

For a More Perfect Union.



HART *SURE SEAL O-RING UNIONS*

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For a More Perfect Union Get Together with HART

O-RING UNIONS

Hart O-ring Unions are used when piping requirements dictate the necessity of having a flat face seat to make and break the pipe line. Hart Unions meet requirements where a O-ring, zero leakage, seal is needed.

FEATURES

- Turbulance-free fit across seats. Full bore I.D.
- O-ring located in the threadpiece face, well out of the waterway bore providing added protection against abrasives and erosion.
- Combination End Connections. Threaded, socketweld and buttweld ends are all interchangeable, as well as one-step line size changes.
- 3,000 psi W.O.G. Cold Non-Shock Pressure rating is standard. 6,000 and 10,000 psi are also available.
- Precision Machined Parts. Ends taper reamed before threading.
- Resistant to Vibration. Seals will not loosen, even under extreme vibration or pressure surges.
- No maintainance needed because once the seal is made it never requires retightening.
- Saves money and weight by eliminating unnecessary nipples, bushings, couplings and inserts when initially designed into the system.

DESIGN STANDARDS

Unions are designed to comply with current industry standards for pressure piping. These standards include ANSI B 31.1.0 "Power Piping", ANSI B16.11 "Forged Steel Fittings Socket Welded and Threaded", and ASME "Boiler and Pressure Vessel Code".

Fail-Safe Leakproof Reliability

At any pressure Hart O-rings actually strengthen the seal rather than loosen it.



STATIC

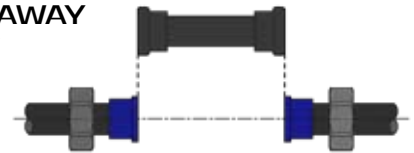
The O-ring is fitted into a machined groove between the two halves of the union. When the halves are drawn together the O-ring compresses to an ovalized cross-section, forming a positive, resilient seal which serves to block the fluid, thus sealing even at the low or no pressure.

UNDER LOAD

As pressure is increased the O-ring is forced to flow and is "squeezed" into the downstream side causing the O-ring to conform to the shape of the end, blocking the groove gap. The more the system pressure increases, the more effective the seal.



STRAIGHT-AWAY BREAKOUT



The flat faced construction allows for slipping the component in and out without disturbing the surrounding tube or pipe sections. Pipe alignment is much easier with Hart Unions since it is unnecessary to spring the line during make-up or disassembly.

Female Threaded O-ring Union (Figure 3131)

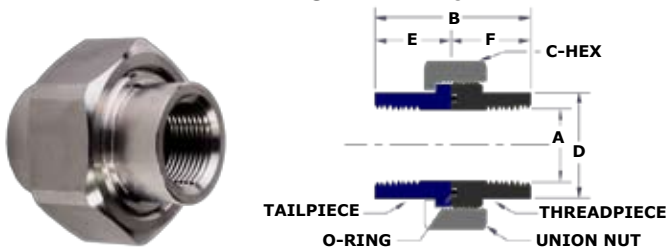


FIGURE NO.	A FNPT	B	C HEX	D	E TAIL PIECE	F THREAD PIECE	WGT. (lbs.)
3131-0	1/8"-27	1.660	1 3/8	3/4	.785	.875	1/2
3131-1	1/4"-18	1.660	1 3/8	3/4	.785	.875	1/2
3131-2	3/8"-18	1.800	1 1/2	7/8	.863	.937	1/2
3131-3	1/2"-14	2.035	1 7/8	1 1/8	.935	1.100	1
3131-4	3/4"-14	2.148	2 1/8	1 3/8	1.023	1.125	1 1/4
3131-5	1"-11 1/2	2.570	2 1/2	1 3/4	1.258	1.312	2
3131-6	1 1/4"-11 1/2	2.822	3	2 1/8	1.385	1.437	3
3131-7	1 1/2"-11 1/2	3.072	3 3/8	2 3/8	1.510	1.562	4
3131-8	2"-11 1/2	3.259	3 7/8	2 7/8	1.572	1.687	5
3131-9	2 1/2"-8	3.635	4 7/8	3 1/2	1.760	1.875	8 1/2
3131-10	3"-8	4.135	5 1/2	4	2.010	2.125	9

Socketweld O-ring Union (Figure 3333)

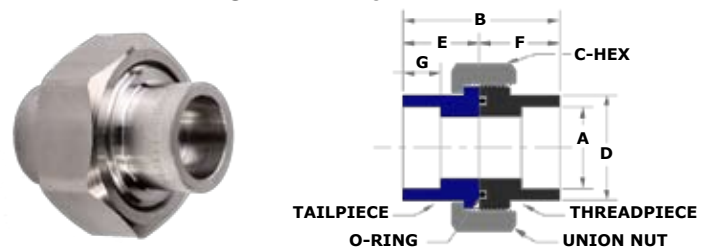


FIGURE NO.	A NPS	B	C HEX	D	E TAIL PIECE	F THREAD PIECE	G	WGT. (lbs.)
3333-0	1/8"	1.660	1 3/8	3/4	.785	.875	3/8	1/2
3333-1	1/4"	1.660	1 3/8	3/4	.785	.875	3/8	1/2
3333-2	3/8"	1.800	1 1/2	7/8	.863	.937	7/16	1/2
3333-3	1/2"	2.035	1 7/8	1 1/8	.935	1.100	1/2	1
3333-4	3/4"	2.148	2 1/8	1 3/8	1.023	1.125	9/16	1 1/4
3333-5	1"	2.570	2 1/2	1 3/4	1.258	1.312	5/8	2
3333-6	1 1/4"	2.822	3	2 1/8	1.385	1.437	11/16	3
3333-7	1 1/2"	3.072	3 3/8	2 3/8	1.510	1.562	3/4	4
3333-8	2"	3.259	3 7/8	2 7/8	1.572	1.687	7/8	5
3333-9	2 1/2"	3.635	4 7/8	3 1/2	1.760	1.875	7/8	8 1/2
3333-10	3"	4.135	5 1/2	4	2.010	2.125	1	9

*Nominal Pipe Size



ORIFICE UNION

FOR PRECISE REGULATION OF FLOW AND
PREDETERMINED PRESSURE DROP

- Double O-Ring design for zero leakage
- If specific bore size is needed, specify orifice hole diameter desired.
- Minimum hole size is 1/32 (.03125"). Also can be furnished with blank orifice plate.
- Orifice plate thickness is .0830" (+/- .005")
- Standard O-Rings include: Viton, Teflon, Buna, Nitrile and EPDM
- Specify prefix letter "O" to designate Orifice Union



HAMMER BLOW-LUG NUT

FOR FAST MAKE AND BREAK APPLICATIONS

- Ideal for applications in rough environments
- No special tools required to assemble pipe union
- Union Lug Nut and Threadpiece contain "ACME PipeThreads" for rapid assembly and disassembly
- Specify prefix letter "H" to designate Hammer Style Union



DIELECTRIC-INSULATING UNIONS

(approved for gases and liquids)

THE MOST EFFECTIVE METHOD OF PREVENTING ELECTROLYTIC DETERIORATION

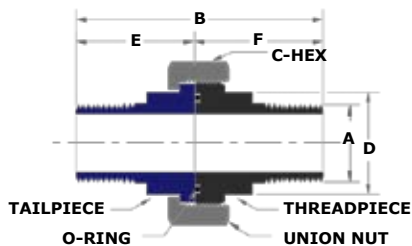
- Engineered to insulate against galvanic corrosion
- Breaks the flow of current-preventing stray current corrosion (RF Shielding).
- Union tailpiece is uniformly coated with a tough polymer composite coating
- Coating Thickness: 3-6 mils.
- Dielectric Strength: >600 volts/mil (ASTM D149-97)
- Breakdown Voltage: >20000 volts at 650µm (ASTM D149)
- Volume Resistivity: 1.26 x 10¹⁶ ohm-cm (ASTM D257)
- Pencil Hardness: H (ASTM B3363)
- Salt Spray Resistance: 500 hours-No Blistering (ASTM B117)
- Specify prefix letter "D" to designate Dielectric Union

HIGH TEMPERATURE / HIGH PRESSURE UNION

Flat-face design allows easy removal without having to spring piping. Union contains a spiral-wound 304 stainless steel gasket with graphite filler.

Suitable for hot oil, saturated steam, cryogenic fluids, and other process fluids; in high-pressure/high-temp. steam trap, valve, pump, and compressor manifold applications.

Male Threaded O-ring Union (Figure 3232)



Buttweld O-ring Union (Figure 3535)

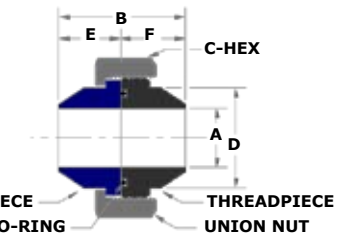


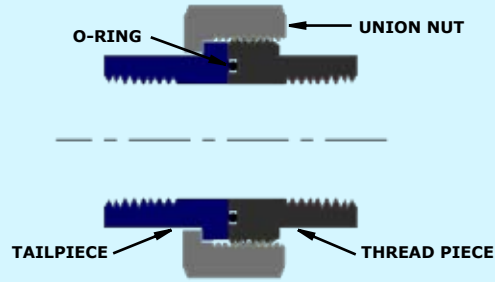
FIGURE NO.	A MNPT	B	C HEX	D	E TAIL PIECE	F THREAD PIECE	WGT. (lbs.)
3232-0	1/8"	2 ¹³ / ₁₆	1 ³ / ₈	3/4	1 ³ / ₈	1 ⁷ / ₁₆	3/4
3232-1	1/4"	2 ¹⁵ / ₁₆	1 ³ / ₈	3/4	1 ³ / ₈	1 ⁹ / ₁₆	3/4
3232-2	3/8"	2 ¹⁵ / ₁₆	1 ¹ / ₂	7/8	1 ³ / ₈	1 ⁹ / ₁₆	3/4
3232-3	1/2"	3 ³ / ₁₆	1 ⁷ / ₈	1 ¹ / ₈	1 ¹ / ₂	1 ¹¹ / ₁₆	1 ¹ / ₄
3232-4	3/4"	4	2 ¹ / ₈	1 ³ / ₈	1 ⁷ / ₈	2 ¹ / ₁₆	1 ¹ / ₂
3232-5	1"	4 ³ / ₁₆	2 ¹ / ₂	1 ³ / ₄	2	2 ³ / ₁₆	2 ¹ / ₄
3232-6	1 ¹ / ₄ "	4 ⁵ / ₈	3	2 ¹ / ₈	2 ¹ / ₈	2 ¹ / ₂	3 ¹ / ₂
3232-7	1 ¹ / ₂ "	4 ¹¹ / ₁₆	3 ¹ / ₂	2 ³ / ₈	2 ¹ / ₈	2 ⁹ / ₁₆	4 ¹ / ₂
3232-8	2"	4 ³ / ₄	3 ⁷ / ₈	2 ⁷ / ₈	2 ¹ / ₈	2 ⁵ / ₈	5 ¹ / ₂

FIGURE NO.	**	A	B	C HEX	D	E TAIL PIECE	F THREAD PIECE	WGT. (lbs.)
3535-0	1/8"	*	1 ³ / ₄	1 ³ / ₈	.405	3/4	1	1/2
3535-1	1/4"	*	1 ³ / ₄	1 ³ / ₈	.540	3/4	1	1/2
3535-2	3/8"	*	1 ³ / ₄	1 ¹ / ₂	.675	3/4	1	1/2
3535-3	1/2"	*	1 ¹³ / ₁₆	1 ⁷ / ₈	.840	1 ¹³ / ₁₆	1	1/2
3535-4	3/4"	*	2 ¹ / ₈	2 ¹ / ₈	1.050	1	1 ¹ / ₈	3/4
3535-5	1"	*	2 ³ / ₁₆	2 ¹ / ₂	1.315	1 ¹ / ₁₆	1 ¹ / ₈	1
3535-6	1 ¹ / ₄ "	*	2 ³ / ₈	3	1.660	1 ¹ / ₁₆	1 ⁵ / ₁₆	1 ¹ / ₄
3535-7	1 ¹ / ₂ "	*	2 ³ / ₈	3 ³ / ₈	1.900	1 ¹ / ₁₆	1 ⁵ / ₁₆	1 ¹ / ₄
3535-8	2"	*	2 ⁷ / ₁₆	3 ⁷ / ₈	2.375	1 ¹ / ₁₆	1 ³ / ₈	3 ¹ / ₂
3535-9	2 ¹ / ₂ "	*	2 ¹ / ₂	4 ⁷ / ₈	2.875	1 ¹ / ₈	1 ³ / ₈	3 ³ / ₄
3535-10	3"	*	2 ³ / ₄	5 ¹ / ₂	3.500	1 ¹ / ₄	1 ¹ / ₂	4
3535-12	4"	*	2 ⁷ / ₈	7 ³ / ₄	4.500	1 ⁵ / ₁₆	1 ⁹ / ₁₆	4 ¹ / ₂

*Corresponds to Pipe Schedule (Specify with Suffix)

**Nominal Pipe Size

HOW TO ORDER



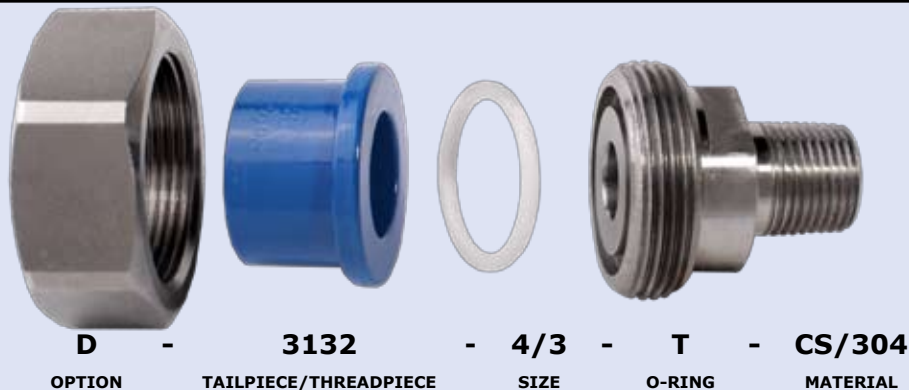
DESCRIPTION	TAIL	THREAD PIECE	SIZE	O-RING	MATERIAL	OPTIONS
FNPT 3,000 lb. Pipe	31	31	0 (1/8")	STANDARD O-RINGS V Viton® Fluorocarbon A (FKM-A) E Ethylene Propylene (EPDM) T Teflon® Tetrafluoroethylene (FEP) B Nitrile / Buna N (NBR) SPECIALTY O-RINGS / SEALS N Neoprene® Polychloroprene (CR) K Kalrez® Perfluoroelastomer (FFKM) HN Hydrogenated Nitrile (HNBR) EP NSF Approved EPDM (Ethylene Propylene) G Metallic Graphite Spiral Wound Seal I No O-Ring (Integral Seat "Ball to Cone") <i>Teflon®, Viton®, Kalrez® are Registered Trademarks from DuPont</i>	A Aluminum	O Orifice
MNPT 3,000 lb. Pipe	32	32	1 (1/4")		B Brass 464 or 360	D Dielectric-Insulated
SW 3,000 lb. Pipe	33	33	2 (3/8")		CS A105 Carbon Steel	H Handle Bar - Lug Nut
SW 3,000 lb. Tube	34	34	3 (1/2")		304 A182F304 Stainless	
BW 3,000 Pipe	35	35	4 (3/4")		304L A182F304L (low carbon) Stainless	
Sweat Copper Tube	36	36	5 (1")		316 A182F316 Stainless	
FNPT 6,000 lb. Pipe	61	61	6 (1 1/4")		316L A182F316L (low carbon) Stainless	
MNPT 6,000 Pipe	62	62	7 (1 1/2")		A20 Alloy 20 (formally known as carpenter steel-C20)	
SW 6,000 lb. Pipe	63	63	8 (2")		73 70/30 Copper Nickel	
SW 6,000 lb. Tube	64	64	9 (2 1/2")		91 90/10 Copper Nickel	
BW 6,000 lb. Pipe	65	65	10 (3")		H Hastalloy	
			11 (3 1/2")		I Inconel	
			12 (4")	M Monel 400		
				T Titanium		

HOW TO ORDER

The above chart contains all the information necessary to place an order. Use the appropriate codes in the manner shown below. A 3,000 lb. Female Threaded 1" Union with Viton O-ring and 316 Stainless Steel Ends is coded as follows:



When a size reduction or change in material is needed, simply enter the Tailpiece code and then the Threadpiece code separated by a slash as shown below. A dielectric 3,000 lb. FNPT Female x MNPT Male Pipe Thread Union, 3/4" FNPT Tailpiece, 1/2" MNPT Threadpiece, Teflon O-Ring, A105 Carbon Steel Tailpiece with Dielectric Coating, A182F304 Stainless Steel Threadpiece is coded as follows:



HC-0712



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