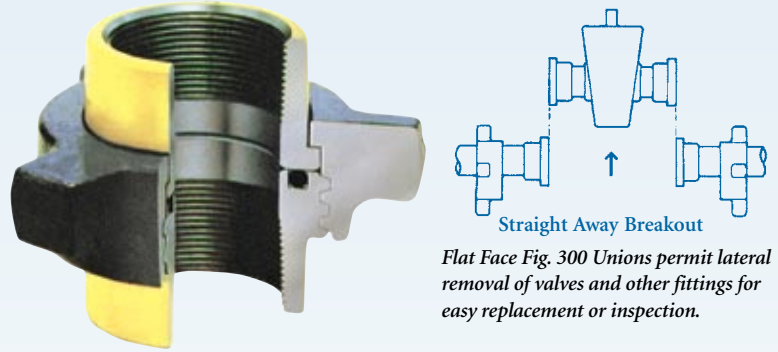


Figure 211 | 2,000 PSI CWP — 138 Bar

Insulating Union. Laminated rings provide full insulation from electrolytic corrosion. Total of 35 million OHMS resistance. O-Ring in male sub and seal ring in female sub provide primary and secondary seals. All seal rings are field-replaceable. Available in threaded and butt weld ends.



Flat Face Fig. 300 Unions permit lateral removal of valves and other fittings for easy replacement or inspection.

Figure 300 | 2,000 PSI CWP — 138 Bar

“Flat Face” design for straight breakout. Unlike Standard Unions, no spreading of line is required, thus allowing quick breakout. Unions seal equally well in low or high pressure liquid or vapor service.

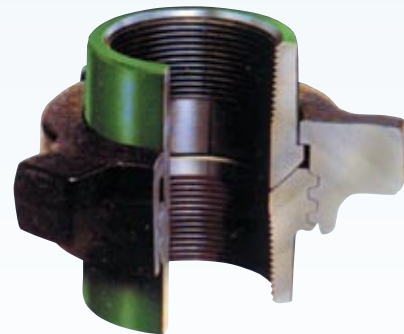


Figure 301 | 3,000 PSI CWP

Ideal Steam Service Union.



Figure 400 | 1,000 PSI CWP — 69 Bar

Ideal for manifold and pumping service. Available in threaded and weld ends.

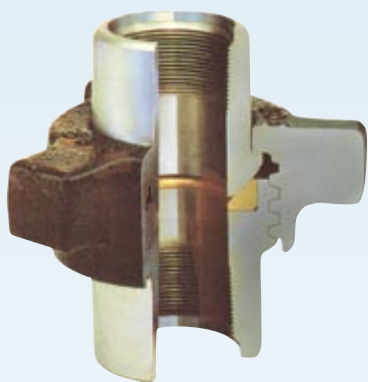


Figure 600 | 2,000 PSI CWP — 138 Bar

Features bronze seat for primary seal to prevent rust and corrosion in well servicing and drilling. Available in threaded and weld ends.

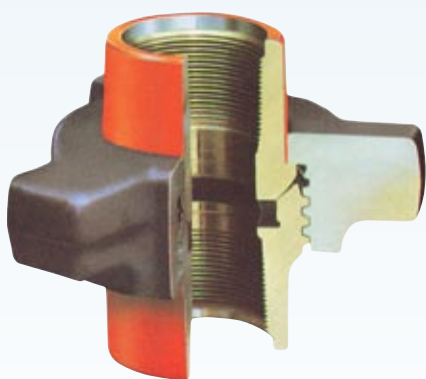


Figure 602 | 2,000 PSI CWP — 138 Bar

Compact design is well-suited for manifold service. Lip type elastomer seal protects the metal-to-metal seal. Seal design reduces line turbulence. Available for sour gas service. Available in threaded, welded, and non-pressure seal ends.

Material Specifications

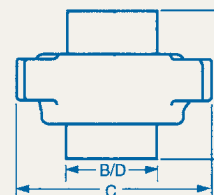


FIGURE 400

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Lbs	Nuts
2	50	11.40	5.225	3.000	7.125	3 STD	SF	SF
3	80	20.00	6.110	4.250	8.750	3 STD	SF	SF
4	100	29.15	8.200	5.275	9.160	3 STD	SF	SF

FIGURE 600

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Lbs	Nuts
1	25	3.65	3.565	1.750	4.500	6 STD	SF	BS
1½	40	**	**	**	**	4 STD	SF	BS
2	50	15.64	6.440	3.010	7.160	2 STD	SF	(F)ST (M)SF
2	80	27.25	8.875	4.1875	8.750	2 STD	SF	SF
2	100	40.00	10.0625	5.250	10.625	2 STD	SF	SF

FIGURE 602

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Lbs	Nuts
1	25	3.55	6.625	1.750	4.500	6 STD	SF	SF
1½	40	9.54	4.600	2.570	5.520	4 STD	SF	SF
2	50	12.25	5.300	2.970	6.875	3 MOD	SF	SF
2½	65	20.00	6.125	3.500	7.750	3 MOD	SF	SF
3	80	22.30	6.310	4.250	8.875	3 MOD	SF	SF
4	100	32.18	8.300	5.200	10.040	3 MOD	SF	SF

TPI = Threads per inch ST = Steel Tubing
 DI = Ductile Iron ** Consult Factory
 SF = Steel Forging † Steel Forging Subs available/Consult Factory
 BS = Bar Stock

WARNINGS

1. Do not mix Standard Service and Sour Gas Service Unions or parts.
2. Do not make up or break out Unions in pressurized lines.
3. Always use good safety practices, including use of safety glasses, when making up or breaking out Unions.

Material Specifications

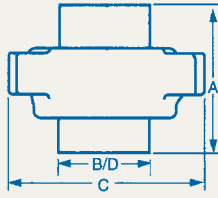


FIGURE 607

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Nuts	Subs
1½	40	8.96	4.150	2.600	6.525	5 STD	SF	SF
2	50	14.64	5.850	3.080	7.330	3 STD	SF	SF

FIGURE 1002

Size	Weight		A	B	C	TPI	Material	
	IN	MM					Nuts	Subs
1	25	3.62	3.620	1.750	4.500	6 STD	All	
1½	40	9.54	4.600	2.570	5.520	4 STD	Alloy	
2	50	13.00	5.200	3.000	7.375	3 MOD	Steel	
3	80	22.40	6.200	4.240	9.320	4 STD	Forging	
4	100	33.82	8.280	5.250	10.700	4 STD		

FIGURE 1502

Size	Weight		A	B	C	D	TPI	Material	
	IN	MM						Nuts	Subs
1½	40	15.46	4.900	3.000	6.700	**	3½ STD	All Alloy	
2	50	19.50	7.060	3.230	7.860	**	3 STD	Steel	
3	80	30.48	7.630	4.400	9.900	**	3½ STD	Forging	

TPI = Threads per inch **Weld Ends/Consult Factory
 DI = Ductile Iron †Steel Forging Subs available/Consult Factory
 SF = Steel Forging

WARNINGS

1. Do not mix Standard Service and Sour Gas Service Unions or parts.
2. Do not make up or break out Unions in pressurized lines.
3. Always use good safety practices, including use of safety glasses, when making up or breaking out Unions.

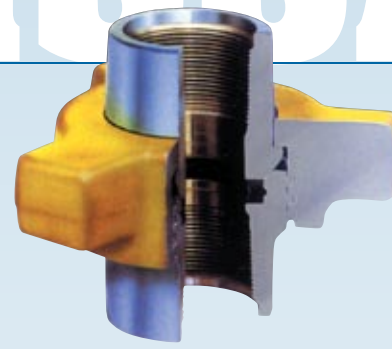


Figure 607 | 2,000 PSI CWP — 138 Bar

Ideal for hot oil trucks and any application similar to Figure 602. Extended Subs allow for quick breakout on trucks and manifolds. Metal-to-metal connection.



Figure 1002 | 1,000 PSI CWP — 69 Bar

Alloy steel forgings in high-pressure manifold and treating iron connections. Field-replaceable lip-type elastometer seal protects the metal-to-metal seal. Available for sour gas service. Available in threaded, welded, and non-pressure seal ends. Unions are used primarily by service companies on applications of cementing, fracturing, and acidizing.

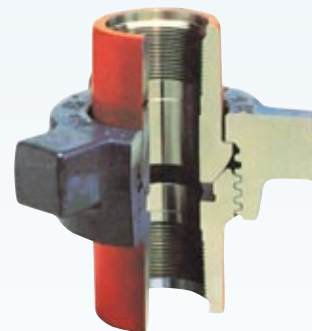


Figure 1502 | 2,000 PSI CWP — 138 Bar

Alloy steel forgings in high-pressure manifold and treating iron connections. Field-replaceable lip-type elastometer seal protects the metal-to-metal seal. Available for sour gas service. Available in threaded, welded, and non-pressure seal ends with detachable nut.



IMPORT

Figure 100C | Lug Union 2"

Ideal for low-pressure service. Manifold and general service. Female threaded ends.



IMPORT

Figure 200C | Lug Union 1" & 2"

General purpose union. Available in threaded ends.

Coated Products

Anvil's coated products protect pipes against the corrosive conditions found in oil and gas pipelines. They are effective on all grades of pipe, and can be used to coat malleable, cast iron, forged steel, and ductile metals.

Anvil provides two stock coatings, Scotchcote 134 and Corvel 1660, which are durable, reliable and field-tested. **Scotchcote 134** is a fusion-bonded epoxy coating designed to protect metal surfaces from corrosion. It is resistant to wastewater, corrosive acids, hydrocarbons, harsh chemicals, brine, and saltwater. **Corvel 1660** is specially designed to protect the inside diameter of tubular goods in applications such as fittings, valves, drill pipes, sucker rods, and metering systems. Corvel 1660 is resistant to H₂S, CO₂, harsh chemicals, brine, and salt water.

Material Specifications

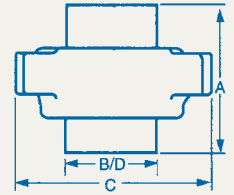


FIGURE 100C — 2"

Size IN MM	Weight Lbs	A	B	C+	TPI	Material	
						Nuts	Subs
2 50	6.25	3.940	2.840	6.250	3 MOD	SF	SF

FIGURE 200C — 1" & 2"

Size IN MM	Weight Lbs	A	B	C+	D	TPI	Material	
							Nuts	Subs
1 25	1.75	2.670	1.640	4.065	**	6 STD	SF	SF
2 50	4.90	3.275	2.825	5.900	**	4 STD	SF	SF



Anvil also offers a range of specialty coatings, available upon request, including nickel coating, chrome plating, Teflon coating, Nap-Guard coating, and powder coating.



Sour Gas Unions

Catawissa Sour Gas Unions are manufactured to the most rigid quality control standards and meet or exceed the requirements of the National Association of Corrosion Engineers Standards — NACE MR-01-75 and APR RP-14E. Sour Gas Unions are available in Figure 602, 1002, and 1502. All of the steel components are fully traceable with complete mill certifications and hardness test documentation. Standard seal ring material is fluoroelastomer. Sour Gas Unions are available with detachable nuts.

Available in Figures 602, 1002, 1502.

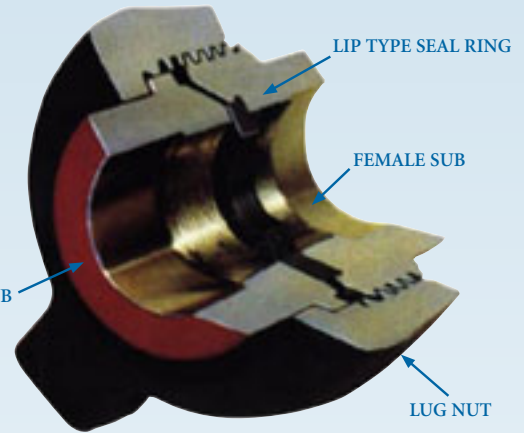


S1A | High Speed Union 2" & 3"

3000# FS UNION. Female threaded ends.

WARNINGS

1. Do not mix Standard Service and Sour Gas Service Unions or parts.
2. Do not make up or break out Unions in pressurized lines.
3. Always use good safety practices, including use of safety glasses, when making up or breaking out Unions.



Non-Pressure Seal Connections

Catawissa's non-pressure seal design is recommended for severe services encountering high-pressure abrasive and erosive conditions. The non-pressure seal is an ideal alternative to weld end unions, where permanent connections are desired.

By eliminating threads from line fluid contact and abrasives with a smooth through bore, the potential washout and buildups are essentially reduced or eliminated.

All connected threads to pipe are API round tubing Assembly is fabricated to pipe and secured with epoxy compound. Available in Figures 602, 1002, 1502.



S1A | Tri-Lug High Speed Union 1" & 2"

3000# FS UNION. Tri-Lug with female threaded ends.

BRANDS OF ANVIL INTERNATIONAL



Anvil® product lines include malleable and cast iron fittings, unions and flanges; seamless steel pipe nipples; steel pipe couplings; universal anvilets; forged steel fittings and unions; pipe hangers and supports; threaded rod; and engineered hangers.



The Gruvlok® product line consists of couplings for grooved and plain-end fittings, butterfly valves and check valves; flanges; pump protection components; pipe grooving tools; as well as copper and stainless steel system components.



The SPF/Anvil™ product line includes a variety of internationally sourced products such as grooved couplings, fittings and flanges, cast iron, malleable iron and ductile iron threaded fittings, steel pipe nipples, as well as o'lets.



Beck steel pipe nipples and steel pipe couplings are manufactured in accordance with the ASTM A733 Standard Specification for Welded and Seamless Carbon Steel and Stainless Steel Pipe Nipples. Steel pipe couplings are manufactured in accordance with the ASTM A865 Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints. Beck API couplings are manufactured in accordance with the API Specification for line pipe.



Anvil-Strut™ products include a complete line of channel in stock lengths of 10 and 20 feet, with custom lengths available upon request. A variety of fittings and accessories are also offered. All products can be ordered in an assortment of finishes and material choices including SupR-Green™, Zinc Trivalent Chromium, pre-galvanized, hot-dipped galvanized, electro-galvanized, aluminum, plain, and stainless steel.



AnvilStar™ offers a complete line of products for the fire protection industry, including Gruvlok® couplings, fittings, flanges; valves, and roll groovers; steel pipe nipples and couplings; cast and malleable iron threaded and flanged fittings; pipe hangers and supports; Merit® tee-lets, drop nipples; steel welding flanges; SPF grooved couplings, fittings, and flanges; SPF cast iron and ductile iron threaded fittings, o'lets, steel pipe nipples; and Mueller valves and indicator posts.



JB Smith™ is the leading manufacturer of oil country tubular fittings, swages and bull plugs – all meeting API specifications. Offering tubing nipples, casing nipples as well as a full line of traditional line pipe and oil country threads in every schedule, JB Smith is the resource for all your oil field needs.



The Merit® product line includes a variety of tee-lets, drop nipples, and steel welding flanges for fire protection applications. Most Merit products are UL/ULC Listed, FM Approved, and rated from 175 to 300 psi.



Catawissa™ NACE and API approved wing unions for Standard and Sour Gas Service are offered in non-pressure seal ends as well as threaded and butt weld, and are interchangeable with most leading union manufacturers. Fully traceable and available with complete mill certifications, Catawissa's oil field wing union product line includes the standard ball-and-cone design plus our unique Figure 300 Flat Face design, where space and pipe line separation are a consideration.



Canvil® manufactures low-pressure hexagon reducer bushings, as well as plugs and hex caps up to 1" in diameter in various finishes, including Oil Treat, Phosphate and Electro Galvanized. In addition, Canvil manufactures A105 hex or round material in class 3000 and 6000 pound, forged steel couplings and bar stock products offered as either as-normalized (A105) or non-normalized (A105N) that are fully traceable for mechanicals and chemistry through our MTR program.



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U.S. REGIONAL SERVICE CENTERS

Eastern Region

SERVICING: Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North and South Carolina, East Pennsylvania, Rhode Island, Vermont, Virginia

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