

VALVES & FITTINGS

AMERICAN ENGINEERING  
TRUSTED WORLDWIDE®

## Compromising conditions demand uncompromising quality.

For more than a century, CPV has crafted products that are recognized around the world for their unmatched strength and dependability. We build valves and fittings that last for thousands of life cycles.

Compact and mighty, our robust high-pressure solutions are designed to withstand the most demanding conditions across the industrial gas, petrochemical, and shipbuilding industries. Engineering firms spanning the globe partner with us because they know that with the quality of our design and manufacturing comes value and peace-of-mind.

For our clientele, a weak link in a critical chain is never a risk worth taking. It's why every US Naval Aircraft Carrier and Nuclear Submarine is outfitted with our products. In fact, we've even helped NASA put man and machine into space.

As we carry our legacy forward, it is with a continued eye toward innovation, design expertise and unparalleled customer service. And with a team renowned for seeing each new product through engineering challenge to solution, we continue to not only meet, but exceed, the demands of every client. No detail is too small. No standard too exacting. And no expectation unsurpassable.

CPV: The past, the present, and the future of valve and fitting technology.

For more information on how CPV Manufacturing can keep your application running smoothly, contact us at [sales@cpvmfg.com](mailto:sales@cpvmfg.com).

CPV Manufacturing  
503 School House Road  
Kennett Square, PA 19348  
215-387-9043

Revision 2.1  
December 2017

Monel® is a registered trademark of Special Metals Corporation.

Viton® is a registered trademark of The Chemours Company.

Teflon™ is a trademark of The Chemours Company.

VespeI® is a registered trademark of E.I. du Pont de Nemours and Company.

# Table of Contents

Introduction.....	6
Valves .....	7
Check Valves.....	11
Relief Valves .....	12
Fittings .....	14
Union Nuts.....	15
Tailpieces.....	16
Threadpieces.....	21
Tools & Maintenance .....	28
Valve Spacers.....	28
Valve Flush Plugs.....	28
Soft Goods Kits.....	29
Stem Seal Tools.....	30
OXNB Series O-SEAL® Oxygen Valves .....	32

O-SEAL®

Introduction.....	34
Valve .....	35
Fittings .....	37
Tube.....	38
Tailpieces .....	38
Union Assemblies .....	40
Elbow Assemblies .....	44
Tee Assemblies.....	46
Cross Assembly & Etc. ....	49
Pipe .....	50
Tailpiece .....	50

Mark VIII®

# Table of Contents

## G-Series®

Introduction.....	51
Valves.....	53

## FloMaster®

Introduction.....	55
Valves.....	57

## Instrument Valves

Introduction.....	60
Valves.....	61
Fittings.....	63

## Direct Weld Fittings

Introduction.....	64
Couplings.....	65
Elbow.....	66
Tee.....	67
Cross.....	67
Inserts.....	68
Adapter.....	72

# Table of Contents

Introduction.....	73
Engineering Data.....	74
Valves .....	76
Cast Iron and Bronze Body.....	76
Steel Body .....	77
Silent Air Check Valve .....	78
Threaded End Union Body.....	79
O-SEAL® Silent Check.....	80
G-Series® Silent Check.....	81

## Silent Check Valves

Introduction.....	82
Valves.....	83
Threaded End Valves.....	83
O-SEAL® Relief Valves.....	84

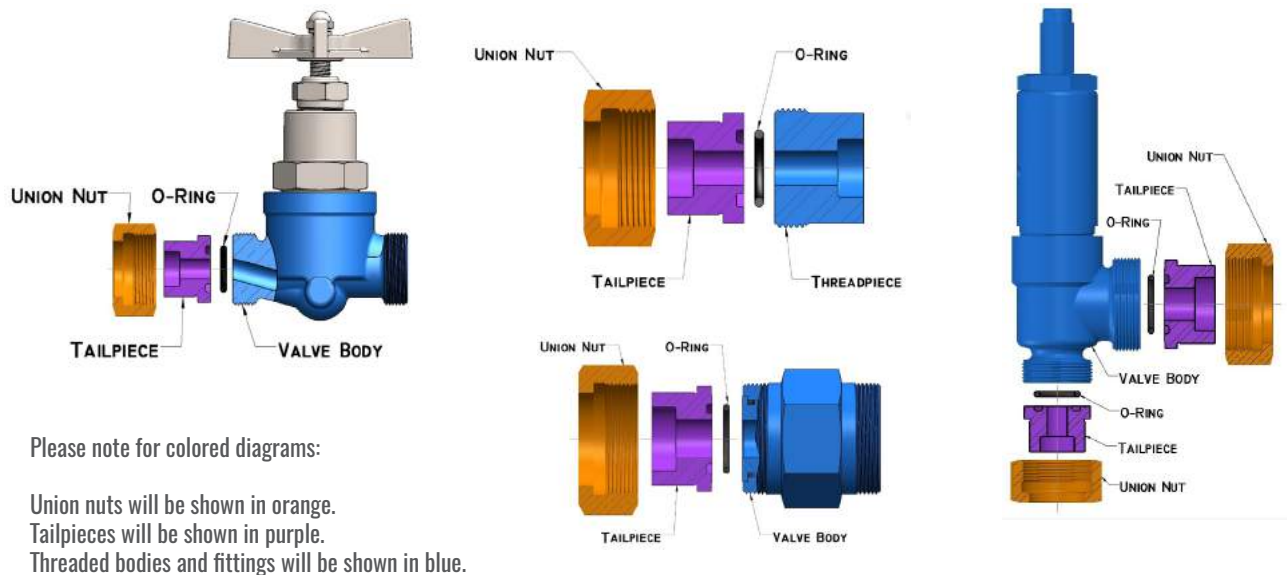
## Relief Valves

# O-SEAL<sup>®</sup> System

## O-SEAL<sup>®</sup> System

The CPV O-SEAL<sup>®</sup> System combines two key features: soft-sealing valve seats and O-SEAL<sup>®</sup> connections.

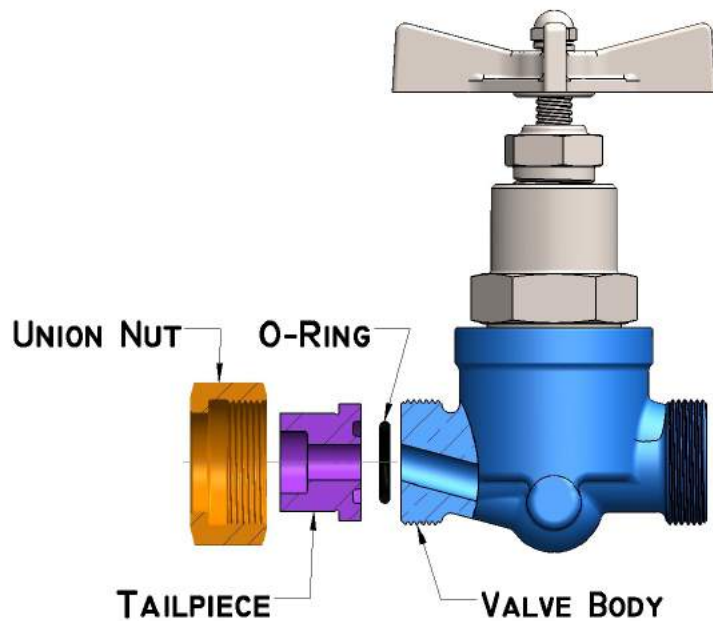
- Pressure rating up to 6000 PSI (413 bar); vacuum service rating optional
- All O-SEAL<sup>®</sup> valve types utilize soft seats
  - Bubble-tight performance, even with elusive gases like hydrogen and helium
  - Superior leak performance compared to metal-seated valves
  - Resistant to debris and seat damage
- The CPV O-SEAL<sup>®</sup> Connection is recognized worldwide for its durability, reliability, and high pressure leak-proof performance
  - O-Ring face seal (ORFS) union-type connection
  - Zero-clearance make/break/remake
  - Shock and vibration resistant
  - Easy to replace self-energizing O-Ring seal
- Full line of shutoff valves, needle valves, check valves, relief valves, unions, and fittings
- Mix-and-match tailpieces and threadpieces to create a variety of connections



# O-SEAL<sup>®</sup> Valves

CPV's flagship O-SEAL<sup>®</sup> Valves have been the industry's standard-bearer for bubble-tight performance and robust longevity in high pressure applications.

- 6000 PSI (413 bar) pressure rating; "-VC" vacuum service rating optional
- O-SEAL<sup>®</sup> Connections allow for zero-clearance installation or removal
- Easy to service or rebuild, with soft goods kits on page 29 or simply replace the entire cartridge while leaving the body installed in-place
- CRN: OC17716.2 for all sizes of 380, 480, 580, and 680 valves (inclusive of all available additional options)
- Actuated versions available on page 55
- Oxygen versions available on page 32
- Standard materials shown below: contact Sales for other materials such as Naval Brass, 300 Series Stainless Steel and Monel



Standard O-SEAL <sup>®</sup> Valve Materials
<b>Body &amp; Bonnet - High Tensile Bronze</b>
<b>Stem - 316/L Stainless Steel</b>
<b>Gland Nut - High Tensile Bronze</b>
<b>Retainer - Naval Brass</b>
<b>Sealing Disc - Nylon</b>
<b>Handle - Aluminum</b>



# O-SEAL® Valve Ordering Information

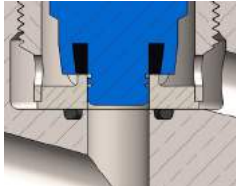






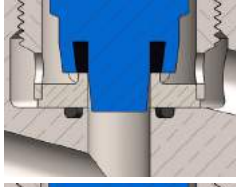






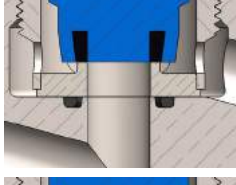






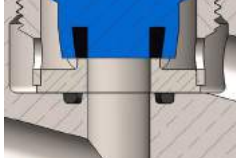






EXAMPLE **3 80 -5 -M -P -C**

Cartridge Type	Body Style	Valve Size	Additional Options	*Stem Seal & O-Ring Material
3 Shutoff	65 Cartridge Only	-0 1/8"	-M High Temperature Service (up to 400°F)	-B Polyurethane & Buna-N
4 Needle	70 Weld Globe	-1 1/4"	-P Panel Mount	-C all Viton®
5 Stop-check	71 Weld Angle	-2 3/8"	-VC Vacuum Service	-D all EPDM
6 Check	80 O-SEAL® Globe	-3 1/2"	-PB Port Below Seat	-G Polyurethane & Viton®
	81 O-SEAL® Angle	-4 3/4"	-PA Port Above Seat	
	82 O-SEAL® Offset	-5 1.00"	-VB Vent Below Seat	
		-6 1.25"	-VA Vent Above Seat	
		-7 1.50"		
		-8 2.00"		

\*Where two materials are listed; the first material is the Stem Seal and the second material is the O-Ring.

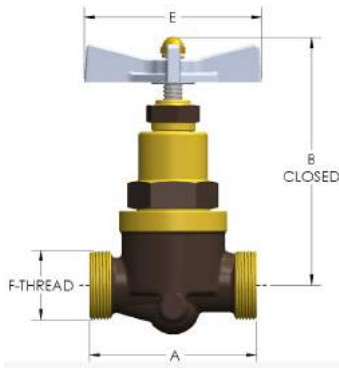
Standard temperature range of -15°F to 180°F (-26°C to 82°C) with Viton® O-Rings, Polyurethane Stem Seal, and Nylon Disc.

See Soft Goods Kit table on page 29 for temperature ranges of optional soft goods kits.

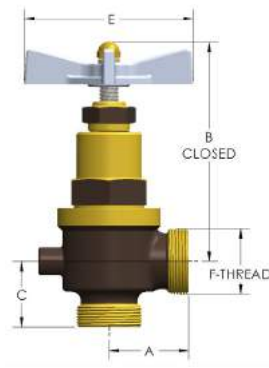
	Cartridge Only (x65)	Weld Globe Valve (x70)	Weld Angle Valve (x71)	Globe Valve (x80)	Angle Valve (x81)	Offset Valve (x82)
 <b>Shutoff (3xx)</b>	 365	 370	 371	 380	 381	 382
 <b>Needle (4xx)</b>	 465	 470	 471	 480	 481	 482
 <b>Stop-Check (5xx)</b>	 565	 570	 571	 580	 581	 582
 <b>Check (6xx)</b>	 665	 670	 671	 680	 681	 682



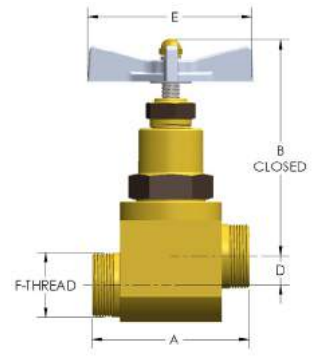
# O-SEAL® Valves



380 - Globe



381 - Angle

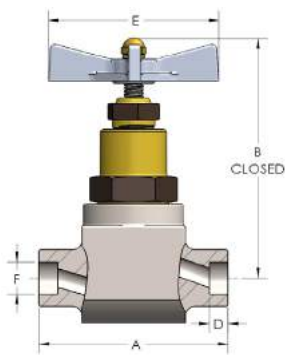


382 - Offset

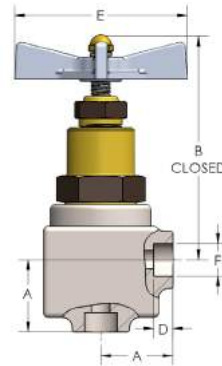
Pipe Size	Tube Size	Port Dia.	Globe			Angle				Offset				E	F-THREAD	Lift	Pressure Rating
			Part No.	A	B	Part No.	A	B	C	Part No.	A	B	D				
1/8	1/4	0.22	380-0	2.75	3.75	381-0	1.38	3.56	1.13	---	---	---	---	3.50	1.000"-14UNS	0.19	6000 PSI
1/4	3/8	0.31	380-1	3.38	4.06	381-1	1.69	3.81	1.50	382-1	3.38	4.06	0.50	3.50	1.188"-12UN	0.34	6000 PSI
3/8	1/2	0.44	380-2	4.00	4.88	381-2	2.00	4.50	1.63	382-2	4.00	4.63	0.63	3.50	1.375"-12UNF	0.44	6000 PSI
1/2	3/4	0.50	380-3	4.25	6.13	381-3	2.13	5.69	1.75	382-3	4.25	6.00	0.78	4.50	1.750"-12UN	0.53	6000 PSI
3/4	1.00	0.63	380-4	4.63	6.25	381-4	2.31	5.69	2.38	382-4	4.63	6.00	1.00	5.25	2.000"-12UN	0.56	6000 PSI
1.00	1.25	0.81	380-5	5.25	7.63	381-5	2.63	7.00	2.75	382-5	5.25	7.00	1.25	7.25	2.313"-12UNS	0.59	6000 PSI
1.25	1.50	1.00	380-6	6.50	7.63	381-6	3.25	6.88	3.00	382-6	6.50	7.00	1.44	9.00	2.750"-12UN	0.59	6000 PSI
1.50	2.00	1.25	380-7*	9.00	10.00	381-7	4.00	9.25	4.00	---	---	---	---	11.50	3.063"-12UNS	0.81	6000 PSI
2.00	2.50	1.56	380-8*	9.50	10.38	381-8	4.50	9.38	4.50	---	---	---	---	14.00	3.750"-12UN	0.84	6000 PSI

\*Centerline of the valve stem in 380-7 and 380-8 Globe Valves is angled at 13° from vertical. Drawing upon request.

Dimensions also valid for Needle (4xx) and Stop-Check (5xx) valves.



370 - Welded Globe



371 - Welded Angle

Pipe Size	*Tube Size	Port Dia.	Globe			Angle			D	E	F Pipe Size	Lift	Pressure Rating
			Part No.*	A	B	Part No.*	A	B					
1/8	1/4	0.22	370-0	3.25	3.75	371-0	1.38	3.56	0.38	3.50	0.420	0.19	6000 PSI
1/4	3/8	0.31	370-1	3.75	4.06	371-1	1.50	3.81	0.38	3.50	0.555	0.34	6000 PSI
3/8	1/2	0.44	370-2	4.75	4.88	371-2	1.75	4.50	0.44	3.50	0.690	0.44	6000 PSI
1/2	3/4	0.50	370-3	5.00	6.13	371-3	1.88	5.69	0.50	4.50	0.855	0.53	6000 PSI
3/4	1.00	0.63	370-4	5.38	6.25	371-4	2.31	5.69	0.56	5.25	1.065	0.56	6000 PSI
1.00	1.25	0.81	370-5	6.75	7.63	371-5	2.63	7.00	0.63	7.25	1.330	0.59	6000 PSI

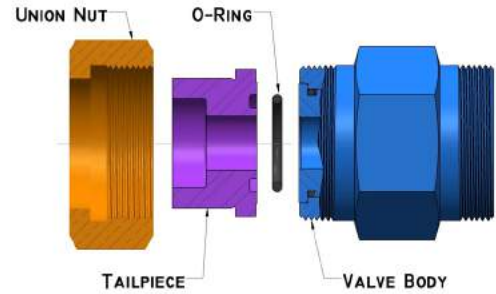
\* For ordering 370 or 371 valves for **Tube Size** - please contact customer service.

Dimensions also valid for Needle (4xx) and Stop-Check (5xx) valves.

**This page intentionally left blank**

# O-SEAL® Check Valves

- All O-SEAL® check valves are spring-actuated, effectively eliminating pressure surges and reverse flow associated with swing checks
- All O-SEAL® check valves offer the same body styles and bubble-tight seal found in O-SEAL® hand valves
- Check valve cartridges can be swapped into existing shutoff, needle, or stop-check bodies
- The 123A model features a compact in-line body and bubble-tight seal
- Can be installed in any position, including vertical down and diagonal
- Working pressure up to 6000 PSI (413 bar)
- O-SEAL® check valves come standard with Viton® O-Rings (the 680 model features a Nylon Disc)
- Standard temperature ranges of -15°F to 400°F (-26°C to 204°C) for the 123A model, and -15°F to 275°F (-26°C to 135°C) for the 680 model\*\*



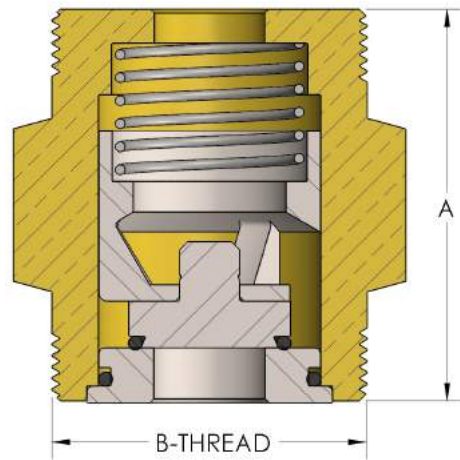
\*\*See O-Ring Temperature Ratings table on page 29 for temperature ranges of optional O-Ring materials.

## 123A - In-Line Check

Pipe Size	Tube Size	Port Dia.	In-Line Check			Pressure Rating
			Part No.	A	B-THREAD	
1/8	1/4	0.44	*	1.88	1.375"-12UNF	6000 PSI
1/4	3/8	0.44	*	1.88	1.375"-12UNF	6000 PSI
3/8	1/2	0.44	123A-2	1.88	1.375"-12UNF	6000 PSI
1/2	3/4	0.50	123A-3	2.00	1.750"-12UN	6000 PSI
3/4	1.00	0.63	123A-4	2.50	2.000"-12UN	6000 PSI
1.00	1.25	0.81	123A-5	2.88	2.313"-12UNS	6000 PSI
1.25	1.50	1.13	123A-6	3.13	2.750"-12UN	6000 PSI
1.50	2.00	1.31	123A-7	3.50	3.063"-12UNS	6000 PSI
2.00	2.50	1.69	123A-8	4.00	3.750"-12UN	6000 PSI

Comes with standard High Tensile Bronze Body  
For other body material options, please contact customer service.

\*When a 1/8" or 1/4" Pipe Size In-Line Check Valve is required, order Part No. 123A-2 with appropriate reducing tailpieces for 1/8" or 1/4" Pipe Size.



123A - In-line

## 680 - Globe Check

CRN: OC17716.2

Pipe Size	Tube Size	Port Dia.	Globe Check			Pressure Rating	
			Part No.	A	B		C-THREAD
1/8	1/4	0.22	680-0	2.75	1.50	1.000"-14UNS	6000 PSI
1/4	3/8	0.31	680-1	3.38	2.00	1.188"-12UN	6000 PSI
3/8	1/2	0.44	680-2	4.00	2.38	1.375"-12UNF	6000 PSI
1/2	3/4	0.50	680-3	4.25	2.69	1.750"-12UN	6000 PSI
3/4	1.00	0.63	680-4	4.63	2.81	2.000"-12UN	6000 PSI
1.00	1.25	0.81	680-5	5.25	3.25	2.313"-12UNS	6000 PSI
1.25	1.50	1.00	680-6	6.50	3.81	2.750"-12UN	6000 PSI
1.50	2.00	1.25	680-7	9.00	6.00	3.063"-12UNS	6000 PSI
2.00	2.50	1.56	680-8	9.50	6.75	3.750"-12UN	6000 PSI

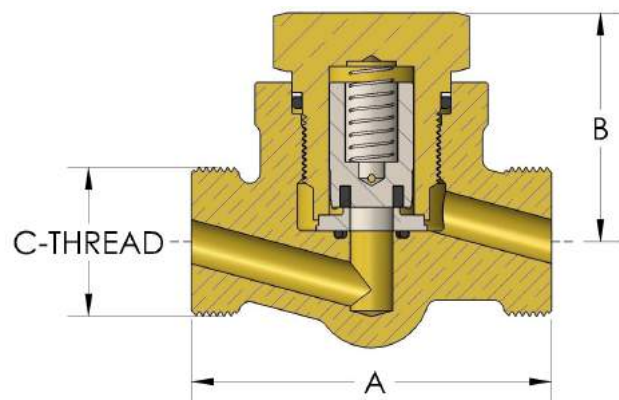
NOTE:

To order a check valve with a different body, substitute the applicable 2-digit end code to create a part number.

For example:

- Angle: 681
- Offset: 682
- Weld Globe: 670
- Weld Angle: 671

Please reference page 9 to review Dimension "A" for the various body styles; all standard for hand and check valves.



680 - Globe

# O-SEAL® Relief Valves

## Application

- High pressure hydraulic systems
- High pressure pumping systems
- High and low pressure tanks
- High pressure piping systems
- High pressure test systems

## Features

- Wide range of options to relieve high or over pressure
- Sensitive spring adjustment permits accurate control of the blowdown pressure setting
- Guided lift and energized poppet seal design assure positive, leak-proof reseating every time
- O-SEAL® union connections provide exceptional adaptability
- Pressure ratings from vacuum up to 6000 PSI (413 bar)
- Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Rings\*
- Soft seated for bubble-tight performance

\*See O-Ring Temperature Ratings table on page 29 for temperature ranges of optional O-Ring materials.

## Models

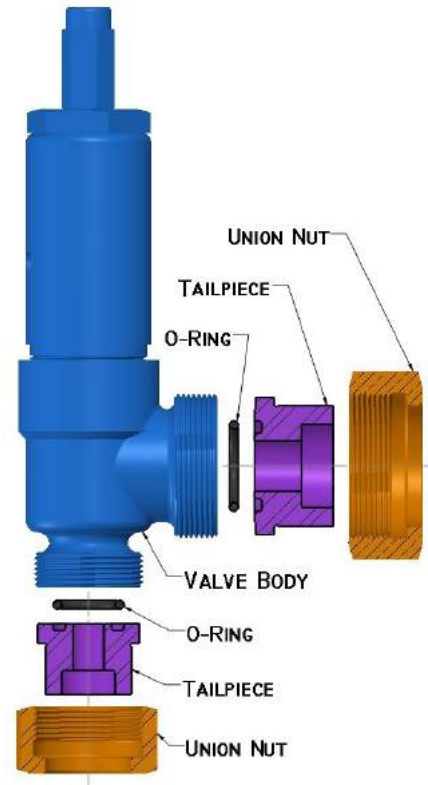
- 157A offers a full-size body with increased flow capacity
- 158 uses a compact body where clearance is a concern

O-SEAL® Relief Valve Materials	
Body & Sleeve -	High Tensile Bronze
Poppet -	17-4 PH Stainless Steel
Seat & Seat Retainer -	316/L Stainless Steel
Bonnet & Cap -	Naval Brass
Spring Housing -	304/L Stainless Steel
Spring -	Pretempered Alloy Steel

Valve Type	Orifice Size	*Set Pressure Requirement
158 -3 x -5 O-SEAL® Thread	- 0.156	- _____ PSIG
157A -3 x -6 O-SEAL® Thread	- 0.219	
	- 0.313	
	- 0.438	
	** - 0.500**	

\*See chart on page 13 for set pressure range per orifice size.

\*\*This orifice size is only available with Valve Type 158.



# O-SEAL® Relief Valves

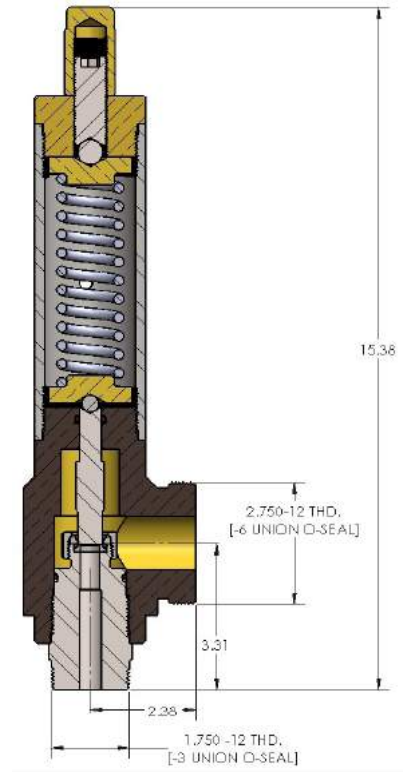
## Part No. 157A Relief Valve - ESTIMATED CAPACITIES

Set Press. (PSI)	Air Capacities - SCFM* (10% accumulation)				Water Capacities - GPM* (10% accumulation)			
	Orifice Dia. - in				Orifice Dia. - in			
	0.156	0.219	0.313	0.438	0.156	0.219	0.313	0.438
30	----	----	----	116	----	----	----	9
100	----	----	154	302	----	----	9	17
200	----	142	291	569	----	4	12	24
300	106	209	427	836	3	6	15	29
400	140	276	563	1103	4	7	17	33
500	174	342	699	1370	4	8	19	37
1,000	343	676	1381	2704	6	13	27	53
1,500	512	1009	2062	4037	7	13	33	65
2,000	681	1343	2743	5371	8	16	38	75
2,500	851	1676	3424	6705	9	19	43	83
3,000	1020	2010	4105	8039	11	21	47	91
3,500	1189	2343	4787	----	12	23	50	----
4,000	1358	2677	----	----	13	26	----	----
5,000	1697	3344	----	----	15	29	----	----
6,000	2035	4011	----	----	16	32	----	----

\*Discharge capacities are computed for set pressure plus accumulation (or overpressure) shown in tables with air and water at ambient conditions.

Notes:

- Formulas used to calculate capacities are derived from API Recommended Practice 520 and ASTM F1508.
- Relief Valve Standards:  
Set Pressure Tolerance:  $\pm 2\%$   
Reseat (Blowdown) Pressure Tolerance:  $-7\%$



157A

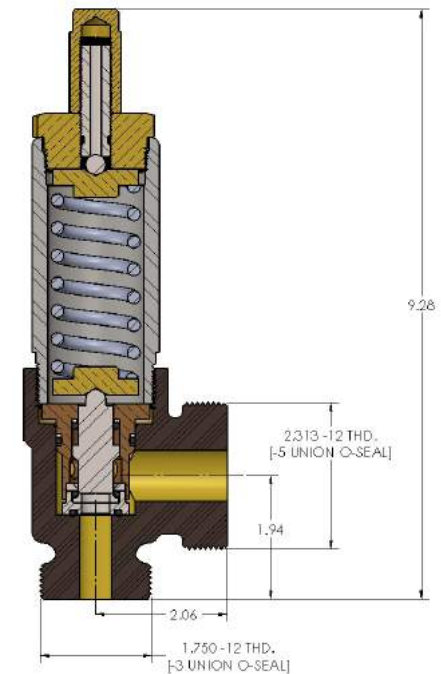
## Part No. 158 Relief Valve - ESTIMATED CAPACITIES

Set Press. (PSI)	Air Capacities - SCFM* (10% accumulation)					Water Capacities - GPM* (10% accumulation)				
	Orifice Dia. - in					Orifice Dia. - in				
	0.156	0.219	0.313	0.438	(158A) 0.500	0.156	0.219	0.313	0.438	(158A) 0.500
30	----	22	44	86	112	----	1	2	3	4
100	----	56	115	225	294	----	1	3	6	8
200	54	106	217	424	553	1	2	4	8	11
300	79	156	318	623	812	1	3	5	10	13
400	104	205	420	822	1071	2	3	6	12	16
500	129	255	521	1020	1330	2	3	7	13	17
1,000	256	504	1029	2014	2625	2	5	10	19	25
1,500	382	752	1536	3008	3920	3	6	12	23	30
2,000	508	1001	2044	4002	5215	3	7	14	27	35
2,500	634	1249	2131	----	----	4	7	15	----	----
3,000	760	1497	3062	----	----	4	8	17	----	----
4,000	1012	1994	3993	----	----	5	9	19	----	----
5,000	1264	2491	----	----	----	5	11	----	----	----
6,000	1516	2988	----	----	----	6	12	----	----	----

\*Discharge capacities are computed for set pressure plus accumulation (or overpressure) shown in tables with air and water at ambient conditions.

Notes:

- Formulas used to calculate capacities are derived from API Recommended Practice 520 and ASTM F1508.
- Relief Valve Standards:  
Set Pressure Tolerance:  $\pm 2\%$   
Reseat (Blowdown) Pressure Tolerance:  $-7\%$



158



# O-SEAL® Fittings

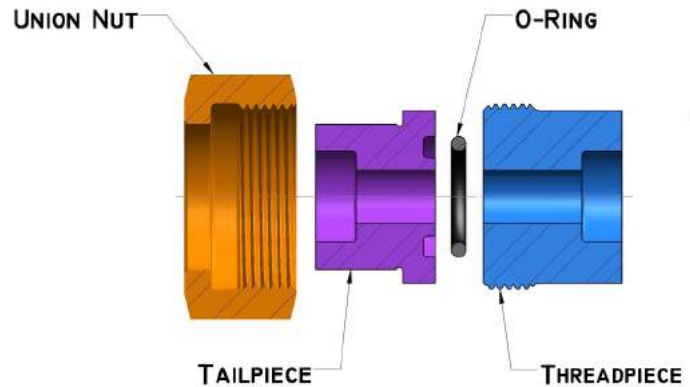
## Application

- Piping systems
  - Aerospace
  - Compressed Gas
  - Drilling
  - Petrochemical
  - Refining
  - Shipbuilding

## Features

- Most effective and reliable connection for controlling high pressure liquids and gases
- Unique union O-Ring face seal design ensures maximum reliability and optimum flexibility for all your system needs
- Pressure ratings up to 6000 PSI (413 bar)
- Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Ring\*
- Line size options:
  - 1/8" to 2.50" Pipe size
  - 1/4" to 3.00" Tube size
- Flexible break-remake self-sealing connections
- Low torque assembly
- Various connection orientations, types, and materials

\*See O-Ring Temperature Ratings table on page 29 for temperature ranges of optional O-Ring materials.



Common O-SEAL® Fitting Materials	Ordering Data (for end of Part No.)
316/L Stainless Steel	<b>-SS316L</b>
Monel®	<b>-M</b>
Nickel-Aluminum-Bronze	<b>-NAB</b>
Carbon Steel	<b>-S</b>
Naval Brass	<b>-BR</b>
Copper-Nickel 70-30	<b>-CUNI</b>
K-Monel® (K-500)	<b>-K-MONEL</b>

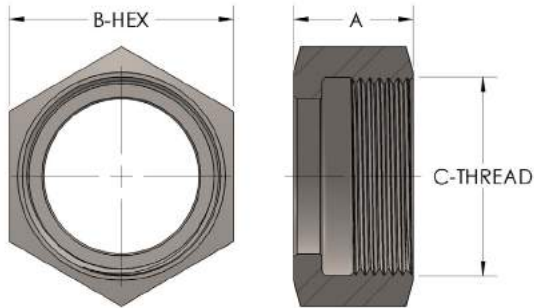


# O-SEAL® Union Nuts

EXAMPLE

<b>Union Nut</b>	<b>50N</b>	<b>-3</b>	<b>NAB</b>
------------------	------------	-----------	------------

## 50N - Union Nut



Material Options Available: -SS316L, -M, -NAB, -S, -BR

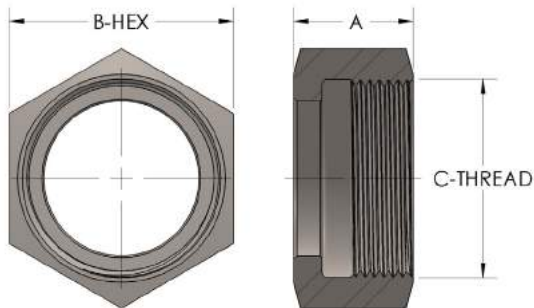
-S 50N Union Nut in carbon steel comes standard with electro-zinc plating to resist corrosion.

Pipe Size	Tube Size	Union Nut			Pressure Ratings					
		Part No.	A	B-HEX	C-THREAD	-SS316L	-M	-NAB	-S	-BR
1/8	1/4	50N-0	0.75	1.19	1.000"-14UNS	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/4	3/8	50N-1	1.00	1.38	1.188"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/8	1/2	50N-2	1.06	1.63	1.375"-12UNF	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/2	3/4	50N-3	1.06	2.00	1.750"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/4	1.00	50N-4	1.06	2.25	2.000"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.00	1.25	50N-5	1.19	2.63	2.313"-12UNS	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.25	1.50	50N-6	1.25	3.00	2.750"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*
1.50	2.00	50N-7	1.50	3.50	3.063"-12UNS	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*
2.00	2.50	50N-8	1.50	4.13	3.750"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*
2.50	3.00	50N-9	1.88	5.13	4.500"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*

\*Not available in size and material.

## 884P8 - Union Nut IAW NSSC 803-1385884

CRN: 0A16860.2



Material Options Available: -SS316L, -NAB, -K-MONEL

Pipe Size	Tube Size	Union Nut - IAW NSSC 803-1385884 Rev. N			Pressure Ratings			
		Part No.	A	B-HEX	C-THREAD	-SS316L	-NAB	-K-MONEL
1/8	1/4	884P8-0	0.75	1.19	1.000"-14UNS	6000 PSI	6000 PSI	6000 PSI
1/4	3/8	884P8-1	1.00	1.38	1.188"-12UN	6000 PSI	6000 PSI	6000 PSI
3/8	1/2	884P8-2	1.06	1.63	1.375"-12UNF	6000 PSI	6000 PSI	6000 PSI
1/2	3/4	884P8-3	1.06	2.00	1.750"-12UN	6000 PSI	6000 PSI	6000 PSI
3/4	1.00	884P8-4	1.13	2.38	2.000"-12UN	6000 PSI	6000 PSI	6000 PSI
1.00	1.25	884P8-5	1.25	2.75	2.313"-12UNS	6000 PSI	6000 PSI	6000 PSI
1.25	1.50	884P8-6	1.25	3.25	2.750"-12UN	6000 PSI	6000 PSI	6000 PSI
1.50	2.00	884P8-7	1.50	3.75	3.063"-12UNS	6000 PSI	6000 PSI	6000 PSI
2.00	2.50	884P8-8	1.50	4.38	3.750"-12UN	6000 PSI	6000 PSI	6000 PSI
2.50	3.00	884P8-9	1.88	5.13	4.500"-12UN	6000 PSI	6000 PSI	6000 PSI

# O-SEAL® Tailpieces

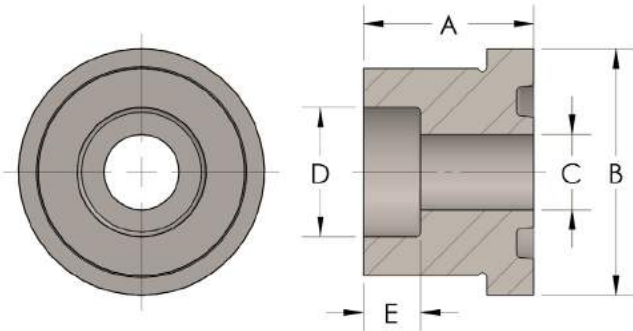
Tailpieces come standard with Viton® O-Ring, unless otherwise specified.

EXAMPLE

**Tailpiece 51R -3 -CUNI**

## 51R - Socketweld Pipe

CRN: 0A16860.2

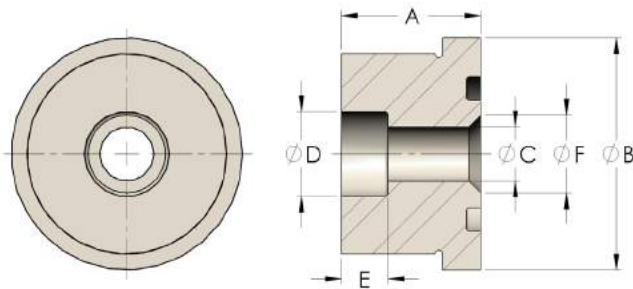


Material Options Available: -SS316L, -M, -S, -CUNI

Pipe Size	Socketweld Pipe Tailpiece						Pressure Ratings			
	Part No.	A	B	C	D	E	-SS316L	-M	-S	-CUNI
1/8	51R-0	0.69	0.91	0.22	0.420	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/4	51R-1	1.06	1.06	0.31	0.555	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	51R-2	1.13	1.25	0.44	0.690	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/2	51R-3	1.13	1.63	0.50	0.855	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	51R-4	1.13	1.88	0.63	1.065	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.00	51R-5	1.25	2.19	0.81	1.330	0.50	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.25	51R-6	1.38	2.63	1.19	1.675	0.50	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.50	51R-7	1.63	2.94	1.38	1.915	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
2.00	51R-8	1.75	3.63	1.75	2.406	0.63	4500 PSI	6000 PSI	4500 PSI	3000 PSI
2.50	51R-9	2.00	4.31	2.13	2.906	1.00	4500 PSI	6000 PSI	4500 PSI	3000 PSI

## 51R - Socketweld Pipe Reducer

CRN: 0A16860.2



Material Options Available: -SS316L, -M, -S, -CUNI

Pipe Size	Socketweld Pipe Reducing Tailpiece							Pressure Ratings			
	Part No.	A	B	C	D	E	F	-SS316L	-M	-S	-CUNI
1/8	51R-1-0	1.06	1.06	0.22	0.420	0.38	0.31	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/8	51R-2-0	1.13	1.25	0.22	0.420	0.38	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/8	51R-3-0	1.13	1.63	0.22	0.420	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51R-2-1	1.13	1.25	0.31	0.555	0.38	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51R-3-1	1.13	1.63	0.31	0.555	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51R-4-1	1.13	1.88	0.31	0.555	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51R-3-2	1.13	1.63	0.44	0.690	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51R-4-2	1.13	1.88	0.44	0.690	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51R-5-2	1.25	2.19	0.44	0.690	0.38	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51R-4-3	1.13	1.88	0.50	0.855	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51R-5-3	1.25	2.19	0.50	0.855	0.38	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51R-6-3	1.38	2.63	0.50	0.855	0.38	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51R-5-4	1.25	2.19	0.63	1.065	0.50	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51R-6-4	1.38	2.63	0.63	1.065	0.50	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51R-7-4	1.63	2.94	0.63	1.065	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51R-6-5	1.38	2.63	0.81	1.330	0.50	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51R-7-5	1.63	2.94	0.81	1.330	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51R-8-5	1.75	3.63	0.81	1.330	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	51R-7-6	1.63	2.94	1.19	1.675	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	51R-8-6	1.75	3.63	1.19	1.675	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	51R-9-6	2.00	4.31	1.19	1.675	0.50	2.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	51R-8-7	1.75	3.63	1.38	1.915	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.50	51R-9-7	2.00	4.31	1.38	1.915	0.50	2.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	51R-9-8	2.00	4.31	1.75	2.406	0.63	2.13	6000 PSI	6000 PSI	6000 PSI	4500 PSI

# O-SEAL® Tailpieces

EXAMPLE

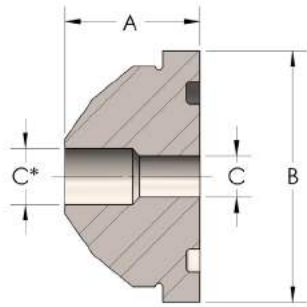
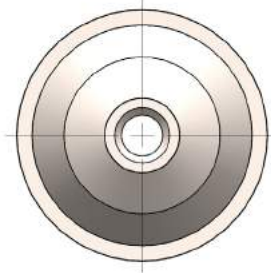
Tailpiece

62R

-4

-SS316L

## 58R - Butt weld Pipe



Material Options Available: -SS316L, -M, -S, -CUNI

Pipe Size	Butt weld Pipe Tailpiece				
	Part No.	A	B	C	C*
1/4	58R-1	1.06	1.06	0.31	*
3/8	58R-2	1.13	1.25	0.44	*
1/2	58R-3	1.13	1.63	0.50	*
3/4	58R-4	1.13	1.88	0.63	*
1.00	58R-5	1.25	2.19	0.81	*
1.25	58R-6	1.38	2.63	1.19	*
1.50	58R-7	1.63	2.94	1.38	*
2.00	58R-8	1.75	3.63	1.75	*
2.50	58R-9	2.00	4.31	2.13	*

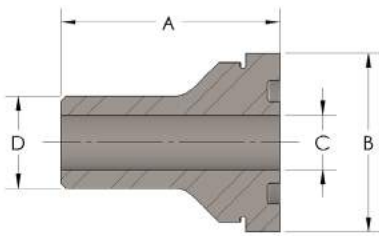
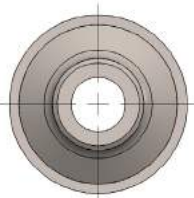
\*C, bore corresponds to pipe schedule.

Please specify pipe schedule when ordering.

Pressure rating dependent on pipe schedule.

Example: Part No.: 58R-3-SCH160-SS316L

## 62R - Male Pipe Weld



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Male Pipe Weld Tailpiece				Pressure Ratings					
	Part No.	A	B	C	D	-SS316L	-M	-S	-BR	-CUNI
1/8	62R-0	1.38	0.91	0.22	0.405	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/4	62R-1	1.50	1.06	0.31	0.540	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	62R-2	1.75	1.25	0.44	0.675	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1/2	62R-3	2.00	1.63	0.50	0.840	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	62R-4	2.13	1.88	0.63	1.050	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.00	62R-5	2.25	2.19	0.81	1.315	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	62R-6	2.50	2.63	1.13	1.660	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.50	62R-7	2.75	2.94	1.31	1.900	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
2.00	62R-8	3.13	3.63	1.63	2.375	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI

# O-SEAL<sup>®</sup> Tailpieces

EXAMPLE

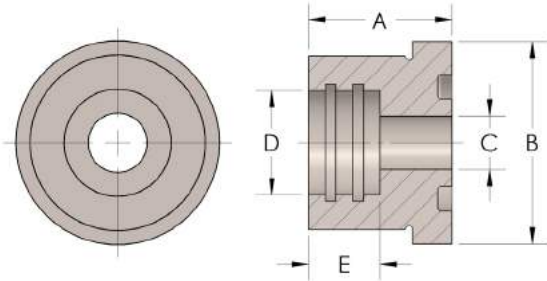
**Tailpiece**

**48R**

**-3**

**-BR**

## 52R - Socket Braze Pipe



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Socket Braze Pipe Tailpiece					Pressure Ratings					
	Part No.	A	B	C	D	E	-SS316L	-M	-S	-BR	-CUNI
1/8	52R-0	0.69	0.91	0.22	0.408	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/4	52R-1	1.06	1.06	0.31	0.543	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	52R-2	1.13	1.25	0.44	0.678	0.47	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1/2	52R-3	1.13	1.63	0.50	0.843	0.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	52R-4	1.13	1.88	0.63	1.053	0.69	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1.00	52R-5	1.25	2.19	0.81	1.318	0.81	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.25	52R-6	1.38	2.63	1.19	1.663	0.94	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.50	52R-7	1.63	2.94	1.38	1.903	1.06	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.00	52R-8	1.75	3.63	1.75	2.378	1.25	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.50	52R-9	2.25	4.31	2.13	2.878	1.31	6000 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

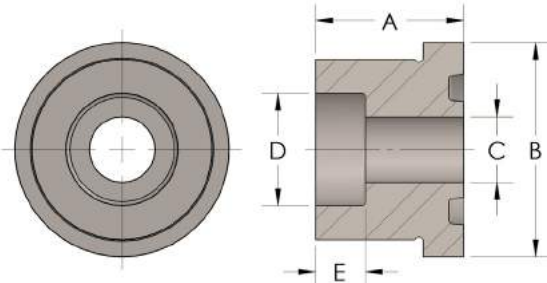
Reducing Fittings are available. Please contact customer service.

Preinserted silver brazing ring(s) are normally furnished. When ordering, state grade desired.

Number of braze grooves varies with size: 1/8"-1/2": 2 grooves; 3/4"-2.50": 1 groove.

## 48R - Socketweld Tube

CRN: 0A16860.2

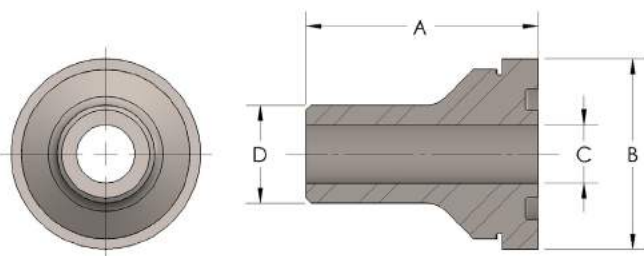


Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Tube Size	Socketweld Tube Tailpiece					Pressure Ratings					
	Part No.	A	B	C	D	E	-SS316L	-M	-S	-BR	-CUNI
1/4	48R-0	0.69	0.91	0.19	0.25	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	48R-1	1.06	1.06	0.31	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	48R-2	1.13	1.25	0.44	0.50	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	48R-3	1.13	1.63	0.50	0.75	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	48R-4	1.13	1.88	0.63	1.00	0.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	48R-5	1.25	2.19	0.81	1.25	0.63	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1.50	48R-6	1.38	2.63	1.19	1.50	0.69	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
2.00	48R-7	1.63	2.94	1.38	2.00	0.75	4500 PSI	6000 PSI	4500 PSI	3000 PSI	2500 PSI
2.50	48R-8	1.75	3.63	1.75	2.50	0.88	4500 PSI	6000 PSI	3000 PSI	3000 PSI	2500 PSI
3.00	48R-9	2.00	4.31	2.13	3.00	1.00	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

Reducing Fittings are available. Please contact customer service.

## 63R - Male Tube Weld



Material Options Available: -SS316L, -M, -S, -CUNI

Tube Size	Male Tube Weld Tailpiece				Pressure Ratings				
	Part No.	A	B	C	D	-SS316L	-M	-S	-CUNI
1/4	63R-0	1.38	0.91	0.17	0.250	6000 PSI	6000 PSI	4500 PSI	3000 PSI
3/8	63R-1	1.50	1.06	0.25	0.375	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/2	63R-2	1.75	1.25	0.34	0.500	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/4	63R-3	2.00	1.63	0.50	0.750	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.00	63R-4	2.13	1.88	0.63	1.000	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	63R-5	2.25	2.19	0.81	1.250	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.50	63R-6	2.50	2.63	1.00	1.500	6000 PSI	6000 PSI	6000 PSI	3000 PSI
2.00	63R-7	2.75	2.94	1.38	2.000	6000 PSI	6000 PSI	6000 PSI	3000 PSI
2.50	63R-8	3.13	3.63	1.75	2.500	6000 PSI	6000 PSI	6000 PSI	3000 PSI

# O-SEAL® Tailpieces

EXAMPLE

Tailpiece

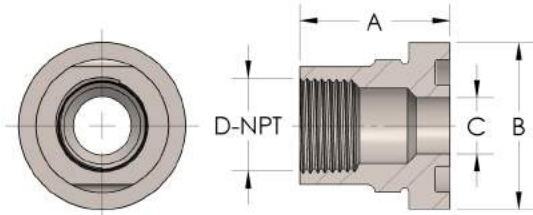
53R

-5

-M

## 53R - Female Pipe Thread

CRN: 0A16860.2



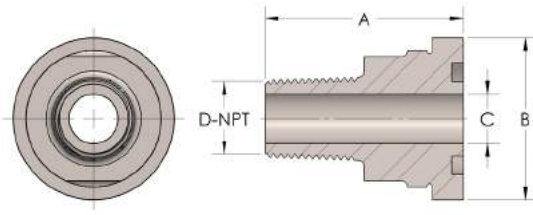
Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Female Pipe Thread Tailpiece					Pressure Ratings				
	Part No.	A	B	C	D-NPT	-SS316L	-M	-S	-BR	-CUNI
1/8	53R-0	0.88	0.91	0.22	1/8"-27	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1/4	53R-1	1.06	1.06	0.31	1/4"-18	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
3/8	53R-2	1.13	1.25	0.44	3/8"-18	4500 PSI	6000 PSI	4500 PSI	3000 PSI	2500 PSI
1/2	53R-3	1.31	1.63	0.50	1/2"-14	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
3/4	53R-4	1.50	1.88	0.63	3/4"-14	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.00	53R-5	1.69	2.19	0.81	1.000"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
1.25	53R-6	1.69	2.63	1.19	1.250"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	2500 PSI
1.50	53R-7	1.75	2.94	1.38	1.500"-11.5	3000 PSI	3000 PSI	3000 PSI	2000 PSI	1500 PSI
2.00	53R-8	1.75	3.63	1.75	2.000"-11.5	2500 PSI	3000 PSI	2500 PSI	2000 PSI	1500 PSI
2.50	53R-9	2.00	4.31	2.13	2.500"-8	3000 PSI	4500 PSI	3000 PSI	2500 PSI	2000 PSI

Reducing Fittings are available. Please contact customer service.

## 54R - Male Pipe Thread

CRN: 0A16860.2

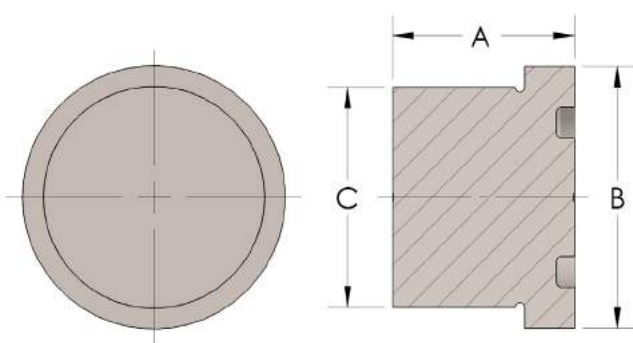


Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Male Pipe Thread Tailpiece					Pressure Ratings				
	Part No.	A	B	C	D-NPT	-SS316L	-M	-S	-BR	-CUNI
1/8	54R-0	1.50	0.91	0.22	1/8"-27	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1/4	54R-1	1.63	1.06	0.31	1/4"-18	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
3/8	54R-2	1.69	1.25	0.44	3/8"-18	4500 PSI	6000 PSI	3000 PSI	3000 PSI	2500 PSI
1/2	54R-3	2.00	1.63	0.50	1/2"-14	6000 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
3/4	54R-4	2.06	1.88	0.63	3/4"-14	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.00	54R-5	2.25	2.19	0.81	1.000"-11.5	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.25	54R-6	2.56	2.63	1.13	1.250"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
1.50	54R-7	2.88	2.94	1.31	1.500"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.00	54R-8	2.88	3.63	1.63	2.000"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.50	54R-9	3.50	4.31	2.13	2.500"-8	2000 PSI	3000 PSI	2000 PSI	1500 PSI	1000 PSI

Reducing Fittings are available. Please contact customer service.

## 104R - Blank



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Blank Tailpiece				Pressure Ratings				
	Part No.	A	B	C	-SS316L	-M	-S	-BR	-CUNI
1/8	104R-0	0.69	0.91	0.68	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	104R-1	1.06	1.06	0.87	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	104R-2	1.13	1.25	1.00	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	104R-3	1.13	1.63	1.37	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	104R-4	1.13	1.88	1.62	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	104R-5	1.25	2.19	1.93	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	104R-6	1.38	2.63	2.37	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	104R-7	1.63	2.94	2.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	104R-8	1.75	3.63	3.18	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.50	104R-9	2.00	4.31	3.94	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI



# O-SEAL® Tailpieces

EXAMPLE

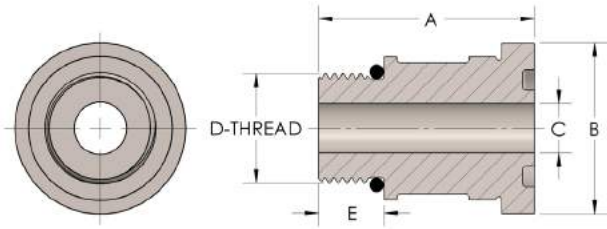
Tailpiece

64R

-2-1

-SS316L

## 59R - Male Straight Thread

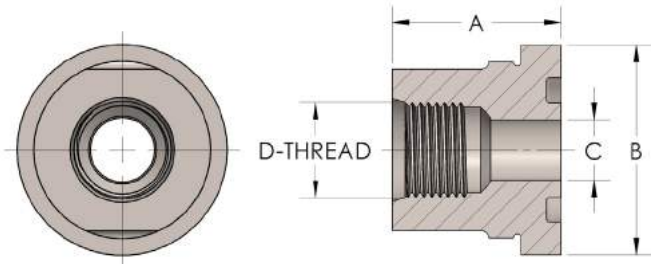


Material Options Available: -SS316L, -M, -S

Tube Size	SAE Dash Size	Male Straight Thread Tailpiece					Pressure Ratings			
		Part No.	A	B	C	D-THREAD	E	-SS316L	-M	-S
1/4	2	59R-0	1.31	0.91	0.17	7/16"-20UNF	0.41	6000 PSI	6000 PSI	6000 PSI
3/8	6	59R-1	1.50	1.06	0.30	9/16"-18UNF	0.43	6000 PSI	6000 PSI	6000 PSI
1/2	8	59R-2	1.75	1.25	0.39	3/4"-16UNF	0.47	6000 PSI	6000 PSI	6000 PSI
3/4	12	59R-3	2.06	1.63	0.50	1.063"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI
1.00	16	59R-4	2.13	1.88	0.63	1.313"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI
1.25	20	59R-5	2.25	2.19	0.81	1.625"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI
1.50	24	59R-6	2.50	2.63	1.19	1.875"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI

Reducing Fittings are available. Please contact customer service.

## 64R - Female Straight Thread



Material Options Available: -SS316L, -M, -S

Tube Size	SAE Dash Size	Female Straight Thread Tailpiece					Pressure Ratings		
		Part No.	A	B	C	D-THREAD	-SS316L	-M	-S
1/4	2	64R-1-0	1.06	1.06	0.31	7/16"-20UNF	6000 PSI	6000 PSI	6000 PSI
3/8	6	64R-2-1	1.13	1.25	0.44	9/16"-18UNF	6000 PSI	6000 PSI	6000 PSI
1/2	8	64R-3-2	1.31	1.63	0.50	3/4"-16UNF	6000 PSI	6000 PSI	6000 PSI
3/4	12	64R-4-3	1.50	1.88	0.63	1.063"-12UN	6000 PSI	6000 PSI	6000 PSI
1.00	16	64R-5-4	1.69	2.19	0.81	1.313"-12UN	6000 PSI	6000 PSI	4500 PSI
1.25	20	64R-6-5	1.69	2.63	1.19	1.625"-12UN	4500 PSI	6000 PSI	4500 PSI
1.50	24	64R-7-6	1.63	2.94	1.38	1.875"-12UN	4500 PSI	6000 PSI	3000 PSI
2.00	32	64R-8-7	1.75	3.63	1.75	2.500"-12UN	3000 PSI	3000 PSI	3000 PSI

Further Reducing Fittings are available. Please contact customer service.



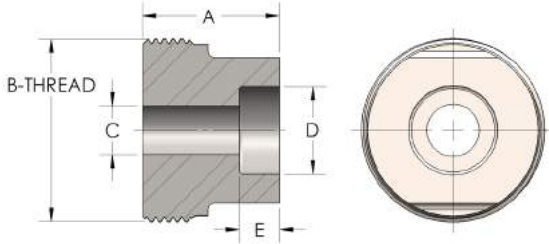
# O-SEAL® Threadpieces

EXAMPLE

**Threadpiece 51T -5-3 -SS316L**

## 51T - Socketweld Pipe

CRN: 0A16860.2

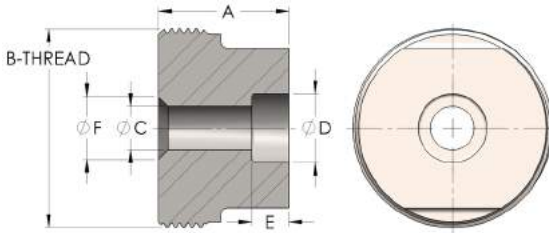


Material Options Available: -SS316L, -M, -S, -CUNI

Pipe Size	Socketweld Pipe Threadpiece						Pressure Ratings			
	Part No.	A	B-THREAD	C	D	E	-SS316L	-M	-S	-CUNI
1/8	51T-0	0.88	1.000"-14UNS	0.22	0.420	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/4	51T-1	1.19	1.188"-12UN	0.31	0.555	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	51T-2	1.25	1.375"-12UNF	0.44	0.690	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/2	51T-3	1.31	1.750"-12UN	0.50	0.855	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	51T-4	1.31	2.000"-12UN	0.63	1.065	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.00	51T-5	1.56	2.313"-12UNS	0.81	1.330	0.50	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.25	51T-6	1.69	2.750"-12UN	1.19	1.675	0.50	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.50	51T-7	2.00	3.063"-12UNS	1.38	1.915	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
2.00	51T-8	2.13	3.750"-12UN	1.75	2.406	0.63	4500 PSI	6000 PSI	4500 PSI	3000 PSI
2.50	51T-9	2.56	4.500"-12UN	2.13	2.906	1.00	4500 PSI	6000 PSI	4500 PSI	3000 PSI

## 51T - Socketweld Pipe Reducer

CRN: 0A16860.2



Material Options Available: -SS316L, -M, -S, -CUNI

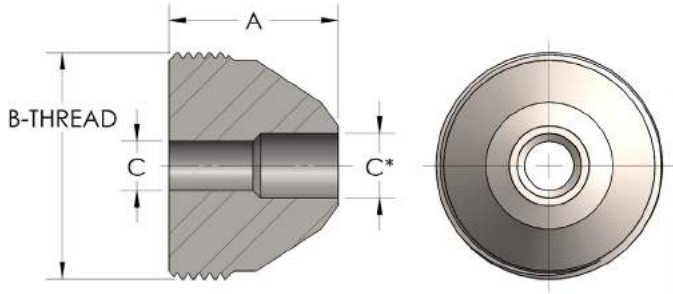
Pipe Size	Socketweld Pipe Reducing Threadpiece							Pressure Ratings			
	Part No.	A	B-THREAD	C	D	E	F	-SS316L	-M	-S	-CUNI
1/8	51T-1-0	1.19	1.188"-12UN	0.22	0.420	0.38	0.31	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/8	51T-2-0	1.25	1.375"-12UNF	0.22	0.420	0.38	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/8	51T-3-0	1.31	1.750"-12UN	0.22	0.420	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51T-2-1	1.25	1.375"-12UNF	0.31	0.555	0.38	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51T-3-1	1.31	1.750"-12UN	0.31	0.555	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	51T-4-1	1.31	2.000"-12UN	0.31	0.555	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51T-3-2	1.31	1.750"-12UN	0.44	0.690	0.38	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51T-4-2	1.31	2.000"-12UN	0.44	0.690	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	51T-5-2	1.56	2.313"-12UNS	0.44	0.690	0.38	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51T-4-3	1.31	2.000"-12UN	0.50	0.855	0.38	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51T-5-3	1.56	2.313"-12UNS	0.50	0.855	0.38	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	51T-6-3	1.69	2.750"-12UN	0.50	0.855	0.38	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51T-5-4	1.56	2.313"-12UNS	0.63	1.065	0.50	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51T-6-4	1.69	2.750"-12UN	0.63	1.065	0.50	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	51T-7-4	2.00	3.063"-12UNS	0.63	1.065	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51T-6-5	1.69	2.750"-12UN	0.81	1.330	0.50	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51T-7-5	2.00	3.063"-12UNS	0.81	1.330	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	51T-8-5	2.13	3.750"-12UN	0.81	1.330	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	51T-7-6	2.00	3.063"-12UNS	1.19	1.675	0.50	1.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	51T-8-6	2.13	3.750"-12UN	1.19	1.675	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	51T-9-6	2.56	4.500"-12UN	1.19	1.675	0.50	2.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	51T-8-7	2.13	3.750"-12UN	1.38	1.915	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.50	51T-9-7	2.56	4.500"-12UN	1.38	1.915	0.50	2.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	51T-9-8	2.56	4.500"-12UN	1.75	2.406	0.63	2.13	6000 PSI	6000 PSI	6000 PSI	4500 PSI

# O-SEAL<sup>®</sup> Threadpieces

EXAMPLE

**Threadpiece 62T -4 -S**

## 58T - Butt Weld Pipe



Material Options Available: -SS316L, -M, -S, -CUNI

Pipe Size	Butt Weld Pipe Threadpiece				
	Part No.	A	B-THREAD	C	C*
1/4	58T-1	1.19	1.188"-12UN	0.31	*
3/8	58T-2	1.25	1.375"-12UNF	0.44	*
1/2	58T-3	1.31	1.750"-12UN	0.50	*
3/4	58T-4	1.31	2.000"-12UN	0.63	*
1.00	58T-5	1.56	2.313"-12UNS	0.81	*
1.25	58T-6	1.69	2.750"-12UN	1.19	*
1.50	58T-7	2.00	3.063"-12UNS	1.38	*
2.00	58T-8	2.13	3.750"-12UN	1.75	*
2.50	58T-9	2.56	4.500"-12UN	2.13	*

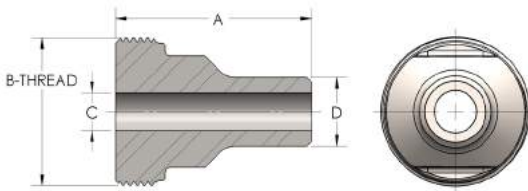
\*C, bore, corresponds to pipe schedule.

Please specify pipe schedule when ordering.

Pressure rating dependent on pipe schedule.

Example: Part No.: 58T-5-SCHXX-SS316L

## 62T - Male Pipe Weld



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Male Pipe Weld Threadpiece					Pressure Ratings				
	Part No.	A	B-THREAD	C	D	-SS316L	-M	-S	-BR	-CUNI
1/8	62T-0	1.63	1.000"-14UNS	0.22	0.405	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	62T-1	1.88	1.188"-12UN	0.31	0.540	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	62T-2	2.06	1.375"-12UNF	0.44	0.675	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1/2	62T-3	2.31	1.750"-12UN	0.50	0.840	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	62T-4	2.56	2.000"-12UN	0.63	1.050	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.00	62T-5	2.81	2.313"-12UNS	0.81	1.315	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	62T-6	3.13	2.750"-12UN	1.13	1.660	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.50	62T-7	3.50	3.063"-12UNS	1.31	1.900	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
2.00	62T-8	3.88	3.750"-12UN	1.63	2.375	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI

# O-SEAL® Threadpieces

EXAMPLE

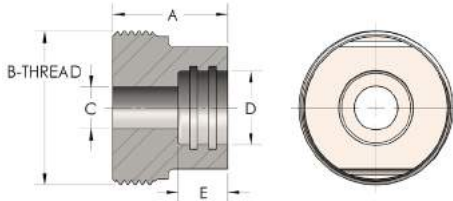
**Threadpiece**

**63T**

**-0**

**-M**

## 52T - Socket Braze Pipe



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Socket Braze Pipe Threadpiece						Pressure Ratings				
	Part No.	A	B-THREAD	C	D	E	-SS316L	-M	-S	-BR	-CUNI
1/8	52T-0	0.88	1.000"-14UNS	0.22	0.408	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	52T-1	1.19	1.188"-12UN	0.31	0.543	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	52T-2	1.25	1.375"-12UNF	0.44	0.678	0.47	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/2	52T-3	1.31	1.750"-12UN	0.50	0.843	0.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	52T-4	1.44	2.000"-12UN	0.63	1.053	0.69	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1.00	52T-5	1.75	2.313"-12UNS	0.81	1.318	0.81	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.25	52T-6	1.94	2.750"-12UN	1.19	1.663	0.94	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.50	52T-7	2.31	3.063"-12UNS	1.38	1.903	1.06	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.00	52T-8	2.50	3.750"-12UN	1.75	2.378	1.25	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.50	52T-9	2.81	4.500"-12UN	2.13	2.878	1.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

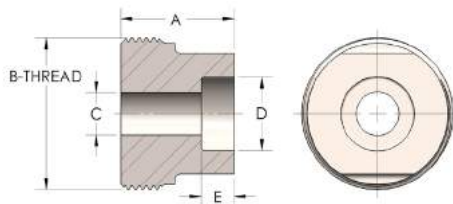
Reducing Fittings are available. Please contact customer service.

Preinserted silver brazing ring(s) are normally furnished. When ordering state grade desired.

Number of braze grooves varies with size: 1/8"-1/2": 2 grooves; 3/4"-2.50": 1 groove.

## 48T - Socketweld Tube

CRN: OA16860.2

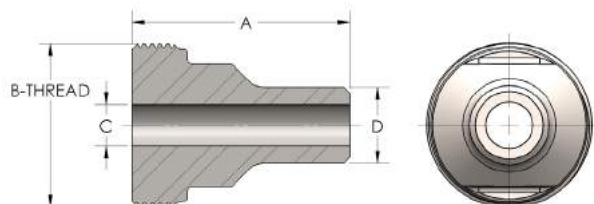


Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Tube Size	Socketweld Tube Threadpiece						Pressure Ratings				
	Part No.	A	B-THREAD	C	D	E	-SS316L	-M	-S	-BR	-CUNI
1/4	48T-0	0.88	1.000"-14UNS	0.22	0.252	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	48T-1	1.19	1.188"-12UN	0.31	0.377	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	48T-2	1.25	1.375"-12UNF	0.44	0.502	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	48T-3	1.31	1.750"-12UN	0.50	0.752	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	48T-4	1.31	2.000"-12UN	0.63	1.002	0.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	48T-5	1.56	2.313"-12UNS	0.81	1.252	0.63	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1.50	48T-6	1.69	2.750"-12UN	1.19	1.502	0.69	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
2.00	48T-7	2.00	3.063"-12UNS	1.38	2.002	0.75	4500 PSI	6000 PSI	3000 PSI	3000 PSI	2500 PSI
2.50	48T-8	2.13	3.750"-12UN	1.75	2.502	0.88	4500 PSI	6000 PSI	3000 PSI	3000 PSI	2500 PSI
3.00	48T-9	2.56	4.500"-12UN	2.13	3.002	1.00	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

Reducing Fittings are available. Please contact customer service.

## 63T - Male Tube Weld



Material Options Available: -SS316L, -M, -S, -CUNI

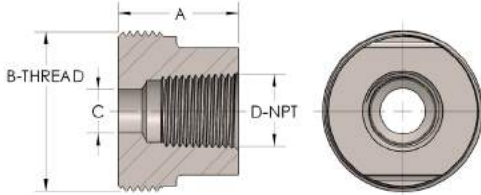
Pipe Size	Male Tube Weld Threadpiece						Pressure Ratings			
	Part No.	A	B-THREAD	C	D		-SS316L	-M	-S	-CUNI
1/4	63T-0	1.63	1.000"-14UNS	0.17	0.250		6000 PSI	6000 PSI	4500 PSI	3000 PSI
3/8	63T-1	1.88	1.188"-12UN	0.25	0.375		6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/2	63T-2	2.06	1.375"-12UNF	0.34	0.500		6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/4	63T-3	2.31	1.750"-12UN	0.50	0.750		6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.00	63T-4	2.56	2.000"-12UN	0.63	1.000		6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	63T-5	2.81	2.313"-12UNS	0.81	1.250		6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.50	63T-6	3.13	2.750"-12UN	1.00	1.500		6000 PSI	6000 PSI	6000 PSI	3000 PSI
2.00	63T-7	3.50	3.063"-12UNS	1.38	2.000		6000 PSI	6000 PSI	6000 PSI	3000 PSI
2.50	63T-8	3.88	3.750"-12UN	1.75	2.500		6000 PSI	6000 PSI	6000 PSI	3000 PSI

# O-SEAL® Threadpieces

EXAMPLE **Threadpiece 54T -4 -BR**

## 53T - Female Pipe Thread

CRN: 0A16860.2



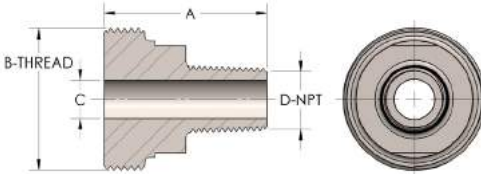
Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Female Pipe Thread Threadpiece				Pressure Ratings					
	Part No.	A	B-THREAD	C	D-NPT	-SS316L	-M	-S	-BR	-CUNI
1/8	53T-0	0.88	1.000"-14UNS	0.22	1/8"-27	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	53T-1	1.19	1.188"-12UN	0.31	1/4"-18	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/8	53T-2	1.25	1.375"-12UNF	0.44	3/8"-18	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/2	53T-3	1.31	1.750"-12UN	0.50	1/2"-14	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
3/4	53T-4	1.31	2.000"-12UN	0.63	3/4"-14	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
1.00	53T-5	1.56	2.313"-12UNS	0.81	1.000"-11.5	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.25	53T-6	1.69	2.750"-12UN	1.19	1.250"-11.5	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.50	53T-7	2.00	3.063"-12UNS	1.38	1.500"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.00	53T-8	2.13	3.750"-12UN	1.75	2.000"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.50	53T-9	2.56	4.500"-12UN	2.13	2.500"-8	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

Reducing Fittings are available. Please contact customer service.

## 54T - Male Pipe Thread

CRN: 0A16860.2

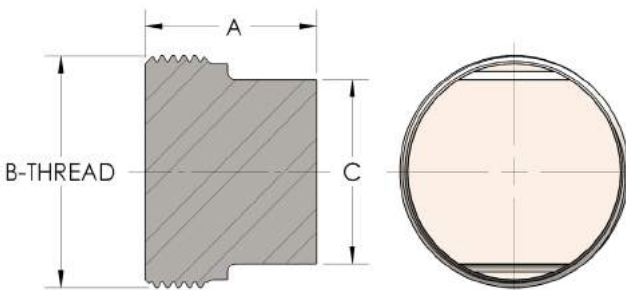


Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Male Pipe Thread Threadpiece				Pressure Ratings					
	Part No.	A	B-THREAD	C	D-NPT	-SS316L	-M	-S	-BR	-CUNI
1/8	54T-0	1.44	1.000"-14UNS	0.22	1/8"-27	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1/4	54T-1	1.75	1.188"-12UN	0.31	1/4"-18	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
3/8	54T-2	1.88	1.375"-12UNF	0.44	3/8"-18	3000 PSI	4500 PSI	3000 PSI	3000 PSI	2500 PSI
1/2	54T-3	2.00	1.750"-12UN	0.50	1/2"-14	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
3/4	54T-4	2.25	2.000"-12UN	0.63	3/4"-14	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
1.00	54T-5	2.50	2.313"-12UNS	0.81	1.000"-11.5	6000 PSI	6000 PSI	4500 PSI	4500 PSI	3000 PSI
1.25	54T-6	2.88	2.750"-12UN	1.13	1.250"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
1.50	54T-7	3.25	3.063"-12UNS	1.31	1.500"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.00	54T-8	3.25	3.750"-12UN	1.63	2.000"-11.5	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
2.50	54T-9	4.19	4.500"-12UN	2.13	2.500"-8	3000 PSI	4500 PSI	3000 PSI	2500 PSI	2000 PSI

Reducing Fittings are available. Please contact customer service.

## 104T - Blank



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Pipe Size	Blank Threadpiece				Pressure Ratings				
	Part No.	A	B-THREAD	C	-SS316L	-M	-S	-BR	-CUNI
1/8	104T-0	0.88	1.000"-14UNS	0.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	104T-1	1.19	1.188"-12UN	0.94	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	104T-2	1.25	1.375"-12UNF	1.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	104T-3	1.31	1.750"-12UN	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	104T-4	1.31	2.000"-12UN	1.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	104T-5	1.56	2.313"-12UNS	1.94	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	104T-6	1.69	2.750"-12UN	2.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	104T-7	2.00	3.063"-12UNS	2.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	104T-8	2.13	3.750"-12UN	3.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.50	104T-9	2.56	4.500"-12UN	3.94	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI



# O-SEAL® Threadpieces

EXAMPLE

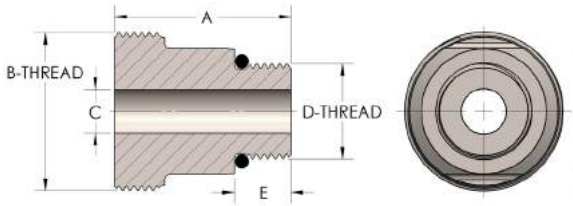
**Threadpiece**

**59T**

**-6**

**-SS316L**

## 59T - Male Straight Thread

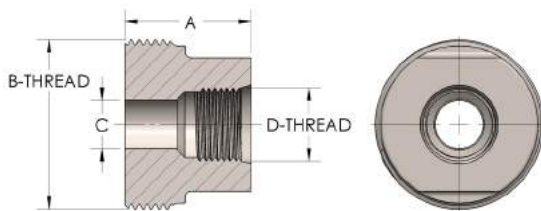


Material Options Available: -SS316L, -M, -S, -BR

Tube Size	SAE Dash Size	Male Straight Thread Threadpiece						Pressure Ratings			
		Part No.	A	B-THREAD	C	D-THREAD	E	-SS316L	-M	-S	-BR
1/4	2	59T-0	1.44	1.000"-14UNS	0.17	7/16"-20UNF	0.41	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	6	59T-1	1.56	1.188"-12UN	0.30	9/16"-18UNF	0.43	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	8	59T-2	1.69	1.375"-12UNF	0.39	3/4"-16UNF	0.47	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	12	59T-3	1.94	1.750"-12UN	0.50	1.063"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	16	59T-4	2.06	2.000"-12UN	0.63	1.313"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	20	59T-5	2.19	2.313"-12UNS	0.81	1.625"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.50	24	59T-6	2.38	2.750"-12UN	1.19	1.875"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI	4500 PSI
2.00	32	59T-7	2.56	3.063"-12UNS	1.38	2.500"-12UN	0.63	4500 PSI	6000 PSI	4500 PSI	3000 PSI
2.50	---	59T-8	2.50	3.750"-12UN	1.75	3.000"-12UN	0.63	3000 PSI	4500 PSI	3000 PSI	3000 PSI

Reducing Fittings are available. Please contact customer service.

## 64T - Female Straight Thread



Material Options Available: -SS316L, -M, -S

Tube Size	SAE Dash Size	Female Straight Thread Threadpiece						Pressure Ratings		
		Part No.	A	B-THREAD	C	D-THREAD	-SS316L	-M	-S	
1/4	2	64T-0-0	0.88	1.000"-14UNS	0.19	7/16"-20UNF	6000 PSI	6000 PSI	6000 PSI	
3/8	6	64T-1-1	1.19	1.188"-12UN	0.31	9/16"-18UNF	6000 PSI	6000 PSI	6000 PSI	
1/2	8	64T-2-2	1.25	1.375"-12UNF	0.44	3/4"-16UNF	6000 PSI	6000 PSI	6000 PSI	
3/4	12	64T-3-3	1.31	1.750"-12UN	0.50	1.063"-12UN	4500 PSI	6000 PSI	4500 PSI	
1.00	16	64T-4-4	1.31	2.000"-12UN	0.63	1.313"-12UN	3000 PSI	4500 PSI	3000 PSI	
1.25	20	64T-5-5	1.56	2.313"-12UNS	0.81	1.625"-12UN	4500 PSI	6000 PSI	3000 PSI	
1.50	24	64T-6-6	1.69	2.750"-12UN	1.19	1.875"-12UN	4500 PSI	6000 PSI	3000 PSI	
2.00	32	64T-7-7	2.00	3.063"-12UNS	1.38	2.500"-12UN	2000 PSI	2500 PSI	2000 PSI	

Tube Size	SAE Dash Size	Female Straight Thread Reducing Threadpiece						Pressure Ratings		
		Part No.	A	B-THREAD	C	D-THREAD	-SS316L	-M	-S	
1/4	2	64T-1-0	1.19	1.188"-12UN	0.31	7/16"-20UNF	6000 PSI	6000 PSI	6000 PSI	
3/8	6	64T-2-1	1.25	1.375"-12UNF	0.44	9/16"-18UNF	6000 PSI	6000 PSI	6000 PSI	
1/2	8	64T-3-2	1.31	1.750"-12UN	0.50	3/4"-16UNF	6000 PSI	6000 PSI	6000 PSI	
3/4	12	64T-4-3	1.31	2.000"-12UN	0.63	1.063"-12UN	6000 PSI	6000 PSI	6000 PSI	
1.00	16	64T-5-4	1.56	2.313"-12UNS	0.81	1.313"-12UN	6000 PSI	6000 PSI	6000 PSI	
1.25	20	64T-6-5	1.69	2.750"-12UN	1.19	1.625"-12UN	6000 PSI	6000 PSI	6000 PSI	
1.50	24	64T-7-6	2.00	3.063"-12UNS	1.38	1.875"-12UN	6000 PSI	6000 PSI	6000 PSI	
2.00	32	64T-8-7	2.13	3.750"-12UN	1.75	2.500"-12UN	6000 PSI	6000 PSI	4500 PSI	

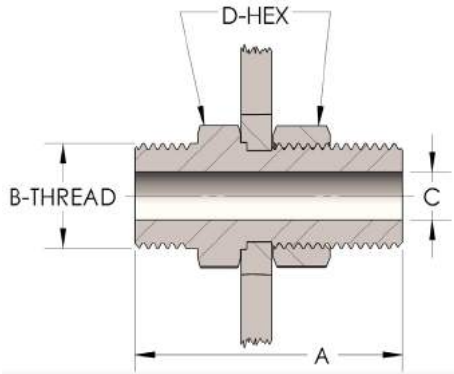
Further Reducing Fittings are available. Please contact customer service.

# O-SEAL® Threadpieces

EXAMPLE

**Threadpiece 40 -2 -NAB**

## 89T - Bulkhead



Material Options Available: -SS316L, -M, -S, -BR

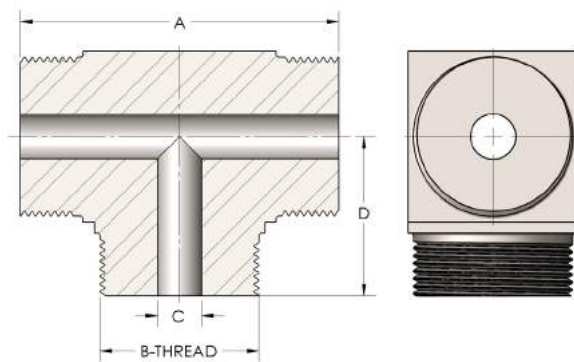
Pipe Size	Bulkhead Threadpiece					Pressure Ratings			
	Part No.	A	B-THREAD	C	D-HEX	-SS316L	-M	-S	-BR
1/8	89T-0	2.19	1.000"-14UNS	0.22	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	89T-1	2.44	1.188"-12UN	0.31	1.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	89T-2	2.44	1.375"-12UNF	0.44	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	89T-3	2.44	1.750"-12UN	0.50	2.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	89T-4	2.44	2.000"-12UN	0.63	2.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	89T-5	2.94	2.313"-12UNS	0.81	2.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	89T-6	2.94	2.750"-12UN	1.19	3.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	89T-7	3.44	3.063"-12UNS	1.38	3.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	89T-8	3.44	3.750"-12UN	1.75	4.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI

Jam nut is furnished with bulkhead fitting.

Maximum Panel Thickness: -0 through -4 sizes: 0.38" thick; -5 through -8 sizes: 0.50" thick.

Panel Bore Diameter: -0 through -3 sizes: to be 0.031" larger than B-Thread diameter;  
-4 through -8 sizes: to be 0.063" larger than B-Thread diameter.

## 40 - Tee



Material Options Available: -SS316L, -M, -NAB, -S

Pipe Size	Tee - Threadpiece					Pressure Ratings			
	Part No.	A	B-THREAD	C	D	-SS316L	-M	-NAB	-S
1/8	40-0	2.25	1.000"-14UNS	0.22	1.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	40-1	2.75	1.188"-12UN	0.31	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	40-2	3.00	1.375"-12UNF	0.44	1.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	40-3	3.50	1.750"-12UN	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	40-4	3.75	2.000"-12UN	0.63	1.88	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	40-5	4.50	2.313"-12UNS	0.81	2.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	40-6	5.00	2.750"-12UN	1.19	2.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	40-7	5.75	3.063"-12UNS	1.38	2.88	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	40-8	6.25	3.750"-12UN	1.75	3.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI

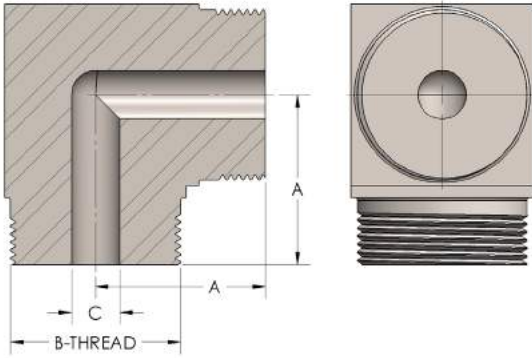


# O-SEAL® Threadpieces

EXAMPLE

<b>Threadpiece</b>	<b>43</b>	<b>-7</b>	<b>-M</b>
--------------------	-----------	-----------	-----------

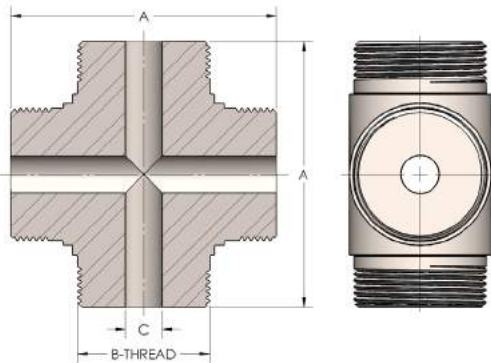
## 41/42 - Elbow (90° and 45°)



Pipe Size	Elbow - Threadpiece					Pressure Ratings			
	Part No.		A	B-THREAD	C	-SS316L	-M	-NAB	-S
	90°	45°							
1/8	41-0	42-0	1.13	1.000"-14UNS	0.22	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	41-1	42-1	1.38	1.188"-12UN	0.31	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	41-2	42-2	1.50	1.375"-12UNF	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	41-3	42-3	1.75	1.750"-12UN	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	41-4	42-4	1.88	2.000"-12UN	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	41-5	42-5	2.25	2.313"-12UNS	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	41-6	42-6	2.50	2.750"-12UN	1.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	41-7	42-7	2.88	3.063"-12UNS	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	41-8	42-8	3.25	3.750"-12UN	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI

Material Options Available: -SS316L, -M, -NAB, -S

## 43 - Cross



Pipe Size	Cross - Threadpiece					Pressure Ratings			
	Part No.	A	B-THREAD	C	D	-SS316L	-M	-NAB	-S
1/8	43-0	2.25	1.000"-14UNS	0.22	1.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	43-1	2.75	1.188"-12UN	0.31	1.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	43-2	3.00	1.375"-12UNF	0.44	1.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/2	43-3	3.50	1.750"-12UN	0.50	1.75	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/4	43-4	3.75	2.000"-12UN	0.63	1.88	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.00	43-5	4.50	2.313"-12UNS	0.81	2.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.25	43-6	5.00	2.750"-12UN	1.19	2.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1.50	43-7	5.75	3.063"-12UNS	1.38	2.88	6000 PSI	6000 PSI	6000 PSI	6000 PSI
2.00	43-8	6.25	3.750"-12UN	1.75	3.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI

Material Options Available: -SS316L, -M, -NAB, -S

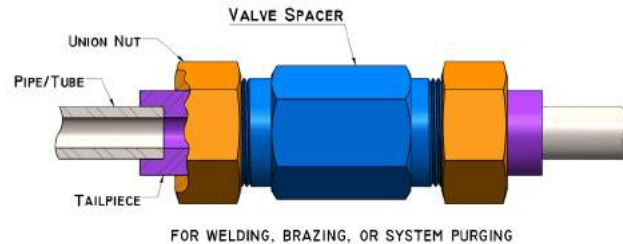
## Valve Spacers

CPV Valve Spacers are the exact face-to-face dimension of CPV O-SEAL® valves. They can be used to protect valves during installation, and can be reused again and again for maintenance operations.

CPV O-SEAL® valves provide years of reliable service. However, the heat of welding or brazing during installation can compromise the cleanliness and/or integrity of the O-SEAL® valve. Using CPV's hollow core valve spacers enables users to avoid that risk. These spacers replicate the exact face-to-face dimension of the O-SEAL® valve being installed. After welding or brazing has taken place, the entire system can be flushed. The spacer is then slipped out and the valve slipped in. Users are thus assured of both a perfect fit and a leak-proof connection for years to come. Moreover, once the O-SEAL® valve is in service, the valve spacer can be saved and re-used over and over again. For example, if flushing the system could cause problems or contaminate the O-SEAL® valves, users simply slip the valves out and slip the spacers in.

To order, enter the letter "F" in front of the part number for the CPV O-SEAL® valve you are installing. Be sure to specify the complete part number for each spacer you wish to order, including the size code or "dash" number. For example:

- F-380-3 (spacer for Globe Valve No. 380-3, size 1/2")
- F-381-4 (spacer for Angle Valve No. 381-4, size 3/4")
- F-123A-5 (spacer for Check Valve No. 123A-5, size 1")

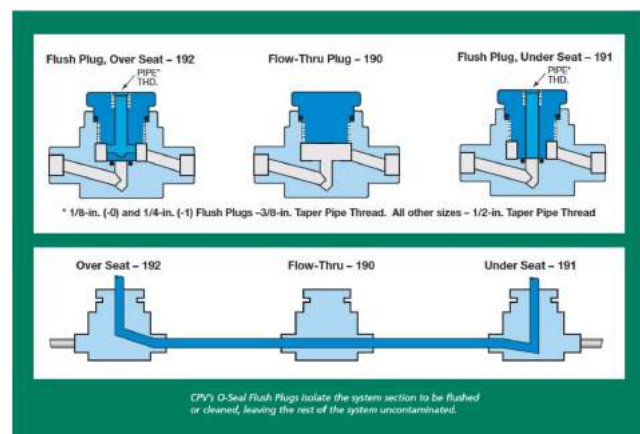


## Valve Flush Plugs

If one section of a piping system needs to be altered, cleaned or flushed, CPV O-SEAL® Flush Plugs can be used to protect the rest of a system from contamination. Simply remove the valve cartridge and insert the appropriate Flush Plugs into the O-SEAL® valve bodies at either end of the affected area and the rest of the system will be totally cut off from the cleaning or flushing process.

There are three types of flush plugs available: Under-Seat, Over-Seat, and Flow-Thru.

As can be seen in the schematic drawings, the Over-Seat and Under-Seat have threaded connections in the top of the plug for trouble-free connection to the flushing pump. The Flow-Thru Plugs are intended for insertion in valves located in the middle of the section being flushed or cleaned. Once installed, these plugs allow the flush to flow through without contaminating the O-SEAL® valve cartridges. When these valve bodies are equipped with O-SEAL® Flush Plugs, future system expansion or section flushing will be much easier.



# O-SEAL® Tools & Maintenance

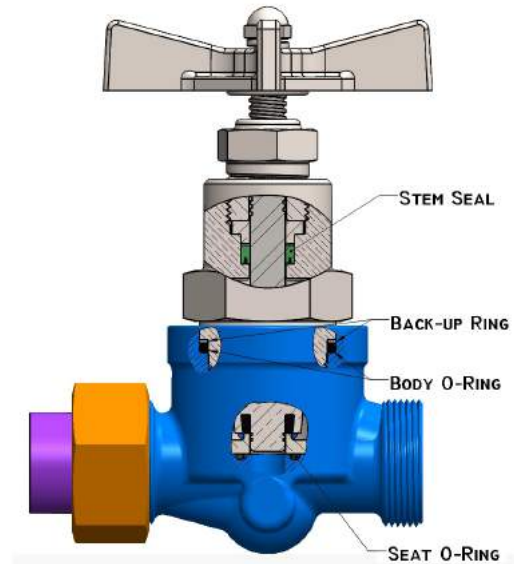
## Soft Goods Kits

In the event that the sealing elements used in an O-SEAL® system valve ever need replacement, a soft goods kit can be obtained containing all four of the items required. To order a soft goods kit, determine the proper material grouping shown across the top of the chart below. Read down the column and select the Kit Number on the horizon line matching the valve size or Dash Number.

For example:

A 1/2 in. 380-3 Globe valve requires a soft goods kit. The valve is used in compressed air service, and the compressor is lubricated with a petroleum-based oil. The materials listed in the first column under Material Grouping B are satisfactory for this service.

Continue down this column to the line for Dash No. -3 (1/2 in. pipe size) to determine that the Kit Number is 003803.



Kits Items			Material Grouping							Stem Seal Installation Tool Part No.
Qty.	B	C	D	G	N	V				
Stem Seal	1 ea.	Polyurethane	Viton®	Ethylene Propylene	Polyurethane	Polyurethane	Viton® w/ Expander O-Ring			
Body O-Ring	1 ea.	Buna-N	Viton®	Ethylene Propylene	Viton®	Ethylene Propylene	Viton®			
Back-up Ring	1 ea.	Teflon™	Teflon™	Teflon™	Teflon™	Teflon™	Teflon™			
Seat O-Ring	1 ea.	Buna-N	Viton®	Ethylene Propylene	Viton®	Ethylene Propylene	Viton®			
Temperature Range			-30°F to 180°F (-34°C to 82°C)	-15°F to 400°F* (-26°C to 204°C*)	-70°F to 250°F (-57°C to 121°C)	-15°F to 180°F (-26°C to 82°C)	-40°F to 180°F (-40°C to 82°C)	-15°F to 400°F* (-26°C to 204°C*)		
Dash No.	Pipe Size	OD Tube	Kit Part Number							
-0	1/8	1/4	003800	003810	003820	003840	003870	003890	056930	
-1	1/4	3/8	003801	003811	003821	003841	003871	003891		
-2	3/8	1/2	003802	003812	003822	003842	003872	003892	056932	
-3	1/2	3/4	003803	003813	003823	003843	003873	003893	056933	
-4	3/4	1.00	003804	003814	003824	003844	003874	003894		
-5	1.00	1.25	003805	003815	003825	003845	003875	003895	056935	
-6	1.25	1.50	003806	003816	003826	003846	003876	003896	056936	
-7	1.50	2.00	003807	003817	003827	003847	003877	003897	056937	
-8	2.00	2.50	003808	003818	003828	003848	003878	003898		

\*Maximum temperature rating of standard valve assembly is limited by Nylon Disc at 275°F (135°C).

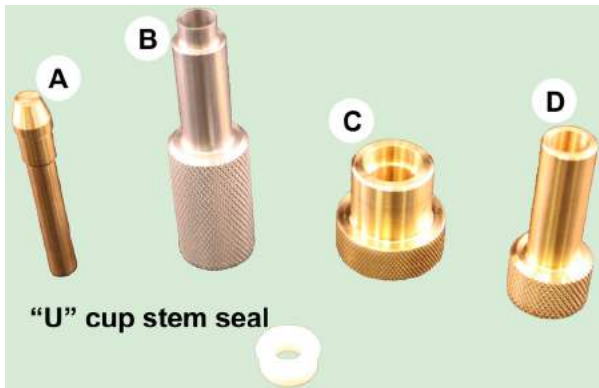
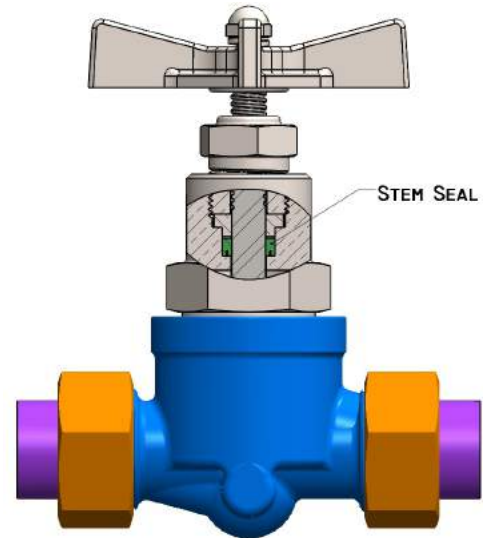
\*\*Note: If a Vacuum Service valve is ordered (-VC), simply add "-VC" to the end of the Kit Part Number to ensure that the additional soft goods will be supplied for that -VC valve.  
Example: 003813-VC

O-Ring & Stem Seal Temperature Ratings	
Buna-N (Nitrile NBR)	-30°F to +250°F (-34°C to 121°C)
Viton® (Fluorocarbon)	-15°F to +400°F (-26°C to 205°C)
EPDM (Ethylene Propylene)	-70°F to +250°F (-57°C to 121°C)
Polyurethane	-40°F to +180°F (-40°C to 82°C)

# O-SEAL® Tools & Maintenance

## Stem Seal Tools

Every new CPV O-SEAL® valve provides leak-proof assurance to up 6000 PSI (413 bar). Properly maintained they should provide long, reliable service. The stem seals are made of Viton®, Polyurethane, Ethylene Propylene, etc. and should be inspected at appropriate intervals depending on system conditions and frequency of use. To maintain CPV's leak-proof standard after stem seal replacement, the "U" cup installation tool developed by CPV should be used. This tool is easy to use and enables users to replace a stem seal in less than a minute. By compressing the outer sealing lip and expanding the inner lip, the kit makes it easy to slip the "U" cup stem seal over the valve stem. Once the stem seal is properly installed on the valve stem, it can be easily inserted into the bonnet gland and secured without damaging the critical edges of the seal. A CPV Replacement Soft Goods Kit can also be ordered in the pipe size and soft goods material specified for the user's application. This kit contains one of each: stem seal, body O-Ring, back-up ring, and seat O-Ring.



The CPV "U" Cup Installation Tool can be used on O-SEAL® Shutoff, Needle, or Stop-Check valve cartridges.

Dash Number	Pipe Size	Tube Size	Tool Part No.	Stem Seal Part No.*
-0	1/8	1/4	<b>056930</b>	001905-*
-1	1/4	3/8	<b>056932</b>	001909-*
-2	3/8	1/2	<b>056933</b>	001919-*
-3	1/2	3/4	<b>056935</b>	001927-*
-4	3/4	1.00	<b>056936</b>	001935-*
-5	1.00	1.25	<b>056937</b>	001953-*
-6	1.25	1.50		
-7	1.50	2.00		
-8	2.00	2.50		

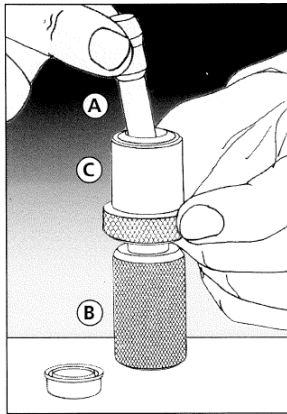
\*Be sure to specify the stem seal material desired by adding the appropriate suffix (dash letter):  
 •Viton® - EE  
 •Polyurethane - EA  
 •Ethylene Propylene - ED

The relevant part numbers are as follows:

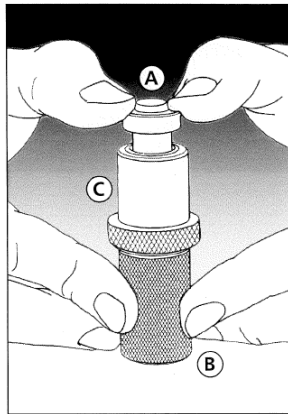
- Shutoff: 365, 370, 371, 380, 381, and 382
- Needle: 465, 470, 471, 480, 481, and 482
- Stop-Check: 565, 570, 571, 580, 581, and 582

# O-SEAL® Tools & Maintenance

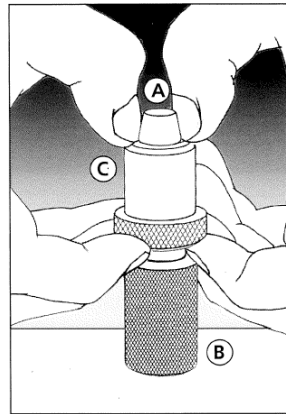
## How to Install “U” Cup Stem Seals in CPV O-SEAL® System Valves



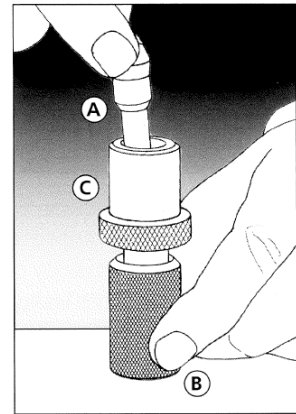
1. Insert items A and C onto item B.



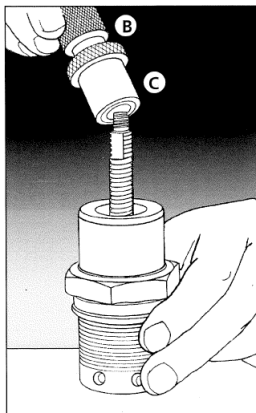
2. With the sealing lips facing away from the tool, slide the “U” cup over the taper on item A.



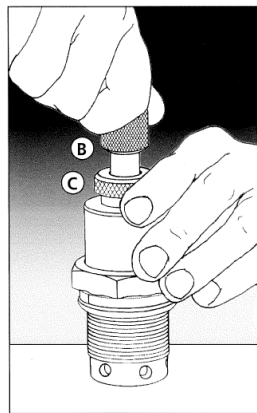
3. Continue to press the “U” cup over item A until the cup is stopped by the shoulder of item B. At the same time, pull up on item C until it covers the “U” cup.



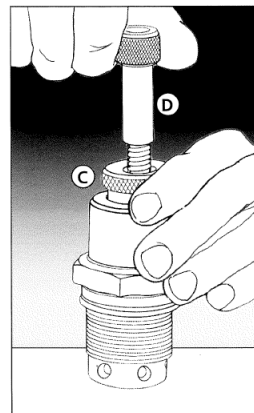
4. Remove item A.



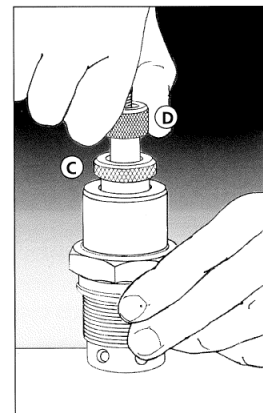
5. Invert items B and C with the “U” cup. Slip the tool assembly over the valve stem and into the bonnet gland.



6. Hold down item C while removing item B.



7. Insert item D.



8. Press down on item D to seat the “U” cup in the gland. Remove tool assembly.



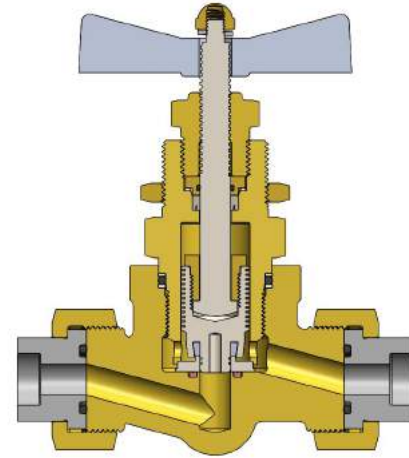
# OXNB Series O-SEAL® Oxygen Valves

## O-SEAL® Naval Brass Oxygen Valves

The new CPV OXNB High Pressure Valve is optimized for critical requirements of oxygen service, including fill plants, high pressure manifolds, and various other piping system applications. The new oxygen-service brass valve design utilizes the same reliable sealing method as CPV's standard O-SEAL® Series valves which have been used throughout the industrial gas industry for more than 75 years.

### Features

- Pressure rating of vacuum to 4500 PSI (310 bar) in Oxygen
  - Ignition/pressure surge tested per ISO 10297 and ISO 7291
  - Naval Brass and Monel® pressure boundary materials
  - Wetted surfaces free from aluminum or aluminum alloys
  - Cleaned to CGA G-4.1 and ASTM G93 standards
  - Standard -VC vacuum service design
- Featuring CPV's soft-seat design with Vespel® SP-21 Disc for bubble-tight, leak free performance
- Standard -P panel mount configuration
- O-SEAL® end connections
  - Zero-clearance removal of valve
  - Select corresponding 50N union nut from page 15 (-SS16L, -M, or -NAB recommended)
  - Tailpieces from pages 16-20 to match any pipe or tube configuration
- CRN (Canadian Registration Number) OC16868.2
- Field serviceable; rebuild kits available



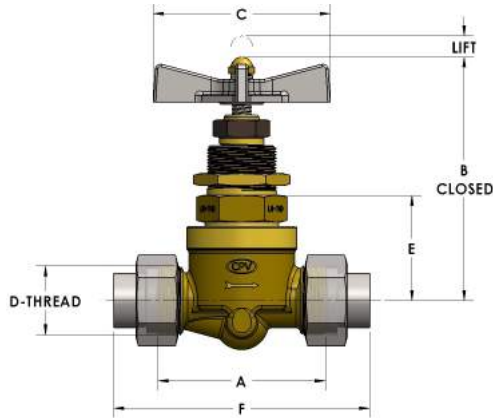
OXNB Softgoods Ordering Kit			
Temperature Range			-15°F to 400°F (-26°C to 204°C)
Dash No.	Pipe Size	OD Tube	Kit Part Number
-0	1/8	1/4	005600
-1	1/4	3/8	005601
-2	3/8	1/2	005602
-3	1/2	3/4	005603
-4	3/4	1.00	005604
-5	1.00	1.25	005605

Component	Material
Body, Bonnet, Retainer, Stem Retainer, Panel Nut	Naval Brass ASTM B283/ASTM B21
Stem Assembly	Monel® NiCu ASTM B164
Guide Assembly (-2 through -5 sizes)	CuNi 70-30 MIL-C-15726
Disc (Seal)	Vespel® SP-21
O-rings and Stem Seal	Viton® Fluorocarbon Type 1, Class 2 (90 durometer)
Seat Ring	Copper
Backup Ring, Gasket	Teflon® PTFE

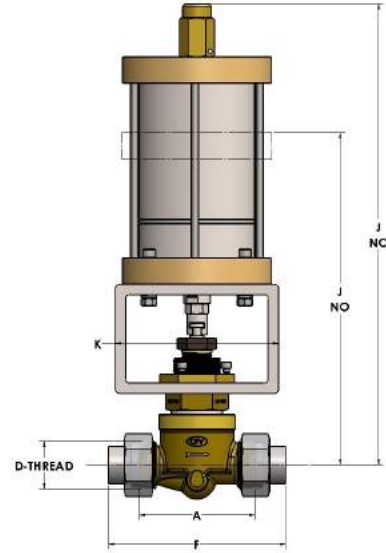


# OXNB Series O-SEAL® Oxygen Valves

## O-SEAL® Naval Brass Oxygen Valves CRN: OC16868.2



Globe Style Hand Valve



Globe Style Pneumatic Actuated Valve

Pipe Size	Tube Size	Port Dia.	OXNB - GLOBE STYLE HAND VALVES			A	B	C	D-THREAD	E	F	LIFT
			Shutoff	Needle	Stop-Check							
1/8	1/4	0.22	380-0-P-OXNB-VC	480-0-P-OXNB-VC	580-0-P-OXNB-VC	2.75	3.75	3.50	1.000"-14UNS	1.63	4.13	0.19
1/4	3/8	0.31	380-1-P-OXNB-VC	480-1-P-OXNB-VC	580-1-P-OXNB-VC	3.38	4.06	3.50	1.188"-12UN	2.00	5.50	0.34
3/8	1/2	0.44	380-2-P-OXNB-VC	480-2-P-OXNB-VC	580-2-P-OXNB-VC	4.00	4.88	3.50	1.375"-12UNF	2.38	6.25	0.44
1/2	3/4	0.50	380-3-P-OXNB-VC	480-3-P-OXNB-VC	580-3-P-OXNB-VC	4.25	6.13	4.50	1.750"-12UNF	2.69	6.50	0.53
3/4	1.00	0.63	380-4-P-OXNB-VC	480-4-P-OXNB-VC	580-4-P-OXNB-VC	4.63	6.25	5.25	2.000"-12UN	2.81	6.88	0.56
1.00	1.25	0.81	380-5-P-OXNB-VC	480-5-P-OXNB-VC	580-5-P-OXNB-VC	5.25	7.63	7.25	2.313"-12UNS	3.75	7.75	0.59

**Notes:**

1. All dimensions listed are in inches.
2. When ordering, be sure to include Union Nuts, Part No. 50N, and proper tailpieces from the O-SEAL® Fittings section of this catalog (pages 15-20).

Pipe Size	Tube Size	Port Dia.	OXNB - GLOBE STYLE PNEUMATIC ACTUATED		A	D-THREAD	F	J		K
			Shutoff	Needle				(Normally Open)	(Normally Closed)	
1/8	1/4	0.22	1380-0-P-OXNB-VC*	1480-0-P-OXNB-VC*	2.75	1.000"-14UNS	4.13	6.09	11.50	4.00
1/4	3/8	0.31	1380-1-P-OXNB-VC*	1480-1-P-OXNB-VC*	3.38	1.188"-12UN	5.50	10.00	13.44	4.00
3/8	1/2	0.44	1380-2-P-OXNB-VC*	1480-2-P-OXNB-VC*	4.00	1.375"-12UNF	6.25	11.00	15.88	5.00
1/2	3/4	0.50	1380-3-P-OXNB-VC*	1480-3-P-OXNB-VC*	4.25	1.750"-12UNF	6.50	12.25	18.56	6.00
3/4	1.00	0.63	1380-4-P-OXNB-VC*	1480-4-P-OXNB-VC*	4.63	2.000"-12UN	6.88	13.38	13.56	8.00
1.00	1.25	0.81	1380-5-P-OXNB-VC*	1480-5-P-OXNB-VC*	5.25	2.313"-12UNS	7.75	14.25	16.75	8.00

\*Add "-NC" or "-NO" to the end of the part number to indicate type of actuator: Normally Closed (NC) or Normally Open (NO).

## Mark VIII®

A vast array of separable fittings and control valves with a robust and affordable design.

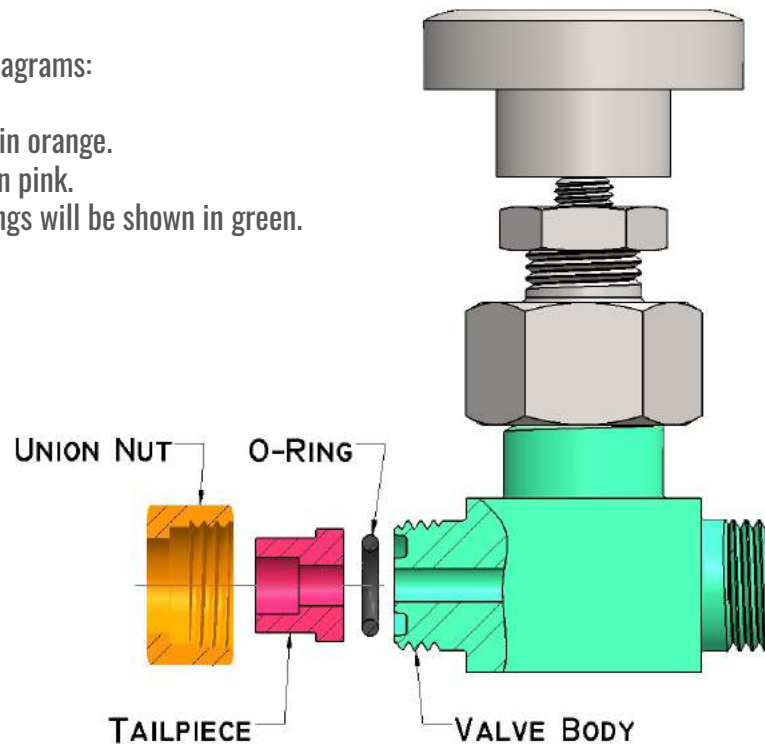
- High pressure leak-proof reliability, especially in systems with ambient vibration and cyclic stresses
- Flat-faced O-Ring seals allow for:
  - Quick make/break connections with low tightening torques
  - Slip-in and slip-out of components and fittings
  - Joint will not vibrate loose or need retightening when properly torqued
- Reducing tailpieces and reducing inserts can be combined to create unique solutions
- Valve pressure ratings of 3000 PSI (206 bar); fittings up to 6000 PSI (413 bar)
- Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Rings

Please note for colored diagrams:

Union nuts will be shown in orange.

Tailpieces will be shown in pink.

Threaded bodies and fittings will be shown in green.

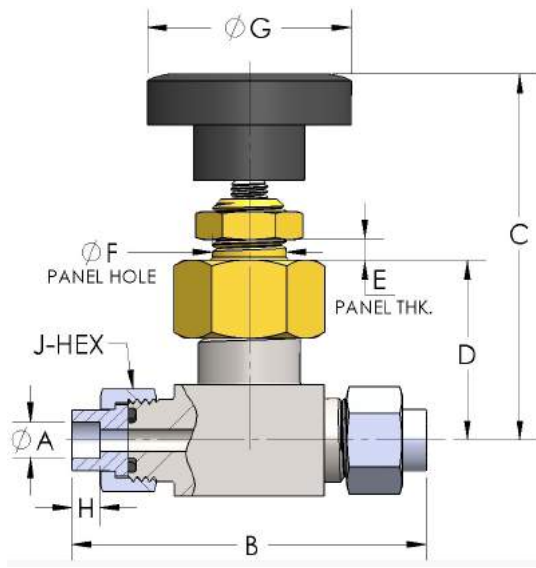


# Mark VIII® Valve

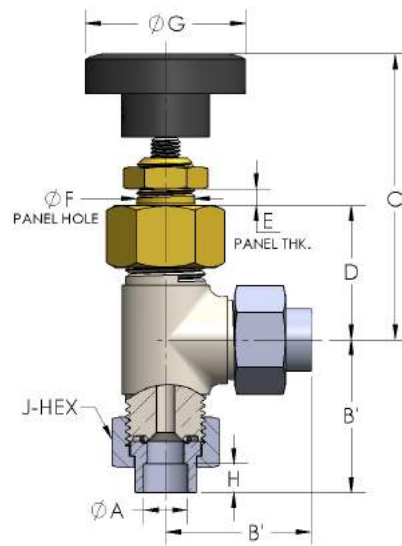
EXAMPLE

**8 -08 N G U -06 -C**

Product Line	Orifice	Valve Type	Body Style	Body End Connection	Tube O.D.	O-Ring Material	Temperature Range
8	-04 0.156" -08 0.297"	S Shutoff N Regulating	G Inline A Angle	U Mark VIII™ Union	-02 1/8" -03 3/16" -04 1/4" -05 5/16" -06 3/8" -08 1/2" -10 5/8"	-B Buna-N (Nitrile NBR) -C Viton® (Fluorocarbon) -D EPDM (Ethylene Propylene)	-30°F to 250°F (-34°C to 121°C) -15°F to 400°F (-26°C to 204°C) -70°F to 250°F (-57°C to 250°C)



Inline



Angle

Part Number		Dimensions (Inches)														
Inline	Angle	Orifice	Tube O.D. A	B	B'	C		D	E	F	G	H	J-HEX			
						Open	Closed									
8-04SGU-02	8-04SAU-02	0.156	0.13	2.38	1.19	2.59	2.44	1.22	0.25	0.53	1.38	0.19	0.63			
8-04SGU-03	8-04SAU-03		0.19													
8-04SGU-04	8-04SAU-04		0.25													
8-04SGU-06	8-04SAU-06		0.38											3.00	1.50	0.25
8-08SGU-05	8-08SAU-05	0.297	0.31	3.38	1.69	3.47	3.19	1.66	0.38	0.78	1.88	0.25	0.94			
8-08SGU-06	8-08SAU-06		0.38											3.25	1.63	
8-08SGU-08	8-08SAU-08		0.50											3.38	1.69	0.31
8-08SGU-10	8-08SAU-10		0.63											4.13	2.06	0.38

NOTE: Replace the "S" with an "N" to order a Regulating (Needle) valve. See Valve Type Configurations on the next page.

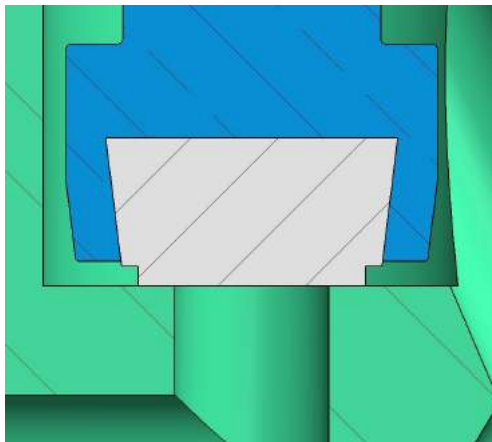
NOTE: Order Sil-Braze rings (H801) separately. Please contact Customer Service.

# Mark VIII® Valve

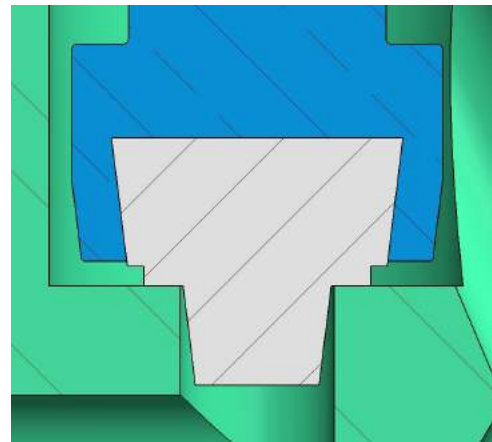
Mark VIII® Valve Technical Specifications	
Operating Pressure: 3000 PSI (207 bar)	
Standard Valve Materials	Estimated Flow Coefficient, $C_v$
Body - 316/L Stainless Steel	<ul style="list-style-type: none"> <li>• <i>Inline [G] Body Style</i> <ul style="list-style-type: none"> <li>▪ 0.156" orifice, <math>C_v \approx 0.25</math></li> <li>▪ 0.297" orifice, <math>C_v \approx 1.00</math></li> </ul> </li> <li>• <i>Angle [A] Body Style</i> <ul style="list-style-type: none"> <li>▪ 0.156" orifice, <math>C_v \approx 0.40</math></li> <li>▪ 0.297" orifice, <math>C_v \approx 1.60</math></li> </ul> </li> </ul>
Stem - 316/L Stainless Steel	
Bonnet - High Tensile Bronze	
Panel Nut - Naval Brass	
Sealing Disc - Kel-F® [PCTFE]	
Tailpiece (fitting) - 316/L Stainless Steel	
Union Nut (fitting) - 316/L Stainless Steel	

## Valve Types

### Sealing Disc Configurations



Shutoff



Regulating

# Mark VIII® Fittings

## Application

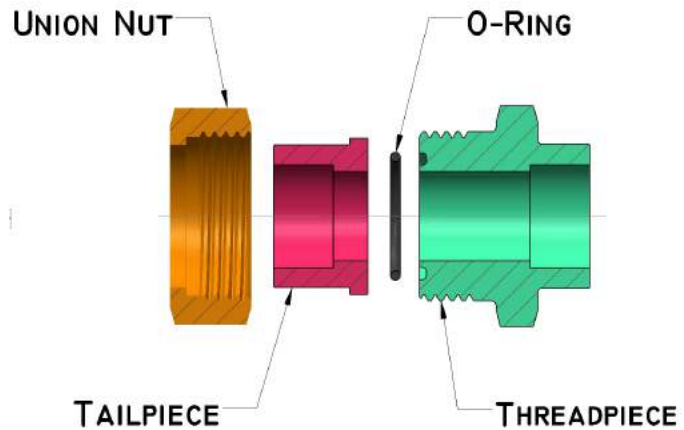
- Piping systems
  - Aerospace
  - Compressed Gas
  - Drilling
  - Petrochemical
  - Refining
  - Shipbuilding

## Features

- Excellent for vacuum service and high purity gases
- Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Ring\*
- Line size options:
  - 1/8" to 2.00" Tube size
  - 1/8" to 1.50" Pipe size

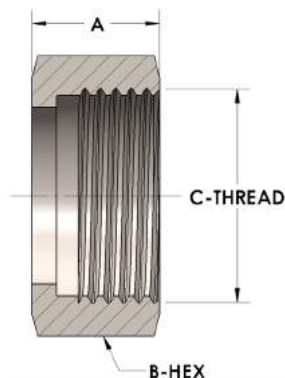
Mark VIII® Union Assemblies come standard with Viton® O-Ring, unless otherwise specified.

\*See ordering matrix on page 35 for temperature ranges of optional O-Ring materials.



Common Fitting Materials	Ordering Data (for end of Part No.)
316/L Stainless Steel	<b>-SS316L</b>
Monel®	<b>-M</b>
Nickel-Aluminum-Bronze	<b>-NAB</b>
Carbon Steel	<b>-S</b>
Naval Brass	<b>-BR</b>
Copper-Nickel 70-30	<b>-CUNI</b>

## H850N - Union Nut



Material Options Available: -SS316L, -M, -NAB, -S, -BR

Tube Size	Union Nut			Pressure Ratings					
	Part No.	A	B-HEX	C-THREAD	-SS316L	-M	-NAB	-S	-BR
1/8	H850N-02	0.38	0.50	.438"-20UNF	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/4	H850N-04	0.38	0.63	.563"-18UNF	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/8	H850N-06	0.44	0.81	.688"-16UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1/2	H850N-08	0.50	0.94	.813"-16UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
5/8	H850N-10	0.59	1.13	1.000"-14UNS	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/4	H850N-12	0.59	1.38	1.250"-12UNF	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.00	H850N-16	0.75	1.63	1.500"-12UNF	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.25	H850N-20	0.75	2.00	1.750"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*
1.50	H850N-24	0.81	2.38	2.125"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*
2.00	H850N-32	0.81	3.25	2.875"-12UN	6000 PSI	6000 PSI	6000 PSI	6000 PSI	*

\*Not available in size and material.



# Mark VIII® Tube Fittings

## Tailpieces

EXAMPLE

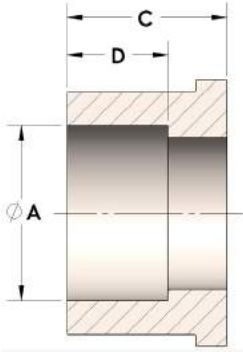
**Tailpiece**

**H849R**

**-08**

**-BR**

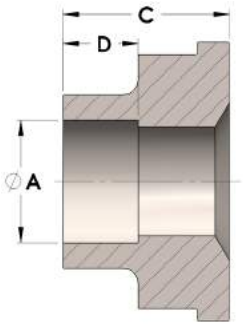
### H849R - Socketweld/braze Tube Tailpiece



Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube Tailpiece				Pressure Ratings		
Part No.	Tube O.D.	C	D	-SS316L	-M	-S
	A					
H849R-02	0.13	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-04	0.25	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-06	0.38	0.44	0.25	6000 PSI	6000 PSI	6000 PSI
H849R-08	0.50	0.50	0.31	4500 PSI	6000 PSI	4500 PSI
H849R-10	0.63	0.63	0.38	4500 PSI	6000 PSI	4500 PSI
H849R-12	0.75	0.69	0.44	6000 PSI	6000 PSI	4500 PSI
H849R-16	1.00	0.81	0.50	4500 PSI	6000 PSI	3000 PSI
H849R-20	1.25	0.88	0.56	3000 PSI	4500 PSI	3000 PSI
H849R-24	1.50	0.94	0.63	3000 PSI	4500 PSI	3000 PSI
H849R-32	2.00	1.25	0.88	4500 PSI	6000 PSI	4500 PSI

### H849R - Socketweld/braze Tube Reducing Tailpiece



Material Options Available: -SS316L, -M, -S

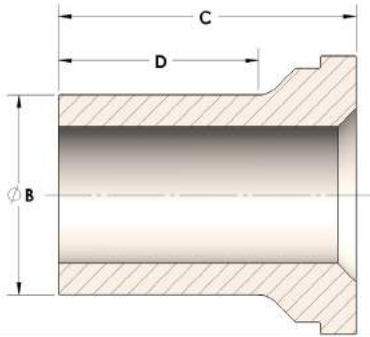
Socketweld/braze Tube Reducing Tailpiece				Pressure Ratings		
Part No.	Tube O.D.	C	D	-SS316L	-M	-S
	A					
H849R-04-02	0.13	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-06-02	0.13	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-08-02	0.13	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-06-04	0.25	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-08-04	0.25	0.38	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-10-04	0.25	0.44	0.19	6000 PSI	6000 PSI	6000 PSI
H849R-08-06	0.38	0.44	0.25	6000 PSI	6000 PSI	6000 PSI
H849R-10-06	0.38	0.50	0.25	6000 PSI	6000 PSI	6000 PSI
H849R-12-06	0.38	0.69	0.25	6000 PSI	6000 PSI	6000 PSI
H849R-10-08	0.50	0.56	0.31	4500 PSI	6000 PSI	4500 PSI
H849R-12-08	0.50	0.69	0.31	4500 PSI	6000 PSI	4500 PSI
H849R-16-08	0.50	0.81	0.31	4500 PSI	6000 PSI	4500 PSI
H849R-12-10	0.63	0.69	0.38	4500 PSI	6000 PSI	4500 PSI
H849R-16-10	0.63	0.81	0.38	4500 PSI	6000 PSI	4500 PSI
H849R-20-10	0.63	0.88	0.38	4500 PSI	6000 PSI	4500 PSI
H849R-16-12	0.75	0.81	0.44	6000 PSI	6000 PSI	6000 PSI
H849R-20-12	0.75	0.88	0.44	6000 PSI	6000 PSI	6000 PSI
H849R-24-12	0.75	0.94	0.44	6000 PSI	6000 PSI	6000 PSI
H849R-20-16	1.00	0.88	0.50	4500 PSI	6000 PSI	3000 PSI
H849R-24-16	1.00	0.94	0.50	4500 PSI	6000 PSI	3000 PSI
H849R-32-16	1.00	1.25	0.50	4500 PSI	6000 PSI	3000 PSI
H849R-24-20	1.25	0.94	0.56	3000 PSI	4500 PSI	3000 PSI
H849R-32-20	1.25	1.25	0.56	3000 PSI	4500 PSI	3000 PSI
H849R-32-24	1.50	1.25	0.63	4500 PSI	6000 PSI	3000 PSI

Additional Reducing Tailpieces are available. Please contact customer service.

# Mark VIII® Tube Fittings

EXAMPLE **Tailpiece** **H863R** **-04** **-SS316L**

## H863R - Male Tube Weld Tailpiece



Material Options Available: -SS316L, -M, -S

Male Tube Weld/braze Tailpiece				Pressure Ratings		
Part No.	Tube O.D.	C	D	-SS316L	-M	-S
	B*					
H863R-02	0.13	0.75	0.50	6000 PSI	6000 PSI	6000 PSI
H863R-04	0.25	0.81	0.56	6000 PSI	6000 PSI	6000 PSI
H863R-06	0.38	0.88	0.56	6000 PSI	6000 PSI	6000 PSI
H863R-08	0.50	1.00	0.68	6000 PSI	6000 PSI	6000 PSI
H863R-10	0.63	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H863R-12	0.75	1.31	0.94	6000 PSI	6000 PSI	6000 PSI
H863R-16	1.00	1.50	1.06	6000 PSI	6000 PSI	6000 PSI
H863R-20	1.25	1.69	1.25	3000 PSI	4500 PSI	3000 PSI
H863R-24	1.50	1.88	1.38	3000 PSI	4500 PSI	3000 PSI
H849R-32	2.00	2.25	1.56	3000 PSI	4500 PSI	3000 PSI

\*For welding or brazing into a socket.

## H804R - Blank Tailpiece



Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Tube Size	Blank Tailpiece		Pressure Ratings				
	Part No.	C	-SS316L	-M	-S	-BR	-CUNI
1/8	H804R-02	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
1/4	H804R-04	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
3/8	H804R-06	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1/2	H804R-08	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
5/8	H804R-10	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
3/4	H804R-12	0.69	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.00	H804R-16	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
1.25	H804R-20	0.88	6000 PSI	6000 PSI	6000 PSI	6000 PSI	3000 PSI
1.50	H804R-24	0.94	6000 PSI	6000 PSI	6000 PSI	4500 PSI	4500 PSI
2.00	H804R-32	1.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI

# Mark VIII® Tube Fittings

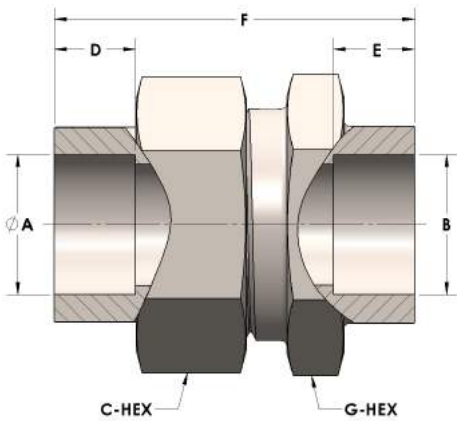
## Union Assemblies\*

\*Unions come standard with Viton® O-Ring, unless otherwise specified.

EXAMPLE

<b>Union Assembly</b>	<b>H849</b>	<b>-06</b>	<b>-M</b>
-----------------------	-------------	------------	-----------

## H849 - Socketweld/braze Tube Union Assembly



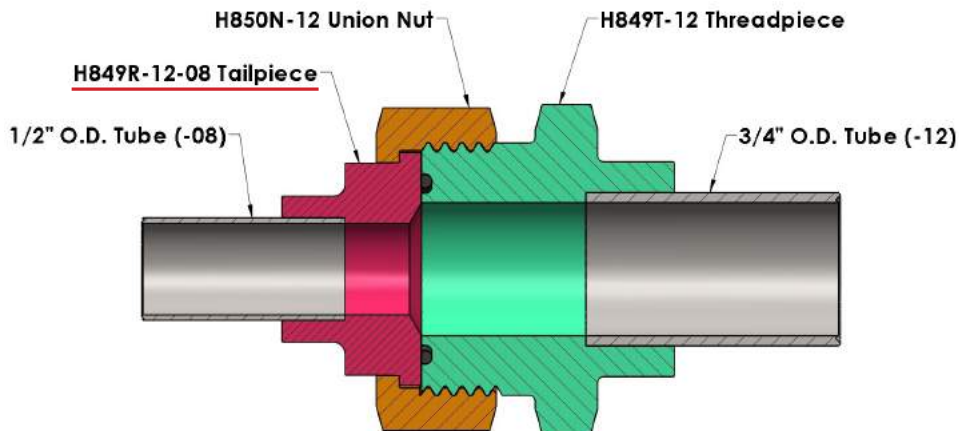
Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube Union Assembly								Pressure Ratings		
Part No.	Tube O.D.		C-HEX	D	E	F	G-HEX	-SS316L	-M	-S
	A	B								
H849-02	0.13	0.13	0.50	0.19	0.19	1.00	0.50	6000 PSI	6000 PSI	6000 PSI
H849-04	0.25	0.25	0.63	0.19	0.19	1.00	0.63	6000 PSI	6000 PSI	6000 PSI
H849-06	0.38	0.38	0.81	0.25	0.25	1.25	0.75	6000 PSI	6000 PSI	6000 PSI
H849-08	0.50	0.50	0.94	0.31	0.31	1.44	0.88	4500 PSI	6000 PSI	4500 PSI
H849-10	0.63	0.63	1.13	0.38	0.38	1.69	1.06	4500 PSI	6000 PSI	4500 PSI
H849-12	0.75	0.75	1.38	0.44	0.44	1.94	1.38	6000 PSI	6000 PSI	4500 PSI
H849-16	1.00	1.00	1.63	0.50	0.50	2.19	1.63	4500 PSI	6000 PSI	3000 PSI
H849-20	1.25	1.25	2.00	0.56	0.56	2.31	1.88	3000 PSI	4500 PSI	3000 PSI
H849-24	1.50	1.50	2.38	0.63	0.63	2.50	2.25	3000 PSI	4500 PSI	3000 PSI
H849-32	2.00	2.00	3.25	0.88	0.88	3.19	3.00	4500 PSI	6000 PSI	4500 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

## Reducing Union Assembly Example

For the tailpiece (underlined in red): A double dash number indicates a reducer. The first dash number must agree with the dash number for the union nut. The second dash number represents the tube size.



Tube to Tube Reducing Union Assembly  
H849-08-12

# Mark VIII® Tube Fittings

## Union Assemblies

EXAMPLE

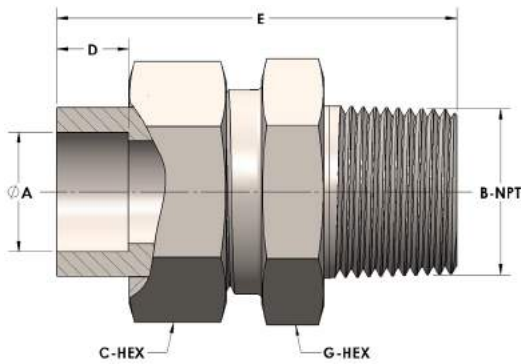
**Union Assembly**

**H853**

**-12-12**

**-S**

## H854 - Tube to Male Pipe Thread Union Assembly

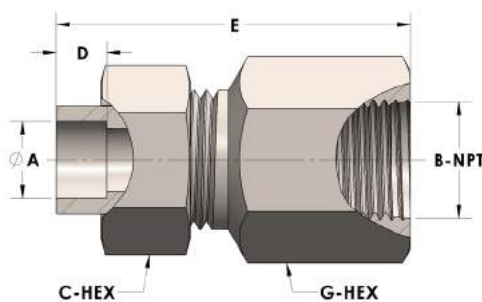


Material Options Available: -SS316L, -M, -S

Tube to Male Pipe Thread <i>Union Assembly</i>							Pressure Ratings		
Part No.	Tube O.D.	B-NPT	C-HEX	D	E	G-HEX	-SS316L	-M	-S
	A								
H854-02-02	0.13	1/8"-27	0.63	0.19	1.38	0.63	6000 PSI	6000 PSI	6000 PSI
H854-02-04	0.13	1/4"-18	0.63	0.19	1.56	0.63	6000 PSI	6000 PSI	6000 PSI
H854-04-02	0.25	1/8"-27	0.63	0.19	1.38	0.63	6000 PSI	6000 PSI	6000 PSI
H854-04-04	0.25	1/4"-18	0.63	0.19	1.56	0.63	6000 PSI	6000 PSI	6000 PSI
H854-04-06	0.25	3/8"-18	0.94	0.19	1.75	0.88	6000 PSI	6000 PSI	6000 PSI
H854-04-08	0.25	1/2"-14	0.94	0.19	1.94	0.88	6000 PSI	6000 PSI	6000 PSI
H854-06-04	0.38	1/4"-18	0.81	0.25	1.75	0.75	4500 PSI	6000 PSI	4500 PSI
H854-06-06	0.38	3/8"-18	0.94	0.25	1.81	0.88	6000 PSI	6000 PSI	6000 PSI
H854-06-08	0.38	1/2"-14	0.94	0.25	2.00	0.88	6000 PSI	6000 PSI	6000 PSI
H854-08-06	0.50	3/8"-18	0.94	0.31	1.88	0.88	4500 PSI	6000 PSI	3000 PSI
H854-08-08	0.50	1/2"-14	0.94	0.31	2.06	0.88	4500 PSI	6000 PSI	4500 PSI
H854-08-12	0.50	3/4"-14	1.38	0.31	2.31	1.38	4500 PSI	6000 PSI	4500 PSI
H854-10-08	0.63	1/2"-14	1.13	0.38	2.25	1.06	3000 PSI	6000 PSI	3000 PSI
H854-10-12	0.63	3/4"-14	1.38	0.38	2.38	1.38	4500 PSI	6000 PSI	4500 PSI
H854-12-12	0.75	3/4"-14	1.38	0.44	2.44	1.38	6000 PSI	6000 PSI	4500 PSI
H854-12-16	0.75	1.000"-11.5	1.63	0.44	2.75	1.63	4500 PSI	6000 PSI	4500 PSI
H854-16-16	1.00	1.000"-11.5	1.63	0.50	2.81	1.63	4500 PSI	6000 PSI	3000 PSI
H854-20-20	1.25	1.250"-11.5	2.00	0.56	2.94	1.88	3000 PSI	4500 PSI	3000 PSI
H854-24-24	1.50	1.500"-11.5	2.38	0.63	3.19	2.25	3000 PSI	4500 PSI	3000 PSI
H854-32-32	2.00	2.500"-8	3.25	0.88	3.63	3.00	4500 PSI	6000 PSI	4500 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

## H853 - Tube to Female Pipe Thread Union Assembly



Material Options Available: -SS316L, -M, -S

Tube to Female Pipe Thread <i>Union Assembly</i>							Pressure Ratings		
Part No.	Tube O.D.	B-NPT	C-HEX	D	E	G-HEX	-SS316L	-M	-S
	A								
H853-02-02	0.13	1/8"-27	0.63	0.19	1.50	0.63	6000 PSI	6000 PSI	6000 PSI
H853-04-02	0.25	1/8"-27	0.63	0.19	1.50	0.63	6000 PSI	6000 PSI	6000 PSI
H853-04-04	0.25	1/4"-18	0.81	0.19	1.69	0.75	6000 PSI	6000 PSI	6000 PSI
H853-04-06	0.25	3/8"-18	0.94	0.19	1.88	0.88	4500 PSI	6000 PSI	4500 PSI
H853-06-04	0.38	1/4"-18	0.81	0.25	1.75	0.75	6000 PSI	6000 PSI	6000 PSI
H853-06-06	0.38	3/8"-18	0.94	0.25	1.94	0.88	4500 PSI	6000 PSI	4500 PSI
H853-06-08	0.38	1/2"-14	1.13	0.25	2.25	1.13	4500 PSI	6000 PSI	4500 PSI
H853-08-06	0.50	3/8"-18	0.94	0.31	2.00	0.88	4500 PSI	6000 PSI	4500 PSI
H853-08-08	0.50	1/2"-14	1.13	0.31	2.31	1.13	4500 PSI	6000 PSI	4500 PSI
H853-08-12	0.50	3/4"-14	1.38	0.31	2.44	1.38	4500 PSI	6000 PSI	4500 PSI
H853-10-08	0.63	1/2"-14	1.13	0.38	2.38	1.13	4500 PSI	6000 PSI	4500 PSI
H853-10-12	0.63	3/4"-14	1.38	0.38	2.50	1.38	4500 PSI	6000 PSI	4500 PSI
H853-12-12	0.75	3/4"-14	1.38	0.44	2.50	1.38	4500 PSI	6000 PSI	4500 PSI
H853-12-16	0.75	1.000"-11.5	1.63	0.44	2.81	1.75	4500 PSI	6000 PSI	4500 PSI
H853-16-16	1.00	1.000"-11.5	1.63	0.50	2.88	1.75	4500 PSI	6000 PSI	3000 PSI
H853-20-20	1.25	1.250"-11.5	2.00	0.56	3.00	2.25	3000 PSI	4500 PSI	3000 PSI
H853-24-24	1.50	1.500"-11.5	2.38	0.63	3.06	2.50	3000 PSI	4500 PSI	3000 PSI
H853-32-32	2.00	2.500"-8	3.25	0.88	3.50	3.00	4500 PSI	6000 PSI	3000 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

# Mark VIII® Tube Fittings

## Union Assemblies

EXAMPLE

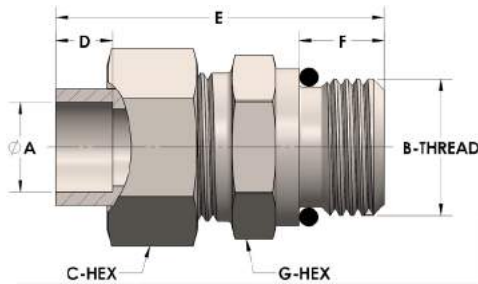
**Union Assembly**

**H859**

**-12-16**

**-SS316L**

### H859 - Tube to Male Straight Thread Union Assembly

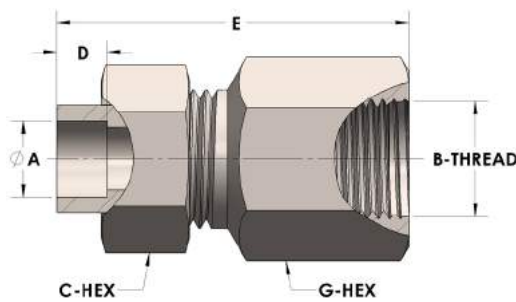


Material Options Available: -SS316L, -M, -S

Tube to Male Straight Thread <i>Union Assembly</i>								Pressure Ratings		
Part No.	Tube O.D. A	B-THREAD	C-HEX	D	E	F	G-HEX	-SS316L	-M	-S
H859-02-02	0.13	.313"-24UNF	0.50	0.19	1.38	0.36	0.50	6000 PSI	6000 PSI	6000 PSI
H859-02-04	0.13	.438"-20UNF	0.63	0.19	1.44	0.41	0.63	6000 PSI	6000 PSI	6000 PSI
H859-04-04	0.25	.438"-20UNF	0.63	0.19	1.44	0.41	0.63	6000 PSI	6000 PSI	6000 PSI
H859-04-06	0.25	.563"-18UNF	0.81	0.19	1.56	0.43	0.75	6000 PSI	6000 PSI	6000 PSI
H859-04-08	0.25	.750"-16UNF	0.94	0.19	1.69	0.47	0.88	6000 PSI	6000 PSI	6000 PSI
H859-06-06	0.38	.563"-18UNF	0.81	0.25	1.63	0.43	0.75	6000 PSI	6000 PSI	6000 PSI
H859-06-08	0.38	.750"-16UNF	0.94	0.25	1.75	0.47	0.88	6000 PSI	6000 PSI	6000 PSI
H859-06-10	0.38	.875"-14UNF	1.13	0.25	1.94	0.53	1.06	6000 PSI	6000 PSI	6000 PSI
H859-08-08	0.50	.750"-16UNF	0.94	0.31	1.81	0.47	0.88	4500 PSI	6000 PSI	4500 PSI
H859-08-10	0.50	.875"-14UNF	1.13	0.31	2.00	0.53	1.06	4500 PSI	6000 PSI	4500 PSI
H859-08-12	0.50	1.063"-12UN	1.38	0.31	2.19	0.63	1.38	4500 PSI	6000 PSI	4500 PSI
H859-10-10	0.63	.875"-14UNF	1.13	0.38	2.06	0.53	1.06	4500 PSI	6000 PSI	4500 PSI
H859-10-12	0.63	1.063"-12UN	1.38	0.38	2.25	0.63	1.38	4500 PSI	6000 PSI	4500 PSI
H859-12-12	0.75	1.063"-12UN	1.38	0.44	2.31	0.63	1.38	6000 PSI	6000 PSI	4500 PSI
H859-12-16	0.75	1.313"-12UN	1.63	0.44	2.50	0.63	1.63	6000 PSI	6000 PSI	6000 PSI
H859-16-16	1.00	1.313"-12UN	1.63	0.50	2.56	0.63	1.63	4500 PSI	6000 PSI	3000 PSI
H859-20-20	1.25	1.625"-12UN	2.00	0.56	2.69	0.63	1.88	3000 PSI	4500 PSI	3000 PSI
H859-24-24	1.50	1.875"-12UN	2.38	0.63	2.81	0.63	2.25	3000 PSI	4500 PSI	3000 PSI
H859-32-32	2.00	2.500"-12UN	3.25	0.88	3.25	0.63	3.00	4500 PSI	6000 PSI	4500 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

### H864 - Tube to Female Straight Thread Union Assembly



Material Options Available: -SS316L, -M, -S

Tube to Female Straight Thread <i>Union Assembly</i>								Pressure Ratings		
Part No.	Tube O.D. A	B-THREAD	C-HEX	D	E	G-HEX	-SS316L	-M	-S	
H864-02-04	0.13	.438"-20UNF	0.63	0.19	1.50	0.75	6000 PSI	6000 PSI	6000 PSI	
H864-04-04	0.25	.438"-20UNF	0.63	0.19	1.50	0.75	6000 PSI	6000 PSI	6000 PSI	
H864-04-06	0.25	.563"-18UNF	0.81	0.19	1.69	0.88	6000 PSI	6000 PSI	6000 PSI	
H864-04-08	0.25	.750"-16UNF	0.94	0.19	1.88	1.06	6000 PSI	6000 PSI	6000 PSI	
H864-06-06	0.38	.563"-18UNF	0.81	0.25	1.75	0.88	6000 PSI	6000 PSI	6000 PSI	
H864-06-08	0.38	.750"-16UNF	0.94	0.25	1.94	1.06	6000 PSI	6000 PSI	6000 PSI	
H864-06-10	0.38	.875"-14UNF	1.13	0.25	2.25	1.13	4500 PSI	6000 PSI	4500 PSI	
H864-08-08	0.50	.750"-16UNF	0.94	0.31	2.00	1.06	4500 PSI	6000 PSI	4500 PSI	
H864-08-10	0.50	.875"-14UNF	1.13	0.31	2.31	1.13	4500 PSI	6000 PSI	4500 PSI	
H864-08-12	0.50	1.063"-12UN	1.38	0.31	2.44	1.38	4500 PSI	6000 PSI	4500 PSI	
H864-10-10	0.63	.875"-14UNF	1.13	0.38	2.38	1.13	4500 PSI	6000 PSI	4500 PSI	
H864-10-12	0.63	1.063"-12UN	1.38	0.38	2.50	1.38	4500 PSI	6000 PSI	4500 PSI	
H864-12-12	0.75	1.063"-12UN	1.38	0.44	2.56	1.38	4500 PSI	6000 PSI	4500 PSI	
H864-12-16	0.75	1.313"-12UN	1.63	0.44	2.81	1.63	3000 PSI	4500 PSI	3000 PSI	
H864-16-16	1.00	1.313"-12UN	1.63	0.50	2.88	1.63	3000 PSI	4500 PSI	3000 PSI	
H864-20-20	1.25	1.625"-12UN	2.00	0.56	3.00	2.00	3000 PSI	4500 PSI	3000 PSI	
H864-24-24	1.50	1.875"-12UN	2.38	0.63	3.16	2.25	3000 PSI	4500 PSI	3000 PSI	
H864-32-32	2.00	2.500"-12UN	3.25	0.88	3.50	3.00	3000 PSI	4500 PSI	3000 PSI	

Increasing Union Assemblies are available. Please contact customer service.



# Mark VIII® Tube Fittings

## Union Assemblies

EXAMPLE

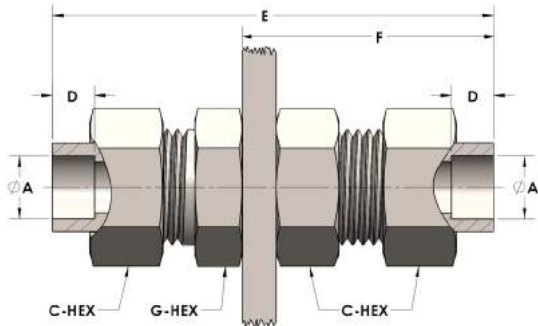
**Union Assembly**

**H863**

**-24**

**-M**

### H890 - Socketweld/braze Tube Bulkhead Union Assembly



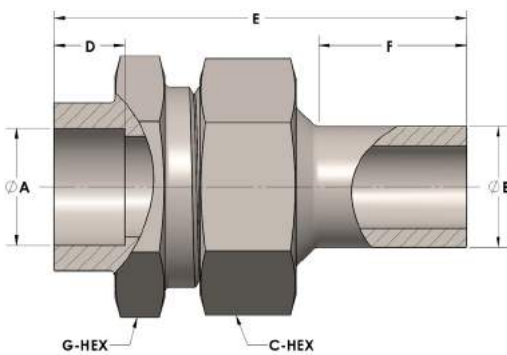
Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube Bulkhead Union Assembly								Pressure Ratings			
Part No.	Tube O.D.		C-HEX	D	E	F	G-HEX	Panel Bore Dia.*	-SS316L	-M	-S
	A	B*									
H890-02	0.13	0.50	0.19	2.31	1.38	0.63	0.47	6000 PSI	6000 PSI	6000 PSI	
H890-04	0.25	0.63	0.19	2.31	1.38	0.63	0.59	6000 PSI	6000 PSI	6000 PSI	
H890-06	0.38	0.81	0.25	2.63	1.50	0.75	0.72	6000 PSI	6000 PSI	6000 PSI	
H890-08	0.50	0.94	0.31	3.00	1.69	0.88	0.84	4500 PSI	6000 PSI	4500 PSI	
H890-10	0.63	1.13	0.38	3.50	1.94	1.06	1.04	4500 PSI	6000 PSI	4500 PSI	
H890-12	0.75	1.38	0.44	3.63	2.00	1.38	1.28	6000 PSI	6000 PSI	4500 PSI	
H890-16	1.00	1.63	0.50	4.00	2.19	1.63	1.53	4500 PSI	6000 PSI	3000 PSI	
H890-20	1.25	2.00	0.56	4.13	2.25	1.88	1.78	3000 PSI	4500 PSI	3000 PSI	
H890-24	1.50	2.38	0.63	4.38	2.38	2.25	2.19	3000 PSI	4500 PSI	3000 PSI	
H890-32	2.00	3.25	0.88	5.38	2.88	3.00	2.94	4500 PSI	6000 PSI	4500 PSI	

\*Panel Thickness: Maximum - 1/2"; Minimum - 1/16".

Reducing Union Assemblies are available. Please contact customer service.

### H863 - Socketweld/braze Tube to Male Tube Union Assembly



Material Options Available: -SS316L, -M, -S

Tube to Male Tube Union Assembly								Pressure Ratings		
Part No.	Tube O.D.		C-HEX	D	E	F	G-HEX	-SS316L	-M	-S
	A	B*								
H863-04	0.25	0.25	0.63	0.19	1.31	0.44	0.63	6000 PSI	6000 PSI	6000 PSI
H863-06	0.38	0.38	0.81	0.25	1.69	0.56	0.75	6000 PSI	6000 PSI	6000 PSI
H863-08	0.50	0.50	0.94	0.31	1.94	0.69	0.88	4500 PSI	6000 PSI	4500 PSI
H863-10	0.63	0.63	1.13	0.38	2.25	0.81	1.06	4500 PSI	6000 PSI	4500 PSI
H863-12	0.75	0.75	1.38	0.44	2.56	0.94	1.38	6000 PSI	6000 PSI	4500 PSI
H863-16	1.00	1.00	1.63	0.50	2.88	1.06	1.63	4500 PSI	6000 PSI	4500 PSI
H863-20	1.25	1.25	2.00	0.56	3.13	1.25	1.88	3000 PSI	4500 PSI	3000 PSI
H863-24	1.50	1.50	2.38	0.63	3.44	1.38	2.25	3000 PSI	4500 PSI	3000 PSI

\*For welding or brazing into a socket.

Reducing and Increasing Union Assemblies are available. Please contact customer service.

# Mark VIII® Tube Fittings

## Elbow Assemblies

EXAMPLE

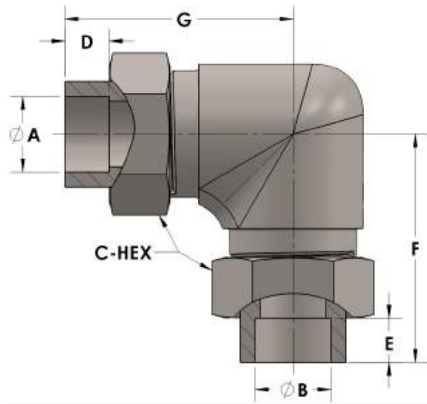
**Elbow Assembly**

**H821**

**-04-02**

**-S**

### H820 - Socketweld/braze Tube Elbow Assembly

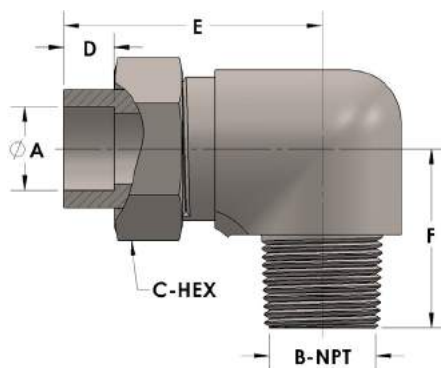


Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube <i>Elbow Assembly</i>							Pressure Ratings			
Part No.	Tube O.D.		C-HEX	D	E	F	G	-SS316L	-M	-S
	A	B								
H820-04	0.25	0.25	0.63	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H820-04-02	0.25	0.13	0.63	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H820-06	0.38	0.38	0.81	0.25	0.25	1.50	1.50	6000 PSI	6000 PSI	6000 PSI
H820-06-04	0.38	0.25	0.81	0.19	0.19	1.44	1.50	6000 PSI	6000 PSI	6000 PSI
H820-08	0.50	0.50	0.94	0.31	0.31	1.69	1.69	4500 PSI	6000 PSI	4500 PSI
H820-08-06	0.50	0.38	0.94	0.31	0.25	1.63	1.69	4500 PSI	6000 PSI	4500 PSI
H820-10	0.63	0.63	1.13	0.38	0.38	2.06	2.06	4500 PSI	6000 PSI	4500 PSI
H820-10-08	0.63	0.50	1.13	0.38	0.31	2.00	2.06	4500 PSI	6000 PSI	4500 PSI
H820-12	0.75	0.75	1.38	0.44	0.44	2.25	2.25	6000 PSI	6000 PSI	4500 PSI
H820-12-10	0.75	0.63	1.38	0.44	0.38	2.19	2.25	4500 PSI	6000 PSI	4500 PSI
H820-16	1.00	1.00	1.63	0.50	0.50	2.75	2.75	4500 PSI	6000 PSI	3000 PSI
H820-16-12	1.00	0.75	1.63	0.50	0.44	2.69	2.75	4500 PSI	6000 PSI	3000 PSI
H820-20	1.25	1.25	2.00	0.56	0.56	3.06	3.06	3000 PSI	4500 PSI	3000 PSI
H820-24	1.50	1.50	2.38	0.63	0.63	3.31	3.31	3000 PSI	4500 PSI	3000 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

### H821 - Tube to Male Pipe Thread Elbow Assembly



Material Options Available: -SS316L, -M, -S

Tube to Male Pipe Thread <i>Elbow Assembly</i>							Pressure Ratings		
Part No.	Tube O.D.	B-NPT	C-HEX	D	E	F	-SS316L	-M	-S
	A								
H821-02-02	0.13	1/8"-27	0.63	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H821-04-02	0.25	1/8"-27	0.63	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H821-04-04	0.25	1/4"-18	0.63	0.19	1.19	1.06	6000 PSI	6000 PSI	6000 PSI
H821-04-06	0.25	3/8"-18	0.94	0.19	1.56	1.19	3000 PSI	3000 PSI	3000 PSI
H821-06-04	0.38	1/4"-18	0.81	0.25	1.50	1.06	6000 PSI	4500 PSI	4500 PSI
H821-06-06	0.38	3/8"-18	0.94	0.25	1.63	1.19	3000 PSI	3000 PSI	3000 PSI
H821-06-08	0.38	1/2"-14	0.94	0.25	1.63	1.44	6000 PSI	6000 PSI	6000 PSI
H821-08-06	0.50	3/8"-18	0.94	0.31	1.69	1.19	3000 PSI	3000 PSI	3000 PSI
H821-08-08	0.50	1/2"-14	0.94	0.31	1.69	1.44	4500 PSI	6000 PSI	4500 PSI
H821-08-12	0.50	3/4"-14	1.38	0.31	2.13	1.56	4500 PSI	4500 PSI	4500 PSI
H821-10-08	0.63	1/2"-14	1.13	0.38	2.06	1.44	4500 PSI	3000 PSI	3000 PSI
H821-10-12	0.63	3/4"-14	1.38	0.38	2.19	1.56	4500 PSI	4500 PSI	4500 PSI
H821-12-12	0.75	3/4"-14	1.38	0.44	2.25	1.56	6000 PSI	4500 PSI	4500 PSI
H821-12-16	0.75	1.000"-11.5	1.63	0.44	2.69	1.94	4500 PSI	3000 PSI	4500 PSI
H821-16-16	1.00	1.000"-11.5	1.63	0.50	2.75	1.94	4500 PSI	3000 PSI	3000 PSI
H821-20-20	1.25	1.250"-11.5	2.00	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H821-24-24	1.50	1.500"-11.5	2.38	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI
H821-24-32	1.50	2.500"-8	3.25	0.63	3.00	2.69	4500 PSI	4500 PSI	3000 PSI
H821-32-32	2.00	2.500"-8	3.25	0.88	3.31	2.69	4500 PSI	4500 PSI	4500 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

# Mark VIII® Tube Fittings

## Elbow Assemblies

EXAMPLE

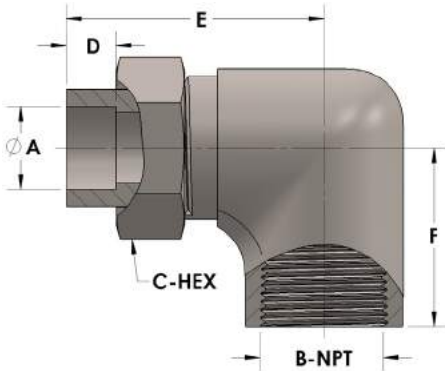
**Elbow Assembly**

**H823**

**-10-10**

**-SS316L**

### H822 - Tube to Female Pipe Thread Elbow Assembly

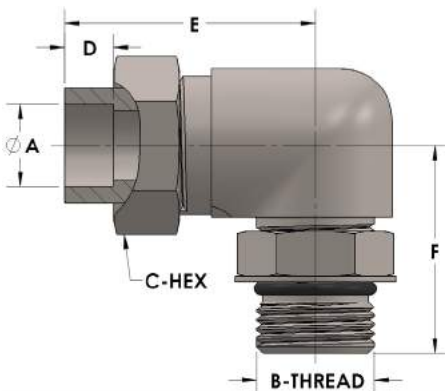


Material Options Available: -SS316L, -M, -S

Tube to Female Pipe Thread <i>Elbow Assembly</i>							Pressure Ratings		
Part No.	Tube O.D.	B-NPT	C-HEX	D	E	F	-SS316L	-M	-S
	A								
H822-02-02	0.13	1/8"-27	0.63	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H822-04-02	0.25	1/8"-27	0.63	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H822-04-04	0.25	1/4"-18	0.81	0.19	1.44	1.06	6000 PSI	4500 PSI	6000 PSI
H822-04-06	0.25	3/8"-18	0.94	0.19	1.56	1.19	4500 PSI	3000 PSI	4500 PSI
H822-06-04	0.38	1/4"-18	0.81	0.25	1.50	1.06	6000 PSI	4500 PSI	6000 PSI
H822-06-06	0.38	3/8"-18	0.94	0.25	1.63	1.19	4500 PSI	3000 PSI	4500 PSI
H822-06-08	0.38	1/2"-14	0.94	0.25	1.94	1.44	4500PSI	4500 PSI	4500PSI
H822-08-06	0.50	3/8"-18	1.13	0.31	1.69	1.19	4500 PSI	3000 PSI	4500 PSI
H822-08-08	0.50	1/2"-14	0.94	0.31	2.00	1.44	4500 PSI	4500 PSI	4500 PSI
H822-08-12	0.50	3/4"-14	1.13	0.31	2.13	1.56	4500 PSI	3000 PSI	4500 PSI
H822-10-08	0.63	1/2"-14	1.38	0.38	2.06	1.44	4500PSI	4500 PSI	4500PSI
H822-10-12	0.63	3/4"-14	1.13	0.38	2.19	1.56	4500 PSI	3000 PSI	4500 PSI
H822-12-12	0.75	3/4"-14	1.38	0.44	2.25	1.56	4500 PSI	3000 PSI	4500PSI
H822-12-16	0.75	1.000"-11.5	1.38	0.44	2.94	2.19	6000 PSI	4500 PSI	6000 PSI
H822-16-12	1.00	3/4"-14	2.00	0.50	2.75	1.94	4500 PSI	6000 PSI	3000 PSI
H822-16-16	1.00	1.000"-11.5	1.63	0.50	3.00	2.19	4500 PSI	4500 PSI	3000 PSI
H822-20-16	1.25	1.000"-11.5	2.00	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H822-20-20	1.25	1.250"-11.5	2.00	0.56	3.25	2.38	3000 PSI	4500 PSI	3000 PSI
H822-24-20	1.50	1.250"-11.5	2.38	0.56	3.31	2.38	3000 PSI	4500 PSI	3000 PSI
H822-24-24	1.50	1.500"-11.5	2.38	0.63	3.31	2.38	3000 PSI	3000 PSI	3000 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

### H823 - Tube to Male Straight Thread Elbow Assembly



Material Options Available: -SS316L, -M, -S

Tube to Male Straight Thread <i>Elbow Assembly</i>							Pressure Ratings		
Part No.	Tube O.D.	B-THREAD	C-HEX	D	E	F	-SS316L	-M	-S
	A								
H823-02-04	0.13	.438"-20UNF	0.63	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H823-04-04	0.25	.438"-20UNF	0.63	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H823-04-06	0.25	.563"-18UNF	0.81	0.19	1.44	1.25	6000 PSI	6000 PSI	6000 PSI
H823-04-08	0.25	.750"-16UNF	0.94	0.19	1.56	1.44	6000 PSI	6000 PSI	6000 PSI
H823-06-06	0.38	.563"-18UNF	0.81	0.25	1.50	1.25	6000 PSI	6000 PSI	6000 PSI
H823-06-08	0.38	.750"-16UNF	0.94	0.25	1.63	1.44	6000 PSI	6000 PSI	6000 PSI
H823-06-10	0.38	.875"-14UNF	1.13	0.25	1.94	1.69	6000 PSI	6000 PSI	6000 PSI
H823-08-08	0.50	.750"-16UNF	0.94	0.31	1.69	1.44	4500 PSI	6000 PSI	4500 PSI
H823-08-10	0.50	.875"-14UNF	1.13	0.31	2.00	1.69	4500 PSI	6000 PSI	4500 PSI
H823-08-12	0.50	1.063"-12UN	1.38	0.31	2.13	1.94	4500 PSI	6000 PSI	4500 PSI
H823-10-10	0.63	.875"-14UNF	1.13	0.38	2.06	1.69	4500 PSI	6000 PSI	4500 PSI
H823-10-12	0.63	1.063"-12UN	1.38	0.38	2.19	1.94	4500 PSI	6000 PSI	4500 PSI
H823-12-12	0.75	1.063"-12UN	1.38	0.44	2.25	1.94	6000 PSI	6000 PSI	4500 PSI
H823-12-16	0.75	1.313"-12UN	1.63	0.44	2.69	2.06	6000 PSI	4500 PSI	6000 PSI
H823-16-16	1.00	1.313"-12UN	1.63	0.50	2.75	2.06	4500 PSI	4500 PSI	3000 PSI
H823-20-20	1.25	1.625"-12UN	2.00	0.56	3.06	2.25	3000 PSI	4500 PSI	3000 PSI
H823-24-24	1.50	1.875"-12UN	2.38	0.63	3.31	2.44	3000 PSI	4500 PSI	3000 PSI

Reducing and Increasing Union Assemblies are available. Please contact customer service.

# Mark VIII® Tube Fittings

## Tee Assemblies

EXAMPLE

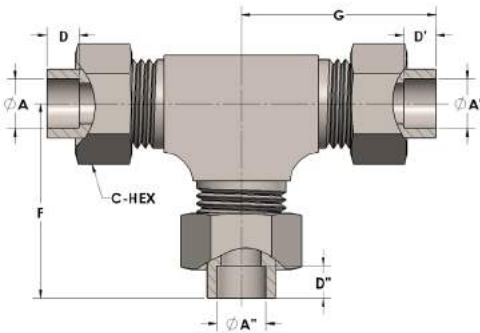
**Tee Assembly**

**H810**

**-20**

**-M**

### H810 - Socketweld/braze Tube Tee Assembly

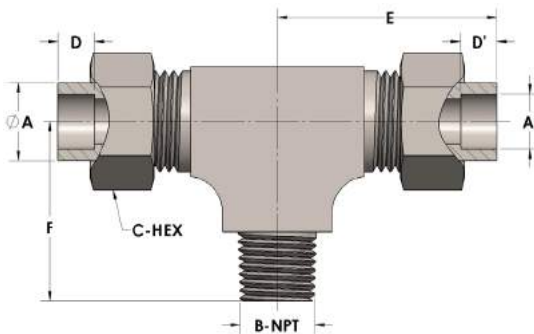


Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube Tee Assembly										Pressure Ratings		
Part No.	Tube O.D.			C-HEX	D	D'	D''	F	G	-SS316L	-M	-S
	A	A'	A''									
H810-04	0.25	0.25	0.25	0.63	0.19	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H810-04-04-02	0.25	0.25	0.13	0.63	0.19	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H810-06	0.38	0.38	0.38	0.81	0.25	0.25	0.25	1.50	1.50	6000 PSI	6000 PSI	6000 PSI
H810-06-06-04	0.38	0.38	0.25	0.81	0.25	0.25	0.19	1.50	1.50	6000 PSI	6000 PSI	6000 PSI
H810-08	0.50	0.50	0.50	0.94	0.31	0.31	0.31	1.69	1.69	4500 PSI	6000 PSI	4500 PSI
H810-08-08-06	0.50	0.50	0.38	0.94	0.31	0.31	0.25	1.69	1.69	4500 PSI	6000 PSI	4500 PSI
H810-10	0.63	0.63	0.63	1.13	0.38	0.38	0.38	2.06	2.06	4500 PSI	6000 PSI	4500 PSI
H810-10-10-08	0.63	0.63	0.50	1.13	0.38	0.38	0.31	2.06	2.06	4500 PSI	6000 PSI	4500 PSI
H810-12	0.75	0.75	0.75	1.38	0.44	0.44	0.44	2.25	2.25	6000 PSI	6000 PSI	4500 PSI
H810-12-12-10	0.75	0.75	0.63	1.38	0.44	0.44	0.38	2.25	2.25	4500 PSI	6000 PSI	4500 PSI
H810-16	1.00	1.00	1.00	1.63	0.50	0.50	0.50	2.75	2.75	4500 PSI	6000 PSI	3000 PSI
H810-16-16-12	1.00	1.00	0.75	1.63	0.50	0.50	0.44	2.75	2.75	4500 PSI	6000 PSI	3000 PSI
H810-20	1.25	1.25	1.25	2.00	0.56	0.56	0.56	3.06	3.06	3000 PSI	4500 PSI	3000 PSI
H810-20-20-16	1.25	1.25	1.00	2.00	0.56	0.56	0.50	3.06	3.06	3000 PSI	4500 PSI	3000 PSI
H810-24	1.50	1.50	1.50	2.38	0.63	0.63	0.63	3.31	3.31	3000 PSI	4500 PSI	3000 PSI
H810-24-24-20	1.50	1.50	1.25	2.38	0.63	0.63	0.56	3.31	3.31	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A, A', and A'' can be requested for a specific size; i.e., H810-06-04-08, H810-12-06-12, H810-24-16-08, etc. Please contact customer service for other size options.

### H811 - Tube to Male Pipe Thread Branch Tee Assembly



Material Options Available: -SS316L, -M, -S

Tube to Male Pipe Thread Branch Tee Assembly									Pressure Ratings		
Part No.	Tube O.D.		B-NPT	C-HEX	D	D'	E	F	-SS316L	-M	-S
	A	A'									
H811-04-04-02	0.25	0.25	1/8"-27	0.63	0.19	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H811-06-06-04	0.38	0.38	1/4"-18	0.81	0.25	0.25	1.50	1.06	6000 PSI	6000 PSI	4500 PSI
H811-08-08-06	0.50	0.50	3/8"-18	0.94	0.31	0.31	1.69	1.19	3000 PSI	4500 PSI	3000 PSI
H811-10-10-08	0.63	0.63	1/2"-14	1.13	0.38	0.38	2.06	1.44	4500 PSI	6000 PSI	3000 PSI
H811-12-12-12	0.75	0.75	3/4"-14	1.38	0.44	0.44	2.25	1.56	6000 PSI	6000 PSI	4500 PSI
H811-16-16-16	1.00	1.00	1.000"-11.5	1.63	0.50	0.50	2.75	1.94	4500 PSI	6000 PSI	3000 PSI
H811-20-20-20	1.25	1.25	1.250"-11.5	2.00	0.56	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H811-24-24-24	1.50	1.50	1.500"-11.5	2.38	0.63	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI

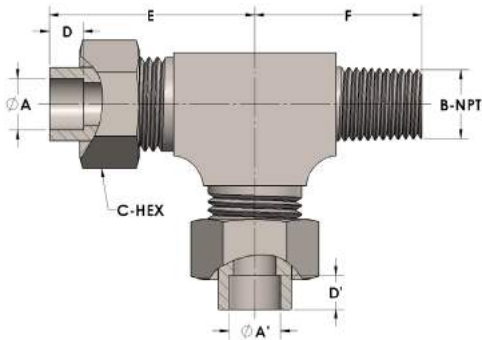
Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H811-06-04-04, H811-06-16-12, H811-08-08-08, etc. Please contact customer service for other size options.

# Mark VIII® Tube Fittings

## Tee Assemblies

EXAMPLE **Tee Assembly** **H813** **-16-16-12** **-S**

### H812 - Tube to Male Pipe Thread Run Tee Assembly

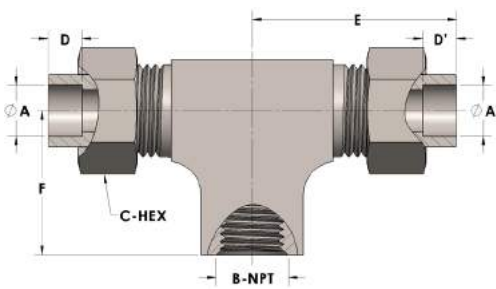


Material Options Available: -SS316L, -M, -S

Tube to Male Pipe Thread <i>Run Tee Union Assembly</i>									Pressure Ratings		
Part No.	Tube O.D.		B-NPT	C-HEX	D	D'	E	F	-SS316L	-M	-S
	A	A'									
H812-04-02-04	0.25	1/8"-27	0.25	0.63	0.19	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H812-06-04-06	0.38	1/4"-18	0.38	0.81	0.25	0.25	1.50	1.06	4500 PSI	4500 PSI	4500 PSI
H812-08-06-08	0.50	3/8"-18	0.50	0.94	0.31	0.31	1.69	1.19	4500 PSI	3000 PSI	3000 PSI
H812-10-08-10	0.63	1/2"-14	0.63	1.13	0.38	0.38	2.06	1.44	3000 PSI	3000 PSI	3000 PSI
H812-12-12-12	0.75	3/4"-14	0.75	1.38	0.44	0.44	2.25	1.56	6000 PSI	4500 PSI	4500 PSI
H812-16-16-16	1.00	1.000"-11.5	1.00	1.63	0.50	0.50	2.75	1.94	4500 PSI	3000 PSI	3000 PSI
H812-20-20-20	1.25	1.250"-11.5	1.25	2.00	0.56	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H812-24-24-24	1.50	1.500"-11.5	1.50	2.38	0.63	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H812-06-04-04, H812-06-16-12, H812-04-04-04, etc. Please contact customer service for other size options.

### H813 - Tube to Female Pipe Thread Branch Tee Assembly



Material Options Available: -SS316L, -M, -S

Tube to Female Pipe Thread <i>Branch Tee Assembly</i>									Pressure Ratings		
Part No.	Tube O.D.		B-NPT	C-HEX	D	D'	E	F	-SS316L	-M	-S
	A	A'									
H813-04-04-02	0.25	0.25	1/8"-27	0.63	0.19	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H813-06-06-04	0.38	0.38	1/4"-18	0.81	0.25	0.25	1.50	1.06	6000 PSI	4500 PSI	6000 PSI
H813-08-08-06	0.50	0.50	3/8"-18	0.94	0.31	0.31	1.69	1.19	4500 PSI	3000 PSI	4500 PSI
H813-10-10-08	0.63	0.63	1/2"-14	1.13	0.38	0.38	2.06	1.44	4500 PSI	4500 PSI	4500 PSI
H813-12-12-12	0.75	0.75	3/4"-14	1.38	0.44	0.44	2.25	1.56	4500 PSI	3000 PSI	4500 PSI
H813-16-16-12	1.00	1.00	3/4"-14	1.63	0.50	0.50	2.75	1.94	4500 PSI	6000 PSI	3000 PSI
H813-16-16-16	1.00	1.00	1.000"-11.5	1.63	0.50	0.50	3.00	2.19	4500 PSI	4500 PSI	3000 PSI
H813-20-20-16	1.25	1.25	1.000"-11.5	2.00	0.56	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H813-20-20-20	1.25	1.25	1.250"-11.5	2.00	0.56	0.56	3.25	2.38	3000 PSI	4500 PSI	3000 PSI
H813-24-24-20	1.50	1.50	1.250"-11.5	2.38	0.63	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI
H813-24-24-24	1.50	1.50	1.500"-11.5	2.38	0.63	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H813-12-12-08, H813-06-06-12, H813-04-06-04, etc. Please contact customer service for other size options.



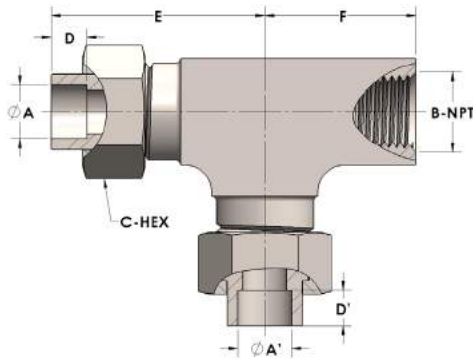
# Mark VIII® Tube Fittings

## Tee Assemblies

EXAMPLE

**Tee Assembly H815 -04-04-04 -SS316L**

### H814 - Tube to Female Pipe Thread Run Tee Assembly

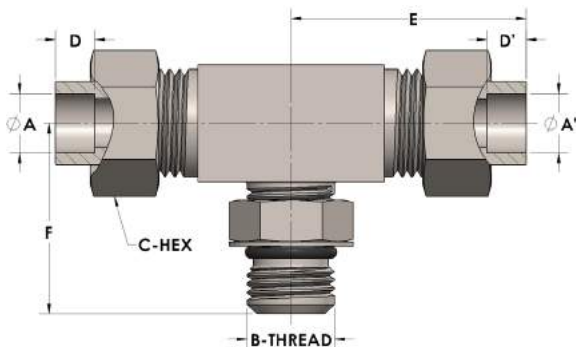


Material Options Available: -SS316L, -M, -S

Tube to Female Pipe Thread Run Tee Assembly									Pressure Ratings				
Part No.	Tube O.D.		B-NPT	Tube O.D.		C-HEX	D	D'	E	F	-SS316L	-M	-S
	A	A'		A	A'								
H814-04-02-04	0.25		1/8"-27	0.25		0.63	0.19	0.19	1.19	0.81	6000 PSI	6000 PSI	6000 PSI
H814-06-04-06	0.38		1/4"-18	0.38		0.81	0.25	0.25	1.50	1.06	6000 PSI	4500 PSI	6000 PSI
H814-08-06-08	0.50		3/8"-18	0.50		0.94	0.31	0.31	1.69	1.19	4500 PSI	3000 PSI	4500 PSI
H814-10-08-10	0.63		1/2"-14	0.63		1.13	0.38	0.38	2.06	1.44	4500 PSI	4500 PSI	4500 PSI
H814-12-12-12	0.75		3/4"-14	0.75		1.38	0.44	0.44	2.25	1.56	4500 PSI	3000 PSI	4500 PSI
H814-16-12-16	1.00		3/4"-14	1.00		1.63	0.50	0.50	2.75	1.94	4500 PSI	6000 PSI	3000 PSI
H814-16-16-16	1.00		1.000"-11.5	1.00		1.63	0.50	0.50	3.00	2.19	4500 PSI	4500 PSI	3000 PSI
H814-20-16-20	1.25		1.000"-11.5	1.25		2.00	0.56	0.56	3.06	2.19	3000 PSI	4500 PSI	3000 PSI
H814-20-20-20	1.25		1.250"-11.5	1.25		2.00	0.56	0.56	3.25	2.38	3000 PSI	4500 PSI	3000 PSI
H814-24-20-24	1.50		1.250"-11.5	1.50		2.38	0.63	0.63	3.31	2.38	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H814-16-06-16, H814-24-20-16, H814-04-04-04, etc. Please contact customer service for other size options.

### H815 - Tube to Male Straight Thread Branch Tee Assembly

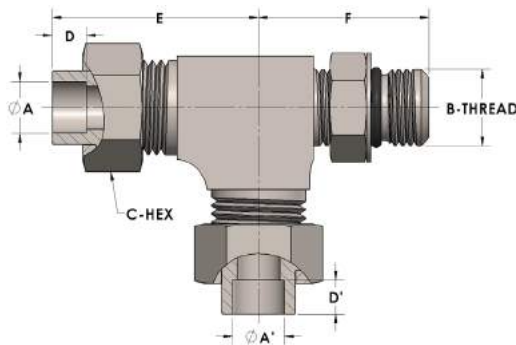


Material Options Available: -SS316L, -M, -S

Tube to Male Straight Thread Branch Tee Assembly									Pressure Ratings		
Part No.	Tube O.D.		B-THREAD	C-HEX	D	D'	E	F	-SS316L	-M	-S
	A	A'									
H815-04-04-04	0.25	0.25	.438"-20UNF	0.63	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H815-06-06-06	0.38	0.38	.563"-18UNF	0.81	0.25	0.25	1.50	1.25	6000 PSI	6000 PSI	6000 PSI
H815-08-08-08	0.50	0.50	.750"-16UNF	0.94	0.31	0.31	1.69	1.44	4500 PSI	6000 PSI	4500 PSI
H815-10-10-10	0.63	0.63	.875"-14UNF	1.13	0.38	0.38	2.06	1.69	4500 PSI	6000 PSI	4500 PSI
H815-12-12-12	0.75	0.75	1.063"-12UN	1.38	0.44	0.44	2.25	1.94	6000 PSI	6000 PSI	4500 PSI
H815-16-16-16	1.00	1.00	1.313"-12UN	1.63	0.50	0.50	2.75	2.06	4500 PSI	4500 PSI	3000 PSI
H815-20-20-20	1.25	1.25	1.625"-12UN	2.00	0.56	0.56	3.06	2.25	3000 PSI	4500 PSI	3000 PSI
H815-24-24-24	1.50	1.50	1.875"-12UN	2.38	0.63	0.63	3.31	2.44	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H815-04-06-06, H815-08-12-16, H815-24-20-24, etc. Please contact customer service for other size options.

### H816 - Tube to Male Straight Thread Run Tee Assembly



Material Options Available: -SS316L, -M, -S

Tube to Male Straight Thread Run Tee Assembly									Pressure Ratings			
Part No.	Tube O.D.		B-THREAD	C-HEX	D	D'	E	F	-SS316L	-M	-S	
	A	A'										
H816-04-04-04	0.25		.438"-20UNF	0.25	0.63	0.19	0.19	1.19	1.19	6000 PSI	6000 PSI	6000 PSI
H816-06-06-06	0.38		.563"-18UNF	0.38	0.81	0.25	0.25	1.50	1.25	6000 PSI	6000 PSI	6000 PSI
H816-08-08-08	0.50		.750"-16UNF	0.50	0.94	0.31	0.31	1.69	1.44	4500 PSI	6000 PSI	4500 PSI
H816-10-10-10	0.63		.875"-14UNF	0.63	1.13	0.38	0.38	2.06	1.69	4500 PSI	6000 PSI	4500 PSI
H816-12-12-12	0.75		1.063"-12UN	0.75	1.38	0.44	0.44	2.25	1.94	6000 PSI	6000 PSI	4500 PSI
H816-16-16-16	1.00		1.313"-12UN	1.00	1.63	0.50	0.50	2.75	2.06	4500 PSI	4500 PSI	3000 PSI
H816-20-20-20	1.25		1.625"-12UN	1.25	2.00	0.56	0.56	3.06	2.25	3000 PSI	4500 PSI	3000 PSI
H816-24-24-24	1.50		1.875"-12UN	1.50	2.38	0.63	0.63	3.31	2.44	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A and A' can be requested for a specific size; i.e., H816-04-16-12, H816-12-16-08, H816-20-20-16, etc. Please contact customer service for other size options.

# Mark VIII® Tube Fittings

## Cross Assembly

EXAMPLE

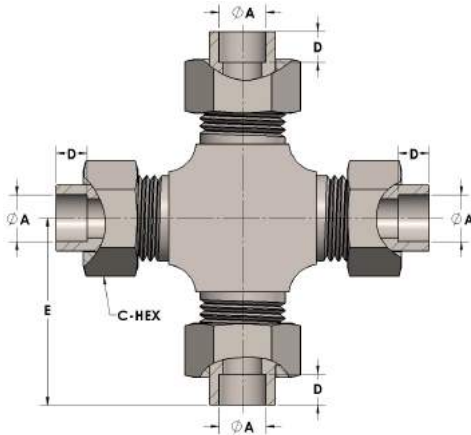
**Cross Assembly**

**H809**

**-12**

**-M**

## H809 - Socketweld/braze Tube Cross Assembly



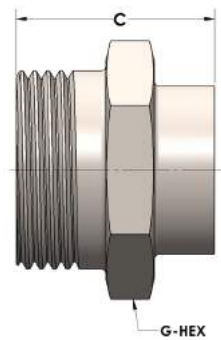
Material Options Available: -SS316L, -M, -S

Socketweld/braze Tube Cross Assembly					Pressure Ratings		
Part No.	Tube O.D.	C-HEX	D	E	-SS316L	-M	-S
	A						
H809-04	0.25	0.63	0.19	1.19	6000 PSI	6000 PSI	6000 PSI
H809-06	0.38	0.81	0.25	1.50	6000 PSI	6000 PSI	6000 PSI
H809-08	0.50	0.94	0.31	1.69	4500 PSI	6000 PSI	4500 PSI
H809-10	0.63	1.13	0.38	2.06	4500 PSI	6000 PSI	4500 PSI
H809-12	0.75	1.38	0.44	2.25	6000 PSI	6000 PSI	4500 PSI
H809-16	1.00	1.63	0.50	2.75	4500 PSI	6000 PSI	3000 PSI
H809-20	1.25	2.00	0.56	3.06	3000 PSI	4500 PSI	3000 PSI
H809-24	1.50	2.38	0.63	3.31	3000 PSI	4500 PSI	3000 PSI

Various Reducing and Increasing Union Assemblies are available. The Tube O.D. sizes of A can be requested for 4 different sizes; i.e., H809-04-06-08-10, H809-08-16-08-16, H809-20-20-12-12, etc.  
Please contact customer service for other size options.

## Assorted Pieces

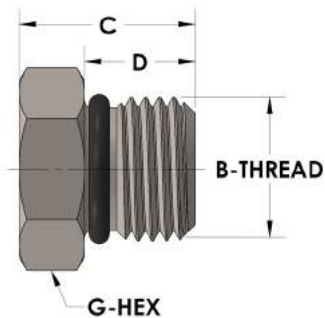
### H804T - Blank Threadpiece



Material Options Available: -SS316L, -M, -S

Tube Size	Blank Threadpiece			Pressure Ratings		
	Part No.	C	G-HEX	-SS316L	-M	-S
1/8	H804T-02	0.63	0.50	6000 PSI	6000 PSI	6000 PSI
1/4	H804T-04	0.63	0.63	6000 PSI	6000 PSI	6000 PSI
3/8	H804T-06	0.81	0.75	6000 PSI	6000 PSI	6000 PSI
1/2	H804T-08	0.94	0.88	6000 PSI	6000 PSI	6000 PSI
5/8	H804T-10	1.06	1.06	6000 PSI	6000 PSI	6000 PSI
3/4	H804T-12	1.25	1.38	6000 PSI	6000 PSI	6000 PSI
1.00	H804T-16	1.38	1.63	6000 PSI	6000 PSI	6000 PSI
1.25	H804T-20	1.44	1.88	6000 PSI	6000 PSI	6000 PSI
1.50	H804T-24	1.56	2.25	6000 PSI	6000 PSI	6000 PSI
2.00	H804T-32	1.94	3.00	6000 PSI	6000 PSI	6000 PSI

### H805 - Straight Thread Plug



Material Options Available: -SS316L, -M, -S

Tube Size	Straight Thread Plug					Pressure Ratings		
	Part No.	B-THREAD	C	D	G-HEX	-SS316L	-M	-S
1/8	H805-02	.313"-24UNF	0.60	0.36	0.44	6000 PSI	6000 PSI	6000 PSI
1/4	H805-04	.438"-20UNF	0.63	0.41	0.56	6000 PSI	6000 PSI	6000 PSI
3/8	H805-06	.563"-18UNF	0.69	0.43	0.69	6000 PSI	6000 PSI	6000 PSI
1/2	H805-08	.750"-16UNF	0.75	0.47	0.88	6000 PSI	6000 PSI	6000 PSI
5/8	H805-10	.875"-14UNF	0.81	0.53	1.00	6000 PSI	6000 PSI	6000 PSI
3/4	H805-12	1.063"-12UN	1.00	0.63	1.25	6000 PSI	6000 PSI	6000 PSI
1.00	H805-16	1.313"-12UN	1.00	0.63	1.50	6000 PSI	6000 PSI	6000 PSI
1.25	H805-20	1.625"-12UN	1.00	0.63	1.88	6000 PSI	6000 PSI	6000 PSI
1.50	H805-24	1.875"-12UN	1.00	0.63	2.13	6000 PSI	6000 PSI	6000 PSI
2.00	H805-32	2.500"-12UN	1.44	0.63	2.75	4500 PSI	6000 PSI	4500 PSI

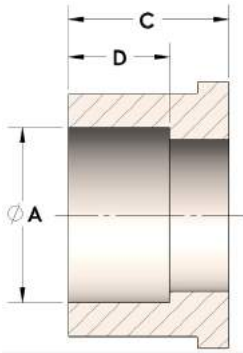
# Mark VIII® Pipe Fittings

## Tailpiece

EXAMPLE

<b>Tailpiece</b>	<b>H851R</b>	<b>-24-16</b>	<b>-SS316L</b>
------------------	--------------	---------------	----------------

### H851R - Socketweld Pipe Tailpiece



Material Options Available: -SS316L, -M, -S

Socketweld Pipe Tailpiece				Union Nut Size	Mark VIII -Dash-	Nominal Pipe Size	Pressure Ratings		
Part No.	A	C	D				-SS316L	-M	-S
H851R-08-02	0.410	0.50	0.25	-08	-02	1/8" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-10-04	0.545	0.63	0.38	-10	-04	1/4" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-12-06	0.680	0.69	0.44	-12	-06	3/8" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-16-08	0.845	0.81	0.50	-16	-08	1/2" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-20-12	1.055	0.88	0.56	-20	-12	3/4" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-24-16	1.320	0.94	0.63	-24	-16	1.00" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-32-20	1.665	1.25	0.69	-32	-20	1.25" NPS	6000 PSI	6000 PSI	6000 PSI
H851R-32-24	1.905	1.25	0.75	-32	-24	1.50" NPS	4500 PSI	6000 PSI	4500 PSI

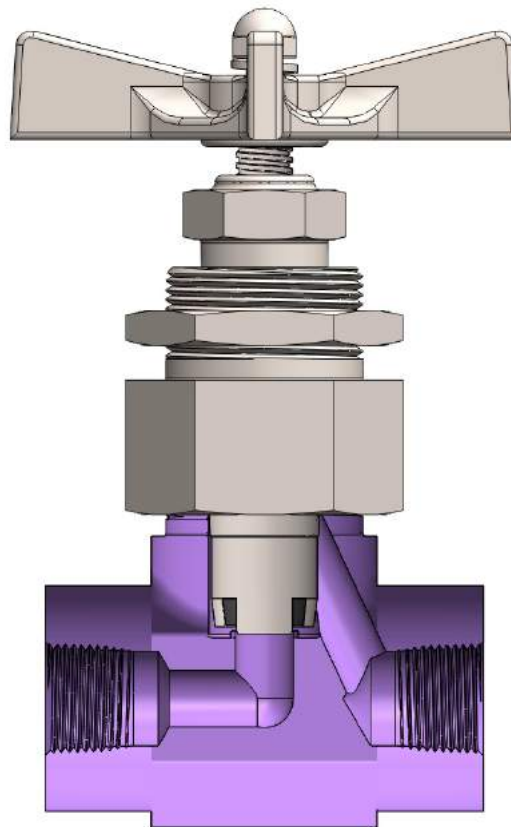
For other pipe-size connections, see page 69 for the H866 Direct Weld Insert adapter. The H866 can be combined with the corresponding H849R tailpiece.

## G-Series®

Simplified and compact version of our proven soft-seat design provides reliable heavy-duty service and long life.

- Manufactured with permanent soft seats (sealing disc) to provide years of bubble-tight shutoff for applications requiring long term dependability
- All G-Series® valves have the advantage of large flow areas and construction of wetted parts in 316 Stainless Steel
- A full line of shutoff, needle, and check valves
- Six common orifice sizes ranging from .219" to .813"
- Pressure ratings from vacuum to 6000 PSI (413 bar)
- Temperature range of -15°F to 400°F (-26°C to 204°C) with standard Viton® O-Ring and Stem Seal\*
- Standard panel mount configuration with a replaceable valve cartridge

\*See ordering matrix on next page for temperature ranges of optional O-Ring materials.



# G-Series® Ordering Information

EXAMPLE **G 2 N G PF -06 -C**

Product Line	Valve SIZE	Orifice INCH	Valve Type	Body Style	Body End Connection	End Size	*Stem Seal & O-Ring Material
<b>G</b>	<b>0</b>	.218	<b>S</b> Shutoff	<b>G</b> Globe	<b>PF</b> Female NPT	<b>-02</b> 1/8"	<b>-B</b> Polyurethane & Buna-N <b>-C</b> all Viton® <b>-D</b> all EPDM <b>-G</b> Polyurethane & Viton®
	<b>1</b>	.313	<b>N</b> Needle		<b>PS</b> Socketweld Pipe	<b>-04</b> 1/4"	
	<b>2</b>	.438	<b>C</b> Check			<b>-06</b> 3/8"	
	<b>3</b>	.500				<b>-08</b> 1/2"	
	<b>4</b>	.625				<b>-10</b> 5/8"	
	<b>5</b>	.813				<b>-12</b> 3/4"	
					<b>-16</b> 1.00"		
						<b>-20</b> 1.25"	
						<b>-24</b> 1.50"	

\*\*Where two materials are listed, the first material is the Stem Seal and the second material is the O-Ring.

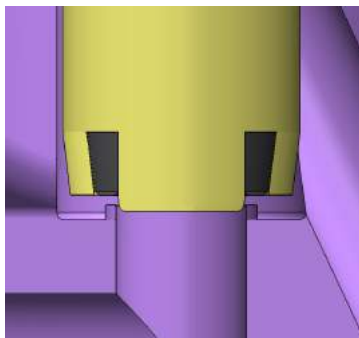
Standard G-Series Valve Materials
Body - 316/L Stainless Steel
Bonnet & Stem - 316/L Stainless Steel
Gland Nut - High Tensile Bronze
Retainer & Panel Nut - Naval Brass
Sealing Disc - Vespel® SP-21
Handle - Aluminum

Stem Seal & O-Ring Temperature Range	
Material Ordering Letter	Temperature range
B	-30°F to 180°F (-34°C to 82°C)
C	-15°F to 400°F (-26°C to 204°C)
D	-70°F to 250°F (-57°C to 121°C)
G	-15°F to 180°F (-26°C to 82°C)

## Valve Types

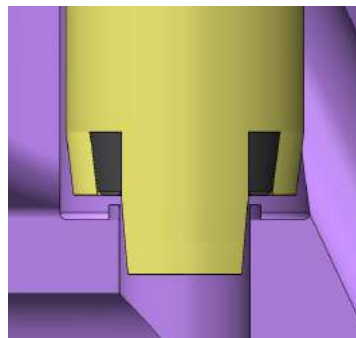
### Sealing Disc Configurations

#### Shutoff



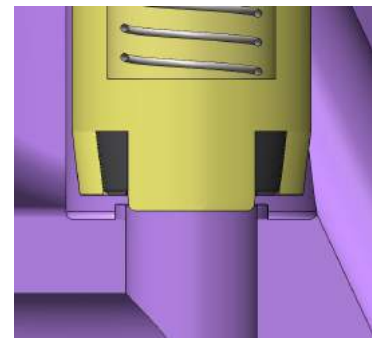
- Fully contained soft seat
- Flat seated for extended wear
- Bubble tight performance

#### Needle



- Soft seated - bubble tight
- Tapered plug for excellent flow control
- Full flow capability

#### Check



- Fully ported
- Soft seated
- Spring actuated



# G-Series® Valves

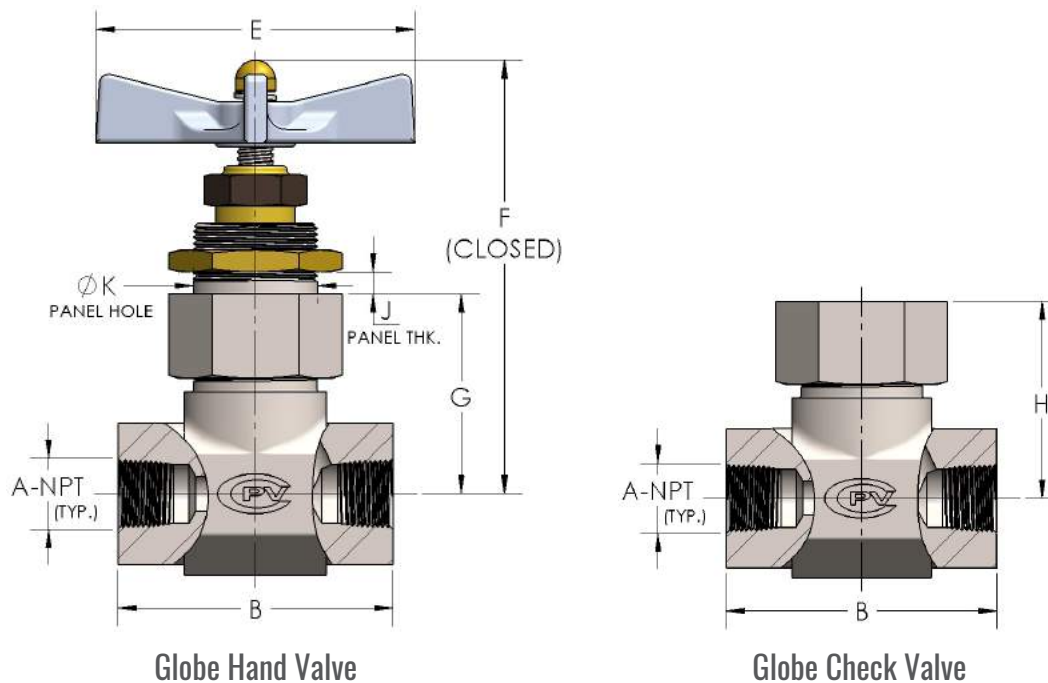
## PF End Connection Female Pipe Thread (NPT)

Part Number	Orifice		A-NPT	B	E	F	G	H	J (max.)	K	Pressure Rating	
	Size	Inch										
G0SGPF	-02-*	0	0.218	1/8"-27	2.00	3.50	4.36	1.69	1.19	0.25	1.20	6000 PSI
	-04-*			1/4"-18	2.38							
	-06-*			3/8"-18	2.50							
G1SGPF	-04-*	1	0.313	1/4"-18	2.75	3.50	4.56	1.81	2.06	0.44	1.20	6000 PSI
	-06-*			3/8"-18	2.88							
	-08-*			1/2"-14	3.13							
G2SGPF	-06-*	2	0.438	3/8"-18	3.13	3.50	5.06	2.59	2.66	0.44	1.53	6000 PSI
	-08-*			1/2"-14	3.38							
	-12-*			3/4"-14	3.38							
G3SGPF	-08-*	3	0.500	1/2"-14	3.88	4.50	6.00	2.81	2.88	0.69	1.78	6000 PSI
	-12-*			3/4"-14	4.00							
	-16-*			1.000"-11.5	4.38							
G4SGPF	-12-*	4	0.625	3/4"-14	4.00	5.25	6.00	3.00	3.06	0.56	1.78	6000 PSI
	-16-*			1.000"-11.5	4.38							
G5SGPF	-16-*	5	0.813	1.000"-11.5	4.75	7.25	7.19	3.38	3.31	0.88	2.16	6000 PSI
	-20-*			1.250"-11.5								

Note: Replace the third digit, "S" with an "N" to order a Needle valve. Example: G2NGPF-06-C

Note: Replace the third digit, "S" with a "C" to order a Check valve. Example: G2CGPF-06-C

\*Add seal material letter designation. See ordering matrix on page 52.



# G-Series® Valves

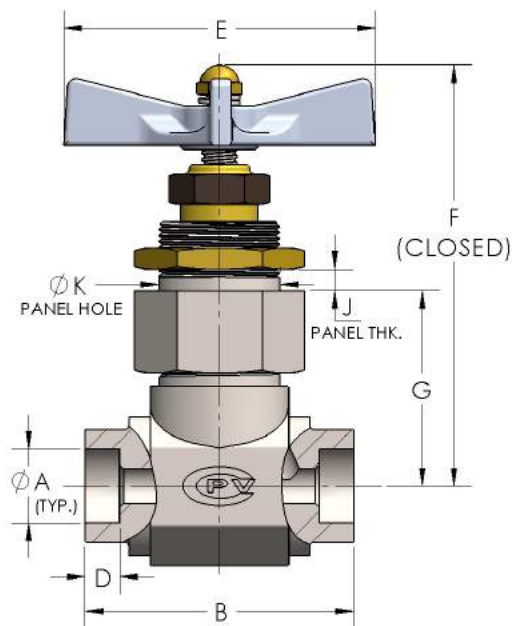
## PS End Connection Socketweld Pipe

Part Number		Orifice		A (NPS)	B	D	E	F	G	H	J (max.)	K	Pressure Rating
		Size	Inch										
G0SGPS	-02-*	0	0.218	0.405	2.38	0.38	3.50	4.36	1.69	1.19	0.25	1.20	6000 PSI
	-04-*			0.540									
	-06-*			0.675									
G1SGPS	-04-*	1	0.313	0.540	2.50	0.38	3.50	4.56	1.81	2.06	0.44	1.20	6000 PSI
	-06-*			0.675									
	-08-*			0.840									
G2SGPS	-06-*	2	0.438	0.675	3.13	0.38	3.50	5.06	2.59	2.66	0.44	1.53	6000 PSI
	-08-*			0.840									
	-12-*			1.050									
G3SGPS	-08-*	3	0.500	0.840	3.75	0.38	4.50	6.00	2.81	2.88	0.69	1.78	6000 PSI
	-12-*			1.050									
	-16-*			1.315									
G4SGPS	-12-*	4	0.625	1.050	3.88	0.50	5.25	6.00	3.00	3.06	0.56	1.78	6000 PSI
	-16-*			1.315									
G5SGPS	-16-*	5	0.813	1.315	4.75	0.50	7.25	7.19	3.38	3.31	0.88	2.16	6000 PSI
	-20-*			1.660									

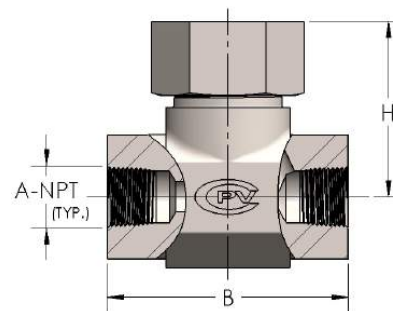
Note: Replace the third digit, "S" with an "N" to order a Needle valve. Example: G2NGPS-06-C

Note: Replace the third digit, "S" with a "C" to order a Check valve. Example: G2CGPS-06-C

\*Add seal material letter designation. See ordering matrix on page 52.



Globe Hand Valve

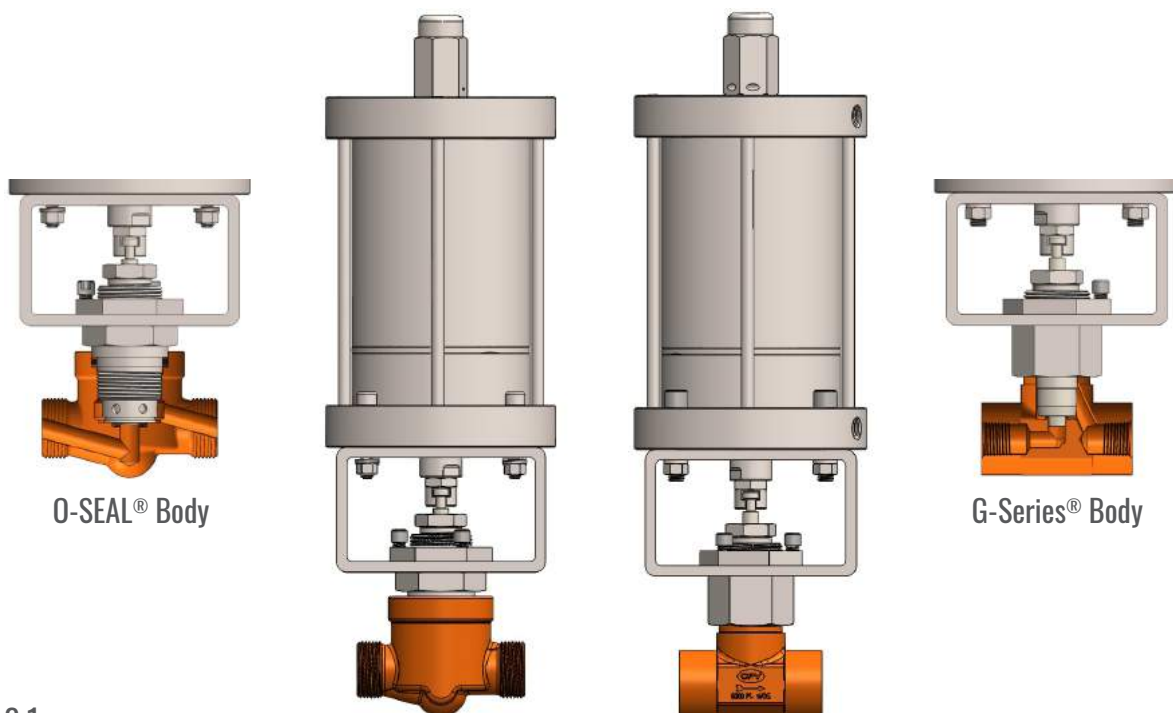


Globe Check Valve

## FloMaster®

A full line of air operated control valves for critical applications providing years of service and thousands of bubble-tight shut-offs.

- Ideal for high pressure/high capacity pure gas and cylinder filling
  - Durable, reliable operation for hydraulic systems and heavy industries
  - Large port sizes allowing greater flows with positive shutoff every time
  - Easy setup for automated systems
  - Optional position indicating sensors for fault detection
  - Pressure ratings from vacuum to 6000 PSI (413 bar)
  - Standard temperature range from -15°F to 180°F (-26°C to 82°C) with standard Viton® O-Rings and Polyurethane Stem Seal and Vespel® SP-21 Disc\*
  - High performance actuator with precision machined mounting bracket
    - O-SEAL® body assures a leak-proof installation
    - G-Series® body has a compact and robust design
  - CRN: OC17716.2 for all sizes of 1380 and 1480 valves (inclusive of all available additional options)
- \*See next page for temperature ranges of optional materials.



# FloMaster® Ordering Information

## O-SEAL®

EXAMPLE **1 3 80 -2 -M -VA -VB -NC -D**

Product Line	Cartridge Type	Body Style	Valve Size	Additional Options	Air Operator	*Stem Seal & O-Ring Material
1	3 Shutoff 4 Needle	80 O-SEAL® Globe 81 O-SEAL® Angle 82 O-SEAL® Offset	-0 1/8" -1 1/4" -2 3/8" -3 1/2" -4 3/4" -5 1.00"	-M High Temperature service (up to 400°F) -VC High Vacuum Service -PB Port Below Seat -PA Port Above Seat -VB Vent Below Seat -VA Vent Above Seat	-NC Normally Closed -NO Normally Open	-B Polyurethane & Buna-N -C all Viton® -D all EPDM -G Polyurethane & Viton®

\*Where two materials are listed, the first material is the Stem Seal and the second material is the O-Ring.

Stem Seal & O-Ring Temperature Range	
Material Ordering Letter	Temperature range
B	-30°F to 180°F (-34°C to 82°C)
C	-15°F to 400°F (-26°C to 204°C)
D	-70°F to 250°F (-57°C to 121°C)
G	-15°F to 180°F (-26°C to 82°C)

## G-Series®

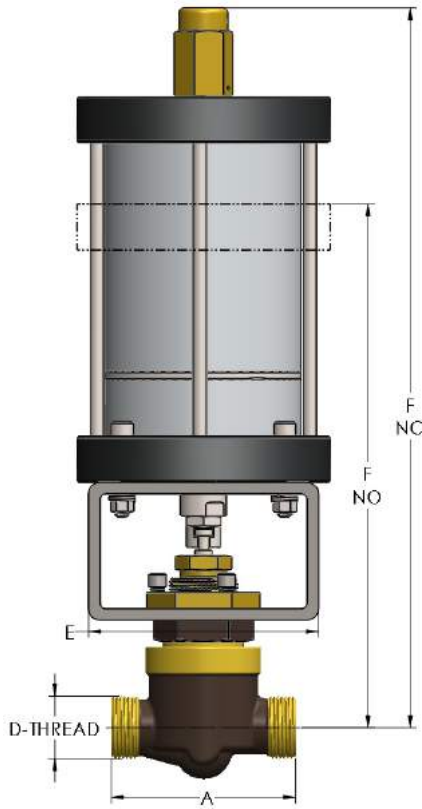
EXAMPLE **G 3 N G PF -12 -NC -C**

Product Line	Valve SIZE	Orifice INCH	Valve Type	Body Style	Body End Connection	End Size	Air Operator	*Stem Seal & O-Ring Material
G	0 1 2 3 4 5	.218 .313 .438 .500 .625 .813	S Shutoff N Needle	G Inline	PF Female NPT PS Socketweld Pipe	-02 1/8" -04 1/4" -06 3/8" -08 1/2" -10 5/8" -12 3/4" -16 1.00" -20 1.25" -24 1.50"	-NC Normally Closed -NO Normally Open	-B Polyurethane & Buna-N -C all Viton® -D all EPDM -G Polyurethane & Viton®

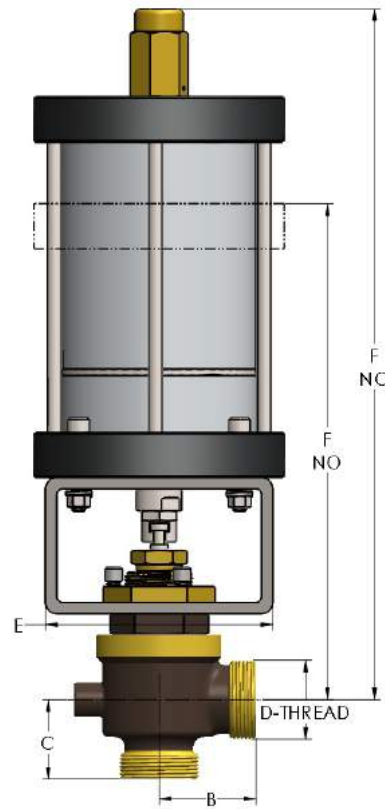
\*Where two materials are listed, the first material is the Stem Seal and the second material is the O-Ring.

# FloMaster® Valves

## O-SEAL®



1380 Valve



1381 Valve

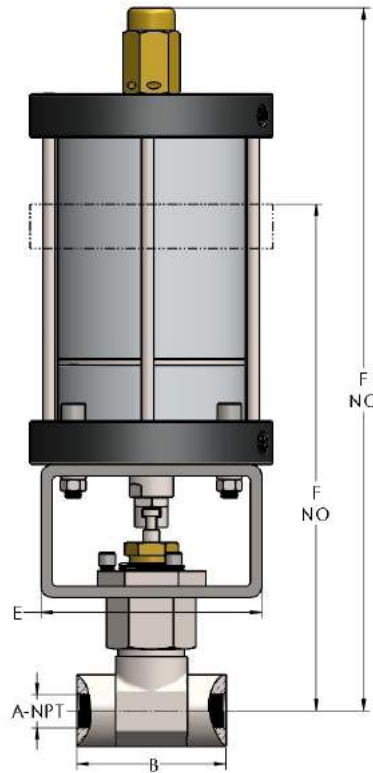
Pipe Size	Tube Size	Port Dia.	Pneumatic Actuated O-SEAL® Valves		A	B	C	D-THREAD	E	F (Normally Open)	F (Normally Closed)	Pressure Rating
			Globe Shutoff/Needle	Angle Shutoff/Needle								
1/8	1/4	0.22	1380-0-*/1480-0-*	1381-0-*/1481-0-*	2.75	1.38	1.13	1.000"-14UNS	4.00	6.09	11.50	6000 PSI
1/4	3/8	0.31	1380-1-*/1480-1-*	1381-1-*/1481-1-*	3.38	1.69	1.50	1.188"-12UN	4.00	10.00	13.44	6000 PSI
3/8	1/2	0.44	1380-2-*/1480-2-*	1381-2-*/1481-2-*	4.00	2.00	1.63	1.375"-12UNF	5.00	11.00	15.88	6000 PSI
1/2	3/4	0.50	1380-3-*/1480-3-*	1381-3-*/1481-3-*	4.25	2.13	1.75	1.750"-12UNF	6.00	12.25	18.56	6000 PSI
3/4	1.00	0.63	1380-4-*/1480-4-*	1381-4-*/1481-4-*	4.63	2.31	2.38	2.000"-12UN	8.00	13.38	13.81	6000 PSI
1.00	1.25	0.81	1380-5-*/1480-5-*	1381-5-*/1481-5-*	5.25	2.63	2.75	2.313"-12UNS	8.00	14.25	16.75	6000 PSI

\*Add "-NC" or "-NO" to the end of the part number to indicate type of actuator: Normally Closed (NC) or Normally Open (NO).



## G-Series®

### PF End Connection - Female Pipe Thread (NPT)



Part Number				Orifice		A-NPT	B	E	F (Normally Open)	F (Normally Closed)	Pressure Rating
Style	Size	Normally Closed OR Normally Open		Size	Inch						
G0SGPF	-02	-*	-**	0	0.218	1/8"-27	2.00	4.00	6.19	10.63	6000 PSI
	-04		-**			1/4"-18	2.38				
	-06		-**			3/8"-18	2.50				
G1SGPF	-04	-*	-**	1	0.313	1/4"-18	2.75	4.00	9.85	13.25	6000 PSI
	-06		-**			3/8"-18	2.88				
	-08		-**			1/2"-14	3.13				
G2SGPF	-06	-*	-**	2	0.438	3/8"-18	3.13	5.00	11.13	16.05	6000 PSI
	-08		-**			1/2"-14	3.38				
	-12		-**			3/4"-14	3.38				
G3SGPF	-08	-*	-**	3	0.500	1/2"-14	3.88	6.00	12.35	18.70	6000 PSI
	-12		-**			3/4"-14	4.00				
	-16		-**			1.000"-11.5	4.38				
G4SGPF	-12	-*	-**	4	0.625	3/4"-14	4.00	6.00	12.50	18.88	4500 PSI
	-16		-**			1.000"-11.5	4.38				
G5SGPF	-16	-*	-**	5	0.813	1.000"-11.5	4.75	6.00	13.38	19.25	4500 PSI
	-20		-**			1.250"-11.5					

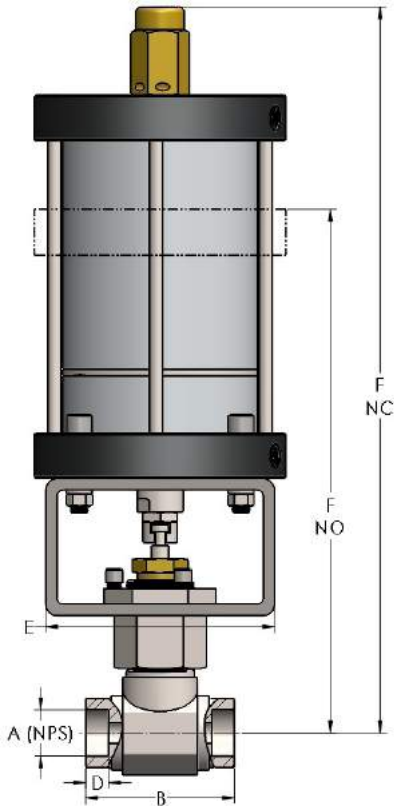
Note: Replace the third digit, "S" with an "N" to order a Needle valve. Example: G2NGPF-06-NC-C

\*Add "-NC" or "-NO" to the end of the part number to indicate type of actuator: Normally Closed (NC) or Normally Open (NO).

\*\*Add seal material letter designation. See ordering matrix on page 56.

## G-Series®

### PS End Connection - Socketweld Pipe



Part Number				Orifice		A (NPS)	B	D	E	F (Normally Open)	F (Normally Closed)	Pressure Rating
Style	Size	Normally Closed OR Normally Open		Size	Inch							
G0SGPS	-02	_*	_-**	0	0.218	0.405	2.38	0.38	4.00	6.19	10.63	6000 PSI
	-04		_-**			0.540						
	-06		_-**			0.675						
G1SGPS	-04	_*	_-**	1	0.313	0.540	2.50	0.38	4.00	9.85	13.25	6000 PSI
	-06		_-**			0.675						
	-08		_-**			0.840	2.75					
G2SGPS	-06	_*	_-**	2	0.438	0.675	3.13	0.38	5.00	11.13	16.05	6000 PSI
	-08		_-**			0.840						
	-12		_-**			1.050	3.50	0.50				
G3SGPS	-08	_*	_-**	3	0.500	0.840	3.75	0.38	6.00	12.35	18.70	6000 PSI
	-12		_-**			1.050						
	-16		_-**			1.315	3.88	0.50				
G4SGPS	-12	_*	_-**	4	0.625	1.050	3.88	0.50	6.00	12.50	18.88	4500 PSI
	-16		_-**			1.315						
G5SGPS	-16	_*	_-**	5	0.813	1.315	4.75	0.50	6.00	13.38	19.25	4500 PSI
	-20		_-**			1.660						

Note: Replace the third digit, "S" with an "N" to order a Needle valve. Example: G2NGPS-06-NC-C

\*Add "-NC" or "-NO" to the end of the part number to indicate type of actuator: Normally Closed (NC) or Normally Open (NO).

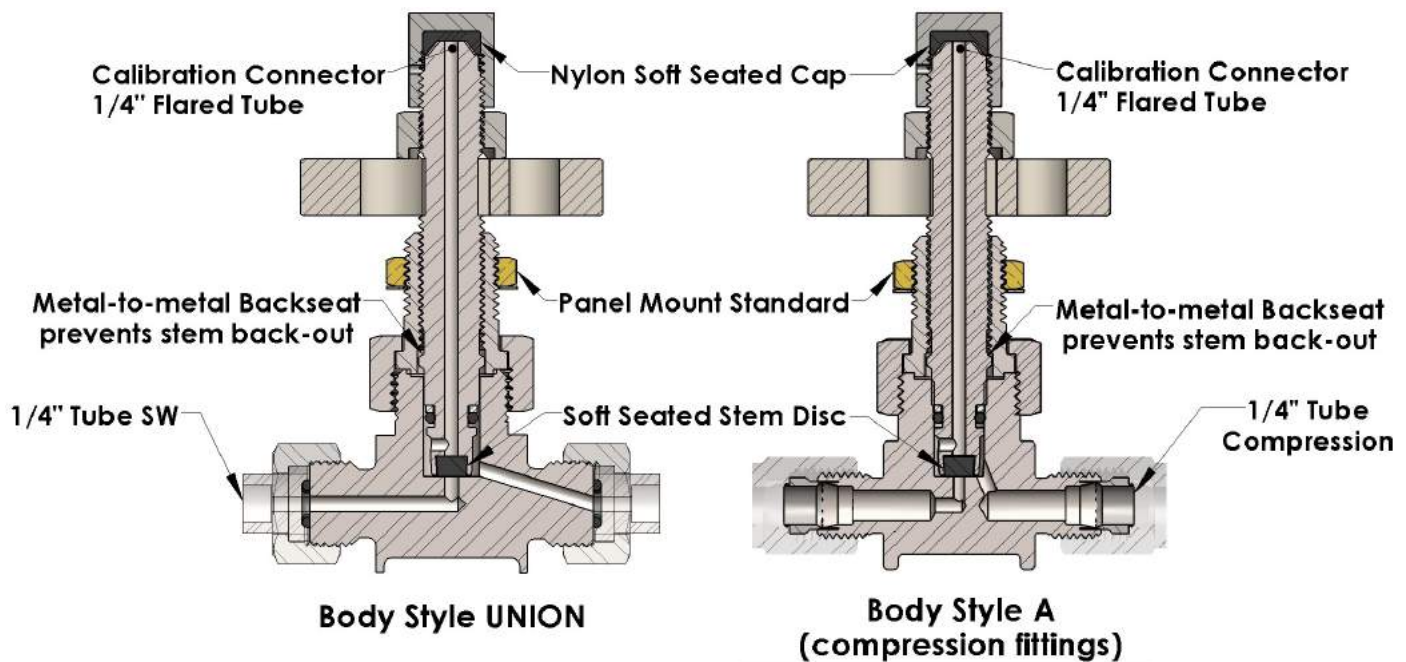
\*\*Add seal material letter designation. See ordering matrix on page 56.

# 900 Series Instrument Valves

## 900 Series Instrument Valves

A high pressure instrument valve that allows for in-place calibration and verification, without removing the instrument.

- Pressure rating of 6000 PSI (413 bar)
- Water, oil, and gas (WOG) compatible
- Industry leading 3/4 turn to fully open
- 1/4" flared tube calibration connection
- Standard panel mount with full panel nut engagement
- Open and close fully without exceeding torque of 62 in.-lb.
- Union style approved per MIL-DTL-25478C
- Compression style approved per NSSC 803-6397304F
- Shock approved per MIL-S-901
- Vibration approved per MIL-STD-167



# 900 Series Instrument Valves

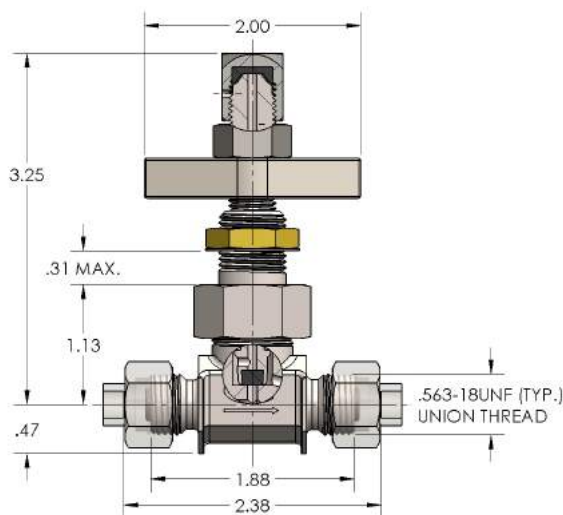
EXAMPLE **9 80 -A -2-M**

Product Line	Body Style	Valve Type	Body Material
9	65 Cartridge Only	-UNION O-Ring Face Seal Union	-1-SS 316/L Stainless Steel
	80 Globe	-A Flareless Compression	-2-M Monel®
	81 Angle (*-UNION only)	-B Flareless x Straight Thread	

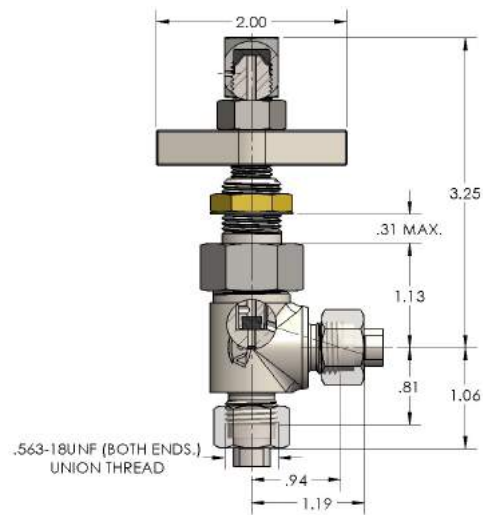
## 980/981 Union - approved per MIL-DTL-24578C

Temperature range of -15°F to 250°F (-26°C to 121°C)

Valve Components	Ordering Part No.	
	980-UNION-1-SS	980-UNION-2-M
Body & Stem Assembly -	316/L Stainless Steel	Monel®
Bonnet -	416 Stainless Steel	416 Stainless Steel
Union Nuts & Tailpieces -	316/L Stainless Steel	Monel®
Nut (Bonnet & Handle) & Cap -	303 Stainless Steel	
Panel Nut -	Naval Brass	
Stem Disc (Seal) -	PCTFE (KEL-F®)	
Cap (Seal) -	Nylon	
O-Rings -	Viton® (Fluorocarbon)	
Handle -	Nickel-Silver	



980 Union (Globe Body)



981 Union (Angle Body)

# 900 Series Instrument Valves

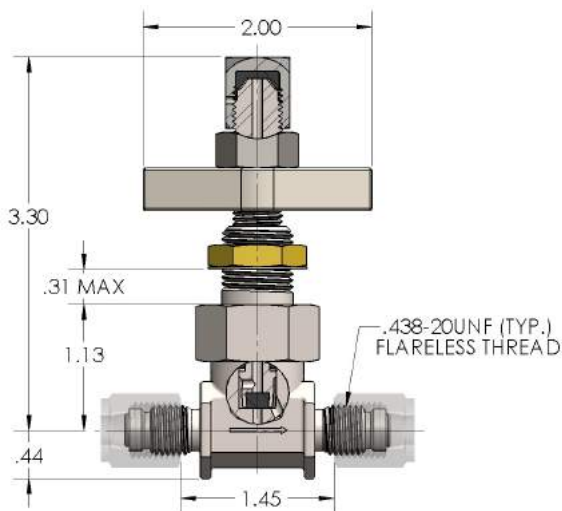
980-A Compression Style

980-B Compression X Straight Thread

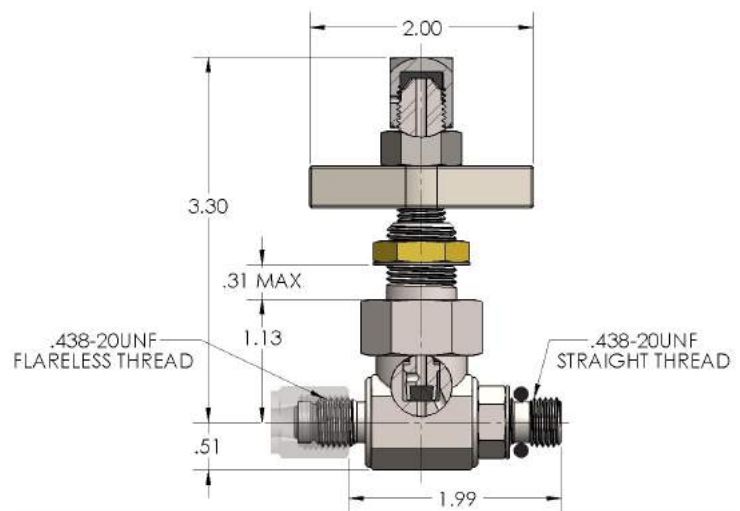
-both approved per NSSC 803-6397304F

Temperature range of -30°F to 250°F (-34°C to 121°C)

Valve Components	Ordering Part No.	
	980-A-1-SS	980-A-2-M
	980-B-1-SS	980-B-2-M
Body & Stem Assembly -	316/L Stainless Steel	Monel®
Bonnet -	416 Stainless Steel	
Ferrule (compression) -	17-4PH Stainless Steel	
Nut (Bonnet, Ferrule, Handle) & Cap -	303 Stainless Steel	
Panel Nut -	Naval Brass	
Stem Disc (Seal) -	PEEK	
Cap (Seal) -	Nylon	
O-Rings -	Buna-N (Nitrile NBR)	
Handle -	Nickel-Silver	



980-A Compression Style

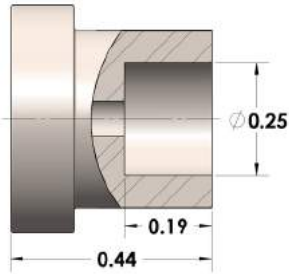


980-B Compression X Straight Thread

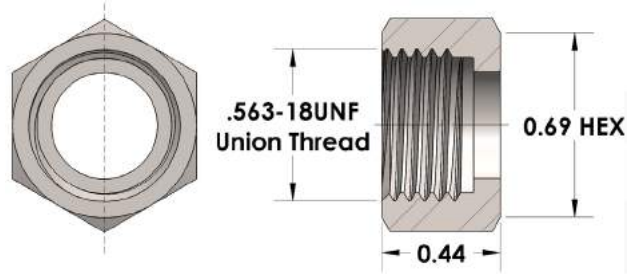


# 900 Series Optional Fittings

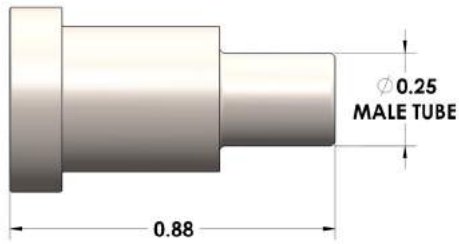
## Union Nut and Tailpieces



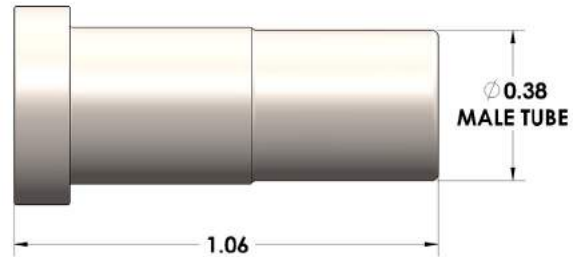
**949R-04**  
Standard Tailpiece for  
1/4" Socketweld Tube



**950N-04**  
Standard Union Nut



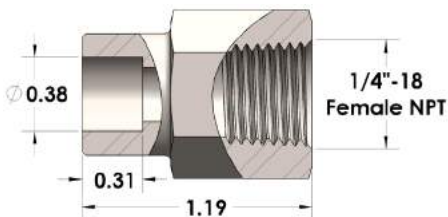
**963R-04-04**  
Tailpiece for 1/4" Male Tube



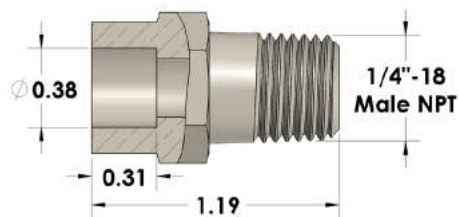
**963R-04-06**  
Tailpiece for 3/8" Male Tube

900 Series Fittings	Part No. End Designations	
	-SS	-M
Union Nut, Tailpieces, & Adapters	316/L Stainless Steel	Monel®

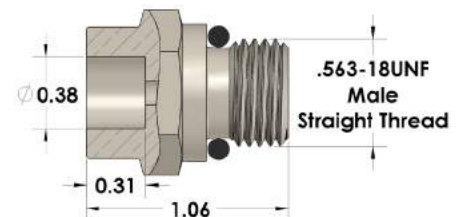
## Adapters



**953A-06-04**  
3/8" Tube X 1/4" Female NPT



**954A-06-04**  
3/8" Tube X 1/4" Male NPT



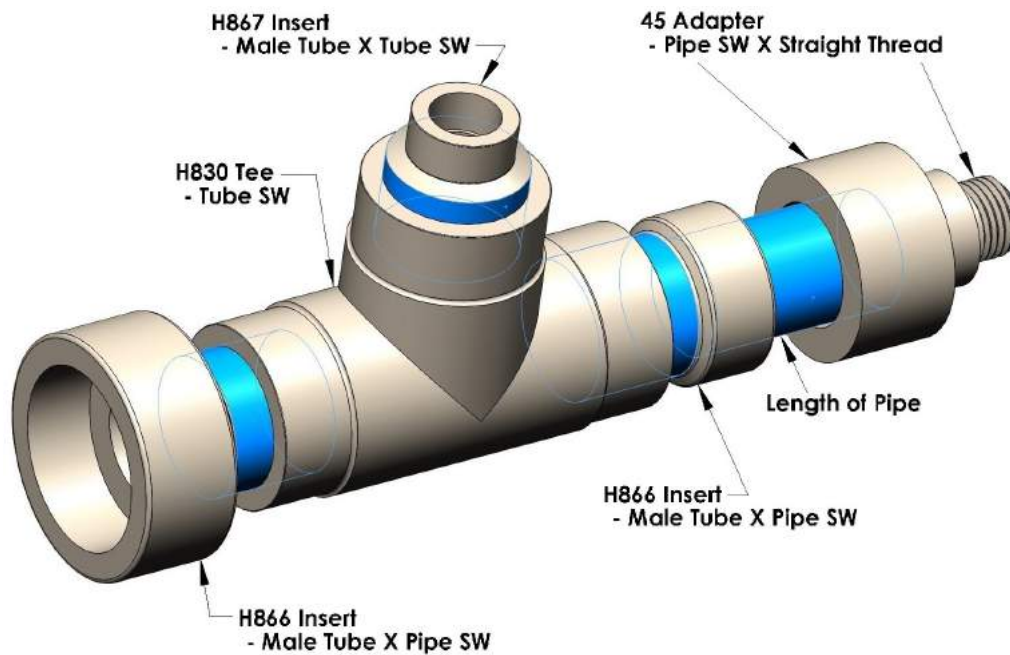
**959A-06-06**  
3/8" Tube X Male Straight Thread

# Direct Weld Fittings

## Direct Weld Fittings

Low cost, hermetically-sealed permanent connection fittings for all your high pressure and critical system needs.

- Highest quality machining for any welding or brazing application
- Wide variety of configurations and sizes
- Pipe and tube compatible reducing inserts and couplings
- Up to 6000 PSI (413 bar) operating pressure
- Companion components to O-SEAL® and Mark VIII™ fittings, providing exceptional system versatility
- Used in applications requiring the very highest reliability - including life support systems for aerospace and undersea environments



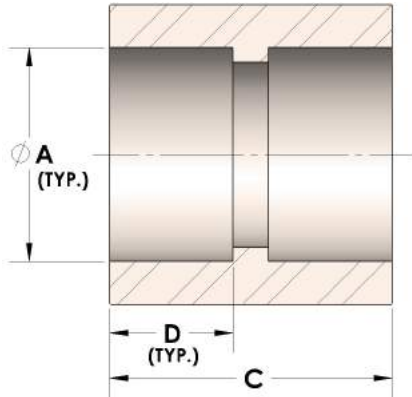
Common Fitting Materials	Ordering Data (for end of Part No.)
316/L Stainless Steel	-SS316L
Monel®	-M
Carbon Steel	-S
Naval Brass	-BR
Copper-Nickel 70-30	-CUNI

# Direct Weld Fittings

## Couplings

EXAMPLE **Coupling** **H847** **-16** **-SS316L**

### H847 - Direct Socketweld/Braze Coupling (Tube)

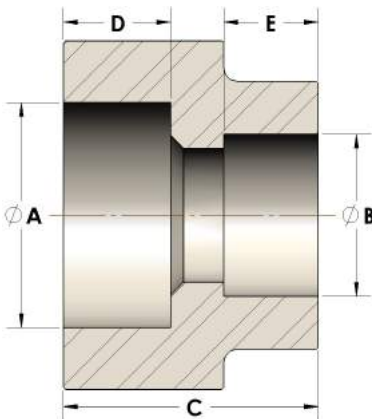


Material Options Available: -SS316L, -M, -S, -BR, -CUNI

Coupling (Tube)				Pressure Ratings				
Part No.	Tube Socket	C	D	-SS316L	-M	-S	-BR	-CUNI
	A							
H847-04	0.25	0.44	0.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H847-06	0.38	0.56	0.25	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H847-08	0.50	0.69	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
H847-10	0.63	0.81	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI	2500 PSI
H847-12	0.75	1.00	0.44	6000 PSI	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H847-16	1.00	1.13	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI
H847-20	1.25	1.25	0.56	3000 PSI	4500 PSI	3000 PSI	3000 PSI	2000 PSI
H847-24	1.50	1.38	0.63	3000 PSI	4500 PSI	3000 PSI	3000 PSI	2500 PSI
H847-32	2.00	1.88	0.88	4500 PSI	6000 PSI	4500 PSI	3000 PSI	3000 PSI

Reducing Couplings may be available. Please contact customer service.

### 107 - Direct Socketweld/Braze Coupling (Pipe X Tube)



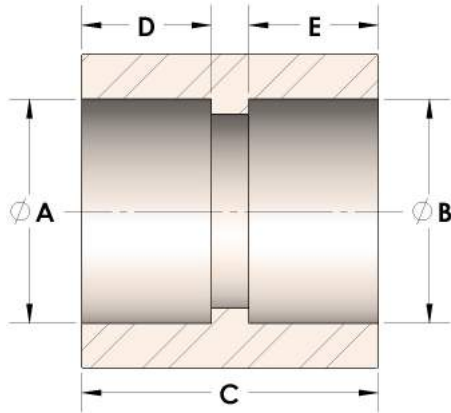
Material Options Available: -SS316L, -M, -S, -CUNI

Coupling (Pipe X Tube)					CPV HISTORICAL Part No.	Pressure Ratings				
Part No.	Pipe Socket	Tube Socket	C	D		E	-SS316L	-M	-S	-CUNI
	A	B								
107-1-04	0.545	0.25	0.88	0.38	0.25	107 1/4 X 1/4	6000 PSI	6000 PSI	6000 PSI	6000 PSI
107-1-06	0.545	0.38	0.88	0.38	0.25	107 1/4 X 3/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-1-08	0.545	0.50	0.88	0.38	0.38	107 1/4 X 1/2	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-2-04	0.680	0.25	0.94	0.38	0.25	107 3/8 X 1/4	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-2-06	0.680	0.38	0.94	0.38	0.25	107 3/8 X 3/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-2-08	0.680	0.50	0.94	0.38	0.38	107 3/8 X 1/2	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-2-10	0.680	0.63	0.94	0.38	0.38	107 3/8 X 5/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-2-12	0.680	0.75	0.94	0.38	0.44	107 3/8 X 3/4	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-3-04	0.845	0.25	1.00	0.44	0.25	107 1/2 X 1/4	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-3-06	0.845	0.38	1.00	0.44	0.25	107 1/2 X 3/8	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-3-08	0.845	0.50	1.00	0.44	0.38	107 1/2 X 1/2	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-3-10	0.845	0.63	1.00	0.44	0.38	107 1/2 X 5/8	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-3-12	0.845	0.75	1.00	0.44	0.44	107 1/2 X 3/4	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-4-06	1.055	0.38	1.19	0.50	0.25	107 3/4 X 3/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-4-08	1.055	0.50	1.19	0.50	0.38	107 3/4 X 1/2	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-4-10	1.055	0.63	1.19	0.50	0.38	107 3/4 X 5/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-4-12	1.055	0.75	1.19	0.50	0.44	107 3/4 X 3/4	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-4-16	1.055	1.00	1.19	0.50	0.50	107 3/4 X 1.00	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-5-08	1.320	0.50	1.31	0.56	0.38	107 1.00 X 1/2	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-5-10	1.320	0.63	1.31	0.56	0.38	107 1.00 X 5/8	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-5-12	1.320	0.75	1.31	0.56	0.44	107 1.00 X 3/4	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-5-16	1.320	1.00	1.31	0.56	0.50	107 1.00 X 1.00	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-5-20	1.320	1.25	1.31	0.56	0.56	107 1.00 X 1.25	6000 PSI	6000 PSI	6000 PSI	4500 PSI
107-6-16	1.665	1.00	1.44	0.63	0.56	107 1.25 X 1.00	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-6-20	1.665	1.25	1.44	0.63	0.56	107 1.25 X 1.25	6000 PSI	6000 PSI	6000 PSI	3000 PSI
107-7-16	1.905	1.00	1.75	0.75	0.50	107 1.50 X 1.00	6000 PSI	6000 PSI	4500 PSI	3000 PSI
107-7-20	1.905	1.25	1.63	0.75	0.63	107 1.50 X 1.25	6000 PSI	6000 PSI	4500 PSI	3000 PSI
107-7-24	1.905	1.50	1.63	0.75	0.69	107 1.50 X 1.50	6000 PSI	6000 PSI	4500 PSI	3000 PSI
107-8-24	2.380	1.50	2.13	0.88	0.69	107 2.00 X 1.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
107-8-32	2.380	2.00	2.13	0.88	0.88	107 2.00 X 2.00	4500 PSI	6000 PSI	4500 PSI	3000 PSI

# Direct Weld Fittings

## Couplings

### 100 - Direct Socketweld/Braze Coupling (Pipe)



Material Options Available: -SS316L, -M, -S, -CUNI

Part No.	Coupling (Pipe)					Pressure Ratings			
	Pipe Socket	Tube Socket	C	D	E	-SS316L	-M	-S	-CUNI
	A	B							
100-0	0.420	0.420	1.06	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
100-1-0	0.555	0.420	1.19	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-1	0.555	0.555	1.06	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-2-1	0.690	0.555	1.25	0.44	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
100-2	0.690	0.690	1.06	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-3-2	0.855	0.690	1.38	0.50	0.44	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-3	0.855	0.855	1.13	0.38	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-4	1.065	1.065	1.38	0.50	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-5	1.330	1.330	1.50	0.50	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
100-6	1.675	1.675	1.50	0.50	0.50	6000 PSI	6000 PSI	6000 PSI	3000 PSI
100-7	1.915	1.915	1.50	0.50	0.50	6000 PSI	6000 PSI	4500 PSI	3000 PSI
100-8	2.406	2.406	2.00	0.63	0.63	4500 PSI	6000 PSI	4500 PSI	3000 PSI

## Elbow

EXAMPLE

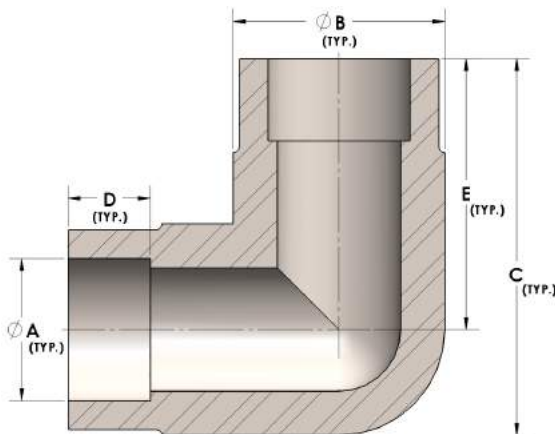
**Elbow**

**H840**

**-06**

**-CUNI**

### H840 - Direct Socketweld/Braze 90° Elbow (Tube)



Material Options Available: -SS316L, -M, -S, -CUNI

Part No.	90° Elbow (Tube)					Pressure Ratings			
	Tube Socket A	B	C	D	E	-SS316L	-M	-S	-CUNI
H840-04	0.25	0.63	1.13	0.19	0.81	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H840-06	0.38	0.63	1.13	0.25	0.81	6000 PSI	4500 PSI	6000 PSI	3000 PSI
H840-08	0.50	0.75	1.44	0.31	1.06	4500 PSI	4500 PSI	6000 PSI	3000 PSI
H840-10	0.63	0.88	1.63	0.38	1.19	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H840-12	0.75	1.13	2.00	0.44	1.44	6000 PSI	4500 PSI	6000 PSI	3000 PSI
H840-16	1.00	1.38	2.25	0.50	1.56	4500 PSI	3000 PSI	4500 PSI	2500 PSI
H840-20	1.25	1.63	2.75	0.56	1.94	3000 PSI	3000 PSI	4500 PSI	2000 PSI
H840-24	1.50	1.88	3.13	0.63	2.19	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H840-32	2.00	2.75	4.25	0.88	2.88	4500 PSI	6000 PSI	4500 PSI	3000 PSI

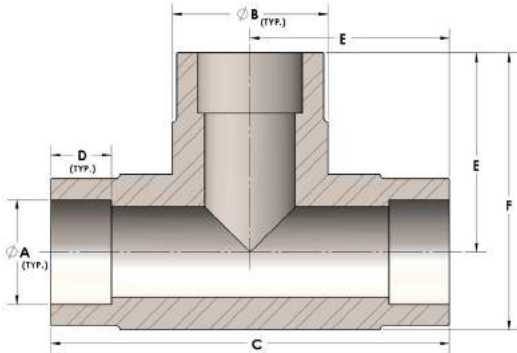
# Direct Weld Fittings

## Tee

EXAMPLE

<b>Tee</b>	<b>H830</b>	<b>-32</b>	<b>-M</b>
------------	-------------	------------	-----------

### H830 - Direct Socketweld/Braze Tee (Tube)

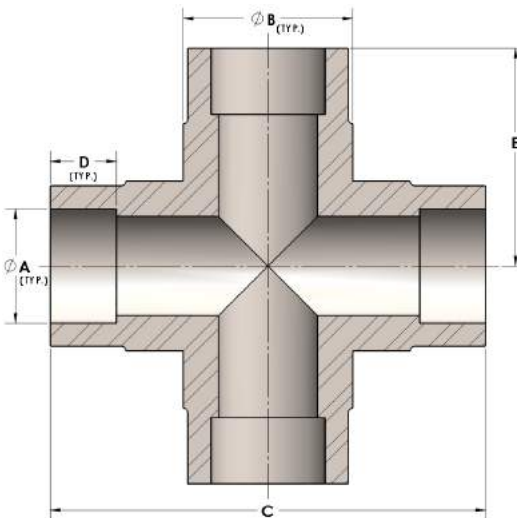


Material Options Available: -SS316L, -M, -S, -CUNI

Tee (Tube)							Pressure Ratings			
Part No.	Tube Socket	B	C	D	E	F	-SS316L	-M	-S	-CUNI
	A									
H830-04	0.25	0.63	1.63	0.19	0.81	1.13	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H830-06	0.38	0.63	1.63	0.25	0.81	1.13	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H830-08	0.50	0.75	2.13	0.31	1.06	1.44	4500 PSI	4500 PSI	4500 PSI	3000 PSI
H830-10	0.63	0.88	2.38	0.38	1.19	1.63	4500 PSI	3000 PSI	4500 PSI	3000 PSI
H830-12	0.75	1.13	2.88	0.44	1.44	2.00	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H830-16	1.00	1.38	3.13	0.50	1.56	2.25	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H830-20	1.25	1.63	3.88	0.56	1.94	2.75	3000 PSI	4500 PSI	4500 PSI	2000 PSI
H830-24	1.50	1.88	4.38	0.63	2.19	3.13	3000 PSI	4500 PSI	4500 PSI	2000 PSI
H830-32	2.00	2.75	5.75	0.88	2.88	4.25	4500 PSI	6000 PSI	4500 PSI	3000 PSI

## Cross

### H819 - Direct Socketweld/Braze Cross (Tube)



Material Options Available: -SS316L, -M

Cross (Tube)						Pressure Ratings	
Part No.	Tube Socket	B	C	D	E	-SS316L	-M
	A						
H819-04	0.25	0.63	1.63	0.19	0.81	6000 PSI	6000 PSI
H819-06	0.38	0.63	1.63	0.25	0.81	6000 PSI	6000 PSI
H819-08	0.50	0.75	2.13	0.31	1.06	4500 PSI	6000 PSI
H819-10	0.63	0.88	2.38	0.38	1.19	4500 PSI	6000 PSI
H819-12	0.75	1.13	2.88	0.44	1.44	6000 PSI	6000 PSI
H819-16	1.00	1.38	3.13	0.50	1.56	4500 PSI	6000 PSI
H819-20	1.25	1.63	3.88	0.56	1.94	3000 PSI	4500 PSI
H819-24	1.50	1.88	4.38	0.63	2.19	3000 PSI	4500 PSI

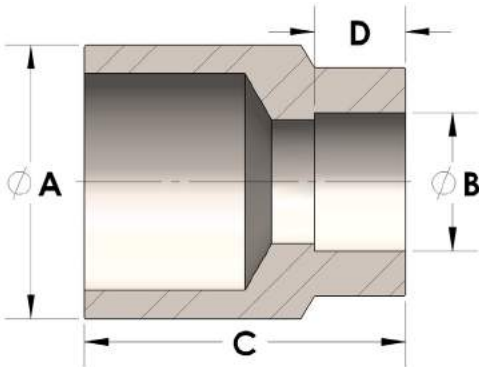


# Direct Weld Fittings

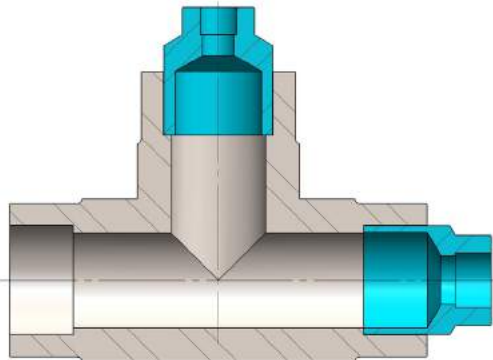
## Inserts

EXAMPLE **Insert** **H867 -24-20 -SS316L**

### H867 - Direct Weld/Braze Insert (Male Tube X Tube SW)



Material Options Available: -SS316L, -M, -S, -CUNI



Example connection to H830 Tee

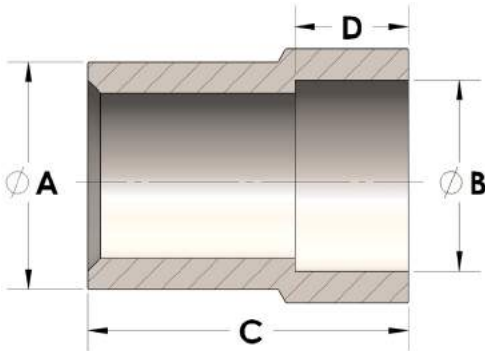
Insert (Male Tube X Tube SW)					Pressure Ratings			
Part No.	OD Tube	Tube Socket	C	D	-SS316L	-M	-S	-CUNI
	A	B			-SS316L	-M	-S	-CUNI
H867-06-04	0.38	0.25	0.69	0.19	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H867-06-02	0.38	0.13	0.69	0.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H867-08-06	0.50	0.38	0.81	0.25	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H867-08-04	0.50	0.25	0.81	0.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H867-08-02	0.50	0.13	0.81	0.19	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-10-08	0.63	0.50	0.94	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-10-06	0.63	0.38	0.94	0.25	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H867-10-04	0.63	0.25	0.94	0.19	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-12-10	0.75	0.63	1.06	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-12-08	0.75	0.50	0.88	0.31	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H867-12-06	0.75	0.38	0.88	0.25	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-12-04	0.75	0.25	0.88	0.19	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-16-12	1.00	0.75	1.25	0.44	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H867-16-10	1.00	0.63	1.06	0.38	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H867-16-08	1.00	0.50	1.06	0.31	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H867-16-06	1.00	0.38	1.06	0.25	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H867-16-04	1.00	0.25	1.06	0.19	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H867-20-16	1.25	1.00	1.38	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-20-12	1.25	0.75	1.25	0.44	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-20-10	1.25	0.63	1.25	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-20-08	1.25	0.50	1.25	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-20-06	1.25	0.38	1.25	0.25	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-20-04	1.25	0.25	1.25	0.19	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-24-20	1.50	1.25	1.50	0.56	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-24-16	1.50	1.00	1.50	0.50	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-24-12	1.50	0.75	1.50	0.44	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-24-10	1.50	0.63	1.50	0.38	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-24-08	1.50	0.50	1.38	0.31	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-24-06	1.50	0.38	1.38	0.25	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H867-32-24	2.00	1.50	1.88	0.63	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-32-20	2.00	1.25	1.88	0.56	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H867-32-16	2.00	1.00	1.88	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-32-12	2.00	0.75	1.88	0.44	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-32-10	2.00	0.63	1.88	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H867-32-08	2.00	0.50	1.75	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI

# Direct Weld Fittings

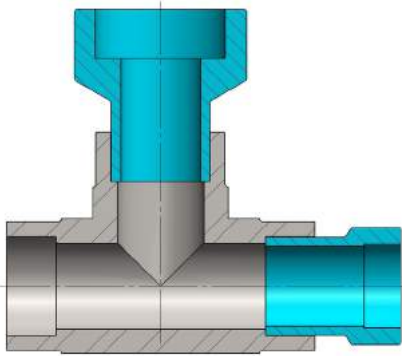
## Inserts

EXAMPLE **Insert** **H866 -08-02** **-M**

### H866 - Direct Weld/Braze Insert (Male Tube X Pipe SW)



Material Options Available: -SS316L, -M, -S, -CUNI



Example connection to H830 Tee

Insert (Male Tube X Pipe SW)					Pressure Ratings			
Part No.	OD Tube	Pipe Socket	C	D	-SS316L	-M	-S	-CUNI
	A	B						
H866-04-02	0.25	0.410	1.13	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-04-04	0.25	0.545	1.19	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-04-06	0.25	0.680	1.25	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-04-08	0.25	0.845	1.38	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-06-02	0.38	0.410	1.13	0.38	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H866-06-04	0.38	0.545	1.19	0.38	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H866-06-06	0.38	0.680	1.25	0.38	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H866-06-08	0.38	0.845	1.38	0.38	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H866-08-02	0.50	0.410	1.19	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-08-04	0.50	0.545	1.19	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H866-08-06	0.50	0.680	1.25	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H866-08-08	0.50	0.845	1.38	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H866-10-04	0.63	0.545	1.19	0.38	4500 PSI	6000 PSI	3000 PSI	2500 PSI
H866-10-06	0.63	0.680	1.25	0.38	4500 PSI	6000 PSI	3000 PSI	2500 PSI
H866-10-08	0.63	0.845	1.38	0.38	4500 PSI	6000 PSI	3000 PSI	2500 PSI
H866-12-04	0.75	0.545	1.19	0.38	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H866-12-06	0.75	0.680	1.25	0.38	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-12-08	0.75	0.845	1.38	0.38	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-12-12	0.75	1.055	1.63	0.50	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-16-06	1.00	0.680	1.25	0.38	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-16-08	1.00	0.845	1.38	0.38	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-16-12	1.00	1.055	1.63	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-16-16	1.00	1.320	1.75	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-20-12	1.25	1.055	1.75	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H866-20-16	1.25	1.320	2.00	0.50	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-20-20	1.25	1.665	2.00	0.50	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-20-24	1.25	1.905	2.13	0.50	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H866-24-12	1.50	1.055	1.50	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-24-16	1.50	1.320	2.13	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-24-20	1.50	1.665	2.25	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-24-24	1.50	1.905	2.50	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H866-32-32	2.00	2.380	2.75	0.63	3000 PSI	4500 PSI	3000 PSI	2000 PSI

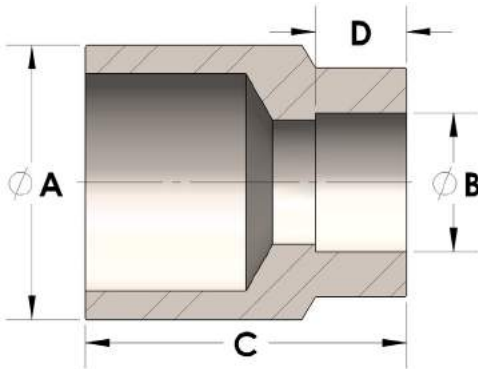
# Direct Weld Fittings

## Inserts

EXAMPLE

<b>Insert</b>	<b>H865 -12-12</b>	<b>-S</b>
---------------	--------------------	-----------

### H865 - Direct Weld/Braze Insert (Male Pipe X Tube SW)



Material Options Available: -SS316L, -M, -S, -CUNI

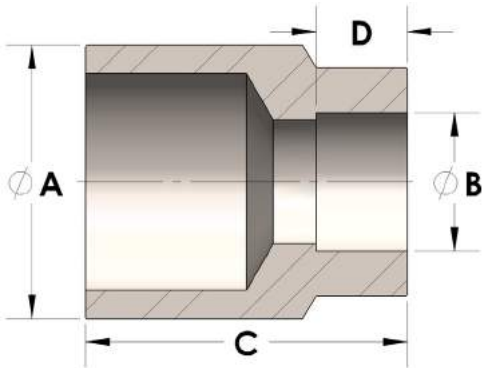
Insert (Male Pipe X Tube SW)					Pressure Ratings			
Part No.	OD Pipe	Tube Socket	C	D	-SS316L	-M	-S	-CUNI
	A	B						
H865-04-02	0.540	0.13	0.75	0.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H865-04-04	0.540	0.25	0.75	0.19	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H865-04-06	0.540	0.38	0.88	0.25	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-04-08	0.540	0.50	1.00	0.31	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-06-02	0.675	0.13	0.88	0.19	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H865-06-04	0.675	0.25	0.88	0.19	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H865-06-06	0.675	0.38	0.88	0.25	6000 PSI	6000 PSI	6000 PSI	6000 PSI
H865-06-08	0.675	5.00	0.88	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-06-10	0.675	0.63	1.13	0.38	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H865-08-04	0.840	0.25	1.00	0.19	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H865-08-06	0.840	0.38	1.00	0.25	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H865-08-08	0.840	0.50	1.00	0.31	6000 PSI	6000 PSI	6000 PSI	4500 PSI
H865-08-10	0.840	0.63	1.00	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-08-12	0.840	0.75	1.25	0.44	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-12-04	1.050	0.25	1.25	0.19	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-12-06	1.050	0.38	1.25	0.25	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-12-08	1.050	0.50	1.25	0.31	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-12-10	1.050	0.63	1.25	0.38	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H865-12-12	1.050	0.75	1.25	0.44	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H865-16-04	1.315	0.25	1.38	0.19	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-16-06	1.315	0.38	1.38	0.25	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-16-08	1.315	0.50	1.38	0.31	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-16-10	1.315	0.63	1.38	0.38	6000 PSI	6000 PSI	4500 PSI	3000 PSI
H865-16-12	1.315	0.75	1.38	0.44	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-16-16	1.315	1.00	1.38	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-16-20	1.315	1.25	1.63	0.56	6000 PSI	6000 PSI	6000 PSI	3000 PSI
H865-20-04	1.660	0.25	1.63	0.19	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-20-08	1.660	0.50	1.63	0.31	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-20-10	1.660	0.63	1.63	0.38	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-20-12	1.660	0.75	1.63	0.44	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-20-16	1.660	1.00	1.63	0.50	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-20-20	1.660	1.25	1.63	0.56	4500 PSI	6000 PSI	4500 PSI	3000 PSI
H865-24-12	1.900	0.75	1.75	0.44	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H865-24-16	1.900	1.00	1.75	0.50	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H865-24-20	1.900	1.25	1.75	0.56	4500 PSI	6000 PSI	4500 PSI	2500 PSI
H865-24-24	1.900	1.50	1.75	0.63	3000 PSI	4500 PSI	3000 PSI	2500 PSI
H865-32-12	2.375	0.75	2.00	0.44	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H865-32-16	2.375	1.00	2.00	0.50	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H865-32-20	2.375	1.25	2.00	0.56	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H865-32-24	2.375	1.50	2.00	0.63	3000 PSI	4500 PSI	3000 PSI	2000 PSI
H865-32-32	2.375	2.00	2.38	0.88	3000 PSI	4500 PSI	3000 PSI	2000 PSI

# Direct Weld Fittings

## Inserts

EXAMPLE **Insert** **57** **-7-4** **-SS316L**

### 57 - Direct Weld/Braze Insert (Male Pipe X Pipe SW)



Material Options Available: -SS316L, -M, -S, -CUNI

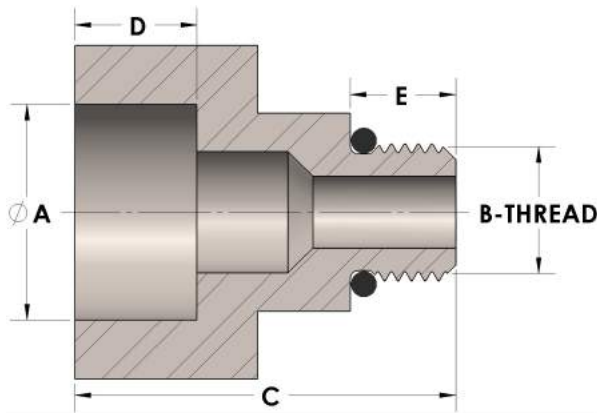
Insert (Male Pipe X Pipe SW)					Pressure Ratings			
Part No.	OD Pipe	Pipe Socket	C	D	-SS316L	-M	-S	-CUNI
	A	B						
57-2-0	0.675	0.420	1.25	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-2-1	0.675	0.555	1.31	0.38	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-3-1	0.840	0.555	1.50	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-3-2	0.840	0.690	1.63	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-4-1	1.050	0.555	1.56	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-4-2	1.050	0.690	1.63	0.44	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-4-3	1.050	0.855	2.06	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-5-1	1.315	0.555	1.63	0.38	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-5-2	1.315	0.690	1.69	0.44	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-5-3	1.315	0.855	1.75	0.50	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-5-4	1.315	1.065	2.19	0.56	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-6-3	1.660	0.855	1.88	0.50	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-6-4	1.660	1.065	1.94	0.56	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-6-5	1.660	1.330	2.44	0.63	6000 PSI	6000 PSI	6000 PSI	4500 PSI
57-7-4	1.900	1.065	1.88	0.56	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-7-5	1.900	1.330	2.00	0.63	6000 PSI	6000 PSI	6000 PSI	3000 PSI
57-7-6	1.900	1.675	2.69	0.69	6000 PSI	6000 PSI	6000 PSI	3000 PSI
57-8-5	2.375	1.330	2.25	0.63	6000 PSI	6000 PSI	6000 PSI	6000 PSI
57-8-6	2.375	1.675	2.38	0.69	6000 PSI	6000 PSI	6000 PSI	3000 PSI
57-8-7	2.375	1.915	2.81	0.75	6000 PSI	6000 PSI	6000 PSI	3000 PSI

# Direct Weld Fittings

## Adapter

EXAMPLE **Adapter** **45** **-3-08** **-S**

### 45 - Direct Socketweld/Braze Pipe X Male Straight Thread Adapter



Material Options Available: -SS316L, -M, -S

Adapter (Pipe SW X Male Straight Thread)						Pressure Ratings		
Part No.	Pipe Socket A	B-THREAD	C	D	E	-SS316L	-M	-S
45-1-04	0.555	.438"-20UNF	1.44	0.38	0.41	6000 PSI	6000 PSI	6000 PSI
45-1-05	0.555	.500"-20UNF	1.38	0.38	0.41	6000 PSI	6000 PSI	6000 PSI
45-1-06	0.555	.563"-18UNF	1.44	0.38	0.43	6000 PSI	6000 PSI	6000 PSI
45-1-08	0.555	.750"-16UNF	1.56	0.38	0.47	6000 PSI	6000 PSI	6000 PSI
45-1-10	0.555	.875"-14UNF	1.63	0.38	0.53	6000 PSI	6000 PSI	6000 PSI
45-2-06	0.690	.563"-18UNF	1.50	0.44	0.43	6000 PSI	6000 PSI	6000 PSI
45-2-10	0.690	.875"-14UNF	1.63	0.44	0.53	6000 PSI	6000 PSI	6000 PSI
45-3-04	0.855	.438"-20UNF	1.50	0.50	0.41	6000 PSI	6000 PSI	6000 PSI
45-3-06	0.855	.563"-18UNF	1.56	0.50	0.43	6000 PSI	6000 PSI	6000 PSI
45-3-08	0.855	.750"-16UNF	1.69	0.50	0.47	6000 PSI	6000 PSI	6000 PSI
45-3-10	0.855	.875"-14UNF	1.75	0.50	0.53	6000 PSI	6000 PSI	6000 PSI
45-3-12	0.855	1.063"-12UN	1.81	0.50	0.63	6000 PSI	6000 PSI	6000 PSI
45-3-16	0.855	1.313"-12UN	1.81	0.50	0.63	6000 PSI	6000 PSI	6000 PSI
45-4-12	1.065	1.063"-12UN	1.50	0.50	0.63	6000 PSI	6000 PSI	6000 PSI
45-4-16	1.065	1.313"-12UN	1.50	0.50	0.63	6000 PSI	6000 PSI	6000 PSI
45-5-10	1.330	.875"-14UNF	1.88	0.63	0.53	6000 PSI	6000 PSI	6000 PSI
45-5-12	1.330	1.063"-12UN	2.00	0.63	0.63	6000 PSI	6000 PSI	6000 PSI
45-5-16	1.330	1.313"-12UN	1.63	0.50	0.63	6000 PSI	6000 PSI	6000 PSI
45-6-16	1.675	1.313"-12UN	2.00	0.69	0.63	6000 PSI	6000 PSI	6000 PSI
45-6-20	1.675	1.625"-12UN	2.00	0.69	0.63	6000 PSI	6000 PSI	4500 PSI
45-6-24	1.675	1.875"-12UN	2.00	0.69	0.63	4500 PSI	6000 PSI	4500 PSI
45-7-16	1.915	1.313"-12UN	1.88	0.50	0.63	4500 PSI	6000 PSI	4500 PSI
45-7-24	1.915	1.875"-12UN	1.88	0.50	0.63	4500 PSI	6000 PSI	4500 PSI
45-8-16	2.406	1.313"-12UN	2.25	0.63	0.63	4500 PSI	6000 PSI	4500 PSI

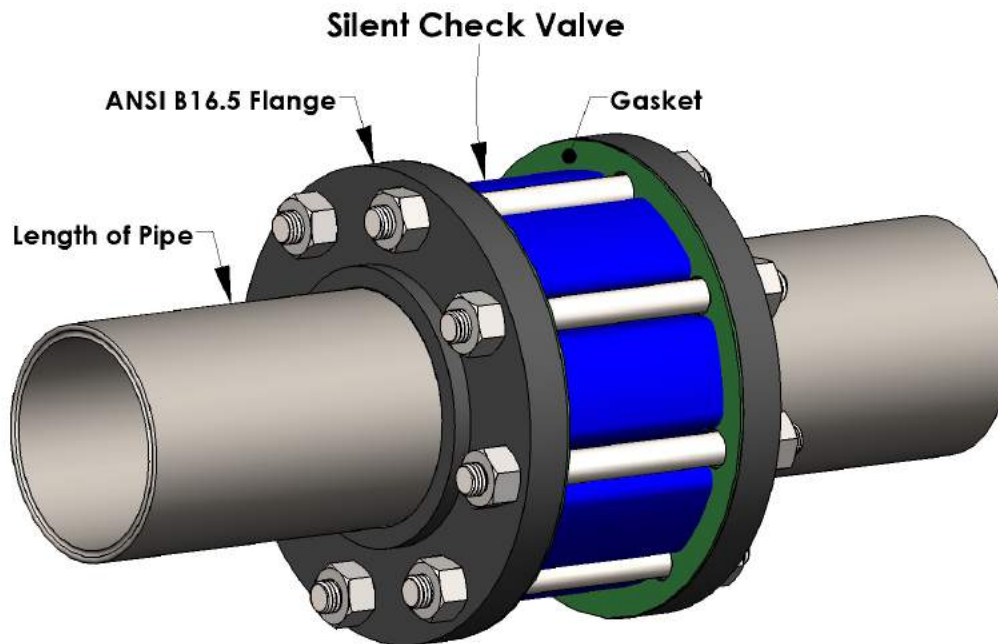
Viton® O-ring unless otherwise specified



## Silent Check Valves

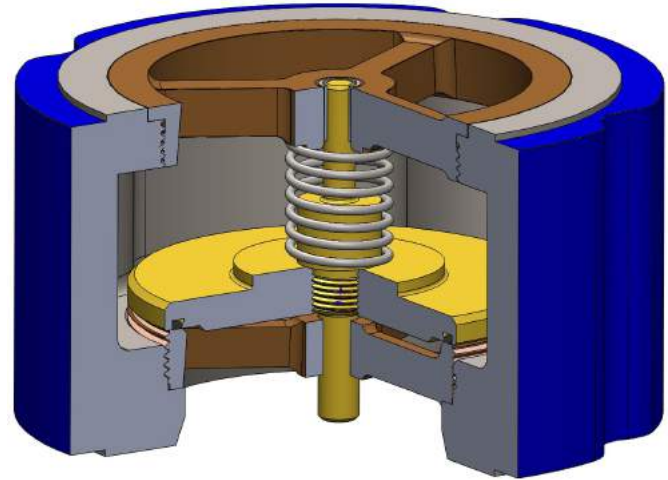
The most reliable and economical insurance against water hammer and pressure surge on the market.

- A spring actuated disc that opens when flow starts, and closes as soon as flow stops
- Guided lift design eliminates reverse flow
- Soft (O-Ring) seated design for bubble-tight performance
- Can be installed in any position, including vertical down and diagonal
- Full flow area minimizes head loss and increases valve efficiency
- Superior performance to metal seated valves
- Various valve end connections:
  - ANSI B16.5 Flange Bolt Pattern - CLASS 125 to CLASS 1500
  - Female NPT - 300 PSI (20 bar)
  - O-SEAL® Union Thread - up to 6000 PSI (413 bar)
  - G-Series® Female NPT and Socket NPS - up to 6000 PSI (413 bar)



# Silent Check Valve Engineering Data

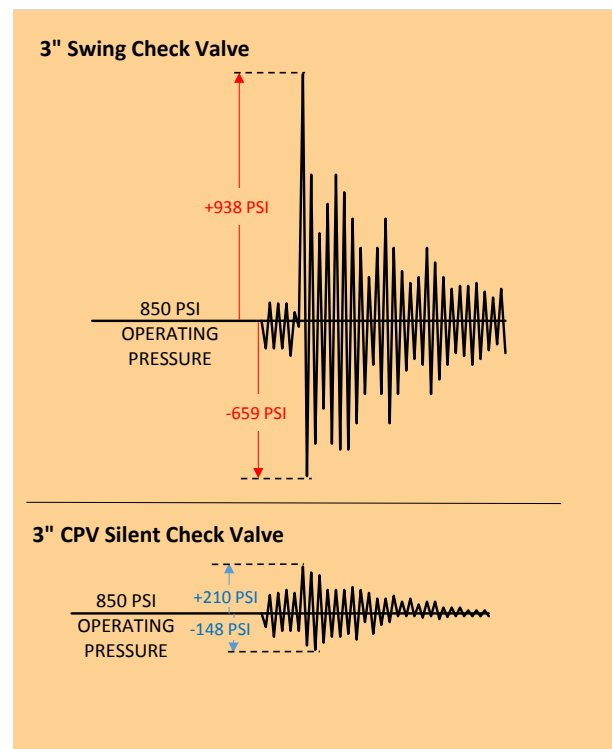
CPV Silent Check Valves employ a specially-engineered stainless steel helical spring which closes the valve automatically and silently at the instant of zero flow velocity - not after reverse flow has begun, like standard industry swing-check valves. No reverse flow means no dangerous pressure surge, therefore no destructive water hammer is experienced.



Actual oscillograph readings illustrate the difference in the potential of pressure surge between a standard swing check valve and a CPV Silent Check Valve.

Here, the first graph shows dangerous pressure surges caused by normal closure of a 3" swing check valve in an 850 PSI system. Note that the valve closure caused a pressure jump from 850 PSI up to 1788 PSI - more than double the operating pressure.

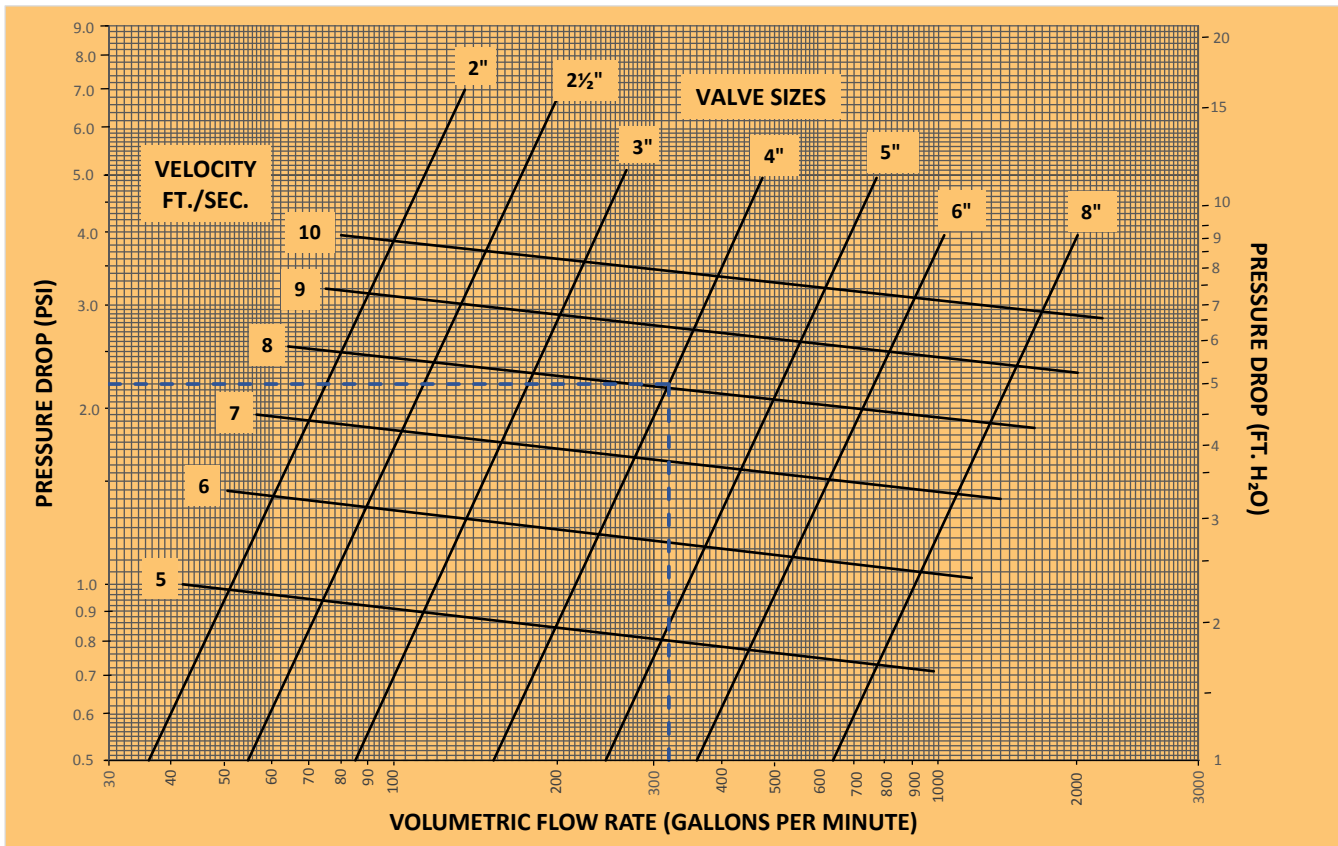
The second graph shows a 3" CPV Silent Check Valve reading with minimal pressure fluctuation. There was no dangerous pressure surge. No chance for water hammer.



CPV Silent Check Valves overcome the inadequacies of all other check valve designs and methods. Operation is automatic and foolproof. Reverse flow is stopped before it can start. Water hammer and its accompanying ill-effects are eliminated. A safe, silent piping system is assured.

# Silent Check Valve Engineering Data

All CPV Silent Check Valves feature a streamlined design and full flow through the valve body, thus assuring minimum head loss. The success of this low head loss design has been proven both in service and by testing.



Head loss and gpm curves for Silent Check Valve Part Numbers:

- 10D, 11D, 12D, 13D, 20D, and 21D (See page 76 for ordering information)
- 110D, 111D, 113D, 114D, and 115D (See page 77 for ordering information)
- 14D, 15D, 16D, 17D, 125D, and 126D (See page 78 for ordering information)

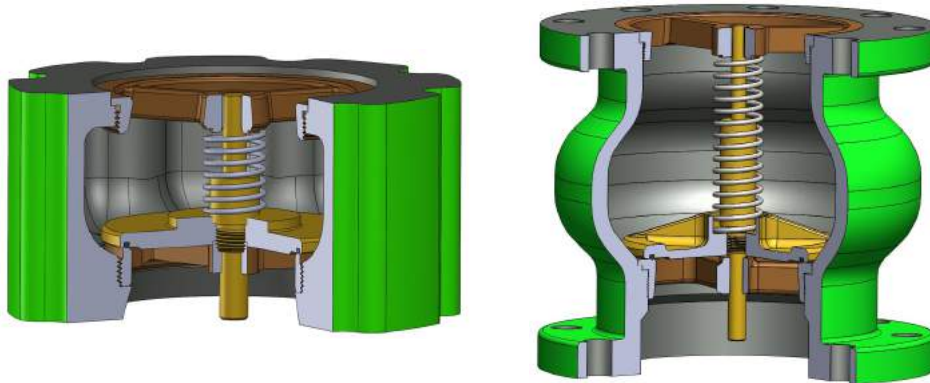
These curves indicate the nominal amount of head loss for the flow of water through CPV Silent Check Valves of various sizes. Valve size is indicated at the top of each curve.

For example, in a 4" pipe line, the anticipated flow is 320 gpm. As the blue dotted line indicates, the head loss for a 4" CPV Silent Check Valve at 320 gpm is approximately 2.2 PSI or 5 ft. of water.

Also indicated on the chart is flow velocity in feet per second, and it should be noted that in the example, the dotted line intersects the 4" valve size curve at the 8 fps curve. Since head loss varies with the square of the flow velocity, good engineering practice dictates that a velocity of 10 ft. per sec. should not be exceeded.

# Silent Check Valves

## Cast Iron and Bronze Body - 2" to 8"



10D, 11D, 12D, 13D

20D, 21D

EXAMPLE **13D -C -SS-R**

Valve Type	Pipe Size	Trim and Seat
<b>10D</b> (Cast Iron Body - CLASS 125)	<b>-A</b> 2"	<b>-B-R</b> Bronze Trim - Soft (O-Ring) Seat
<b>11D</b> (Cast Iron Body - CLASS 250)	<b>-B</b> 2.5"	<b>-SS-R</b> Stainless Steel Trim - Soft (O-Ring) Seat
<b>12D</b> (Bronze Body - CLASS 150)	<b>-C</b> 3"	
<b>13D</b> (Bronze Body - CLASS 300)	<b>-D</b> 4"	
<b>20D</b> (Cast Iron Bulbous Body - CLASS 125)	<b>-E</b> 5"	
<b>21D</b> (Cast Iron Bulbous Body - CLASS 250)	<b>-F</b> 6"	
	<b>-G</b> 8"	

Standard temperature range of -30° F to 250°F (-34°C to 121°C) with Buna-N O-Ring.

For other available O-Ring options, please contact customer service.

Specifications	Cast Iron Body . . . CLASS 125 - <b>10D</b> Series							Cast Iron Body . . . CLASS 250 - <b>11D</b> Series						
	Bronze Body . . . CLASS 150 - <b>12D</b> Series							Bronze Body . . . CLASS 300 - <b>13D</b> Series						
Size	-A	-B	-C	-D	-E	-F	-G	-A	-B	-C	-D	-E	-F	-G
Face to Face	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Dia. of Bolt Circle	4.75	5.50	6.00	7.50	8.50	9.50	11.75	5.00	5.88	6.63	7.88	9.25	10.63	13.00
Dia. of Flange	6.00	7.00	7.50	9.00	10.00	11.00	13.50	6.50	7.50	8.25	10.00	11.00	12.50	15.00
No. of Studs	4	4	4	8	8	8	8	8	8	8	8	8	12	12
Dia. of Studs	0.63	0.63	0.63	0.63	0.75	0.75	0.75	0.63	0.75	0.75	0.75	0.75	0.75	0.88
Length of Studs	7.00	7.00	7.50	8.50	9.50	10.50	12.50	7.00	7.00	8.50	9.50	10.50	11.50	14.00
Weight - lbs. Cast Iron	8.0	12.0	15.0	24.0	40.0	61.0	100.0	8.0	12.0	15.0	24.0	40.0	75.0	125.0
Weight - lbs. Bronze	9.0	14.0	18.0	28.0	46.0	66.0	110.0	9.0	13.0	17.0	28.0	46.0	86.0	140.0

Drain plugs can be furnished - above seat only:

2.00" and 2.50" - 3/8" NPT;  
3.00" and 4.00" - 1/2" NPT;  
5.00" through 8.00" - 3/4" NPT.

Facings:

**10D and 11D** - flat face, serrated finish per MSS SP-6.  
**12D and 13D** - smooth face, with 2 concentric grooves per ANSI B16.24.

Specifications	Cast Iron Bulbous Body CLASS 125 - <b>20D</b> Series					Cast Iron Bulbous Body CLASS 250 - <b>21D</b> Series	
	-C	-D	-E	-F	-G	-F	-G
Face to Face	6.00	7.00	8.00	9.50	10.75	9.50	10.75
Dia. Of Bolt Circle	6.00	7.50	8.50	9.50	11.75	10.63	13.00
Dia. Of Mating Flange	7.50	9.00	10.00	11.00	13.50	12.50	15.00
No. of Studs*	8	16	16	16	16	24	24
Dia. Of Studs	0.63	0.63	0.75	0.75	0.75	0.75	0.88
Length of Studs	3.25	3.50	3.75	4.00	4.00	5.00	5.50
Thickness of Flange	0.75	0.94	0.94	1.00	1.13	1.44	1.63
Weight - lbs.	25.0	43.0	55.0	80.0	130.0	125.0	175.0

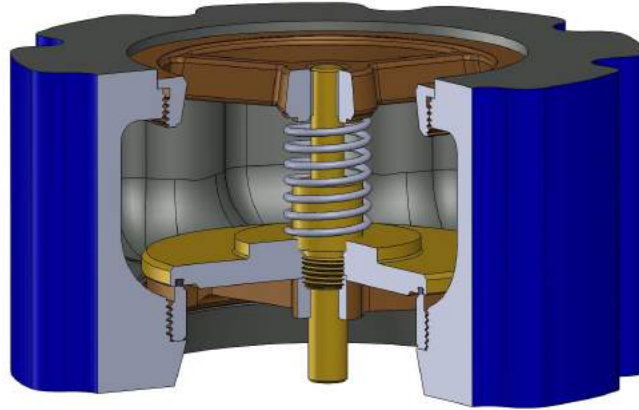
\*Total number of studs for both flanges.

Facings:

**20D** - flat face, serrated finish per MSS SP-6.  
**21D** - raised face, serrated finish per MSS SP-6.

# Silent Check Valves

## Steel Body - 2" to 8"



EXAMPLE **111D -D -B-R**

Valve Type	Pipe Size	Trim and Seat
<b>110D</b> (Steel Body - CLASS 150)	<b>-A</b> 2"	<b>-B-R</b> Bronze Trim - Soft (O-Ring) Seat
<b>111D</b> (Steel Body - CLASS 300)	<b>-B</b> 2.5"	<b>-SS-R</b> Stainless Steel Trim - Soft (O-Ring) Seat
<b>113D</b> (Steel Body - CLASS 600)	<b>-C</b> 3"	
<b>114D</b> (Steel Body - CLASS 900)	<b>-D</b> 4"	
<b>115D</b> (Steel Body - CLASS 1500)	<b>-E</b> 5" <b>-F</b> 6" <b>-G</b> 8"	

Standard temperature range of -30° F to 250° F (-34°C to 121°C) with Buna-N O-Ring.  
For other available O-Ring options, please contact customer service.

Specifications	Steel Body . . CLASS 150 - <b>110D</b> Series							Steel Body . . CLASS 300 - <b>111D</b> Series							Steel Body . . CLASS 600 - <b>113D</b> Series						
	-A	-B	-C	-D	-E	-F	-G	-A	-B	-C	-D	-E	-F	-G	-A	-B	-C	-D	-E	-F	-G
Size	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Face to Face	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Dia. Of Bolt Circle	4.75	5.50	6.00	7.50	8.50	9.50	11.75	5.00	5.88	6.63	7.88	9.25	10.63	13.00	5.00	5.88	6.63	8.50	10.50	11.50	13.75
Dia. Of Mating Flange	6.00	7.00	7.50	9.00	10.00	11.00	13.50	6.50	7.50	8.25	10.00	11.00	12.50	15.00	6.50	7.50	8.25	10.75	13.00	14.00	16.50
No. of Studs	4	4	4	8	8	8	8	8	8	8	8	8	12	12	8	8	8	8	8	12	12
Dia. Of Studs	0.63	0.63	0.63	0.63	0.75	0.75	0.75	0.63	0.75	0.75	0.75	0.75	0.75	0.88	0.63	0.75	0.75	0.88	1.00	1.00	1.13
Length of Studs	7.00	7.00	7.50	8.50	10.50	10.50	12.50	7.00	8.00	8.50	9.50	10.50	11.50	14.00	8.00	8.50	9.50	11.00	12.50	14.00	16.00
Weight - lbs.	8.0	11.0	15.0	27.0	45.0	64.0	94.0	8.0	11.0	15.0	27.0	45.0	73.0	116.0	8.0	12.0	15.0	25.0	50.0	74.0	125.0

Specifications	Steel Body . . CLASS 900 - <b>114D</b> Series							Steel Body . . CLASS 1500 - <b>115D</b> Series						
	-A	-B	-C	-D	-E	-F	-G	-A	-B	-C	-D	-E	-F	-G
Size	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Face to Face	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Dia. Of Bolt Circle	6.50	7.50	7.50	9.25	11.00	12.50	15.50	6.50	7.50	8.00	9.50	11.50	12.50	15.50
Dia. Of Mating Flange	8.50	9.63	9.50	11.50	13.75	15.00	18.50	8.50	9.63	10.50	12.25	14.75	15.50	19.00
No. of Studs	8	8	8	8	8	12	12	8	8	8	8	8	12	12
Dia. Of Studs	0.88	1.00	0.88	1.13	1.25	1.13	1.38	0.88	1.00	1.13	1.25	1.50	1.38	1.63
Length of Studs	10.50	10.50	10.50	12.50	14.50	16.00	17.00	10.50	10.50	13.00	16.00	18.50	20.00	
Weight - lbs.	16.0	22.0	28.0	45.0	83.0	130.0	200.0	16.0	22.0	28.0	45.0	83.0	130.0	200.0

Drain plugs can be furnished - above seat only: 2.00" and 2.50" - 3/8" NPT; 3.00" and 4.00" - 1/2" NPT; 5" through 8" - 3/4" NPT

Facings: **110D** & **111D** - 1/16" raised face, serrated finish per MSS SP-6.

**113D, 114D, & 115D** - 1/4" raised face, serrated finish per MSS SP-6.

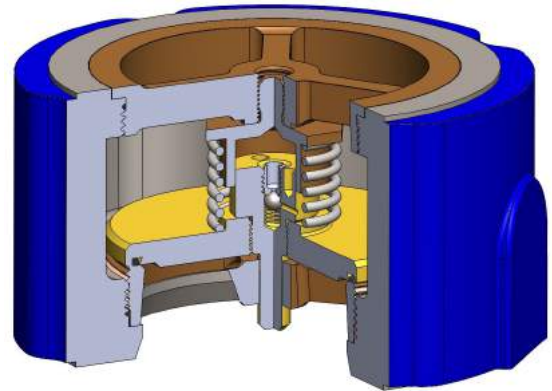


# Silent Check Valves

## Silent Air Check Valves - 2" to 8"

Ideal for installation in the discharge line of air or gas compressors.

With air chamber disc designed to provide a cushion that effectively eliminates valve chattering.



EXAMPLE **126D -E -SS-R**

Valve Type	Pipe Size	Trim and Seat
<b>14D</b> (Cast Iron Body - CLASS 125)	<b>-A</b> 2"	<b>-B-R</b> Bronze Trim - Soft (O-Ring) Seat
<b>15D</b> (Cast Iron Body - CLASS 250)	<b>-B</b> 2.5"	<b>-SS-R</b> Stainless Steel Trim - Soft (O-Ring) Seat
<b>16D</b> (Bronze Body - CLASS 150)	<b>-C</b> 3"	
<b>17D</b> (Bronze Body - CLASS 300)	<b>-D</b> 4"	
<b>125D</b> (Steel Body - CLASS 150)	<b>-E</b> 5"	
<b>126D</b> (Steel Body - CLASS 300)	<b>-F</b> 6" <b>-G</b> 8"	

Standard temperature range of -30° F to 250° F (-34° C to 121° C) with Buna-N O-Ring.

For other available O-Ring options, please contact customer service.

Specifications	Cast Iron Body . . . CLASS 125 - <b>14D</b> Series							Cast Iron Body . . . CLASS 250 - <b>15D</b> Series						
	Bronze Body . . . CLASS 150 - <b>16D</b> Series							Bronze Body . . . CLASS 300 - <b>17D</b> Series						
Size	-A	-B	-C	-D	-E	-F	-G	-A	-B	-C	-D	-E	-F	-G
Face to Face	2.63	2.88	3.13	4.00	4.63	5.50	8.00	2.63	2.88	3.13	4.00	4.63	5.50	8.00
Dia. Of Bolt Circle	4.75	5.50	6.00	7.50	8.50	9.50	11.75	5.00	5.88	6.63	7.88	9.25	10.63	13.00
Dia. Of Flange	6.00	7.00	7.50	9.00	10.00	11.00	13.50	6.50	7.50	8.25	10.00	11.00	12.50	15.00
No. of Studs	4	4	4	8	8	8	8	8	8	8	8	8	12	12
Dia. Of Studs	0.63	0.63	0.63	0.63	0.75	0.75	0.75	0.63	0.75	0.75	0.75	0.75	0.75	0.88
Length of Studs	7.00	7.00	7.50	8.50	9.50	10.50	12.50	7.00	8.00	8.50	9.50	10.50	11.50	14.00
Weight - lbs. Cast Iron	8.0	12.0	15.0	24.0	40.0	61.0	100.0	8.0	12.0	15.0	24.0	40.0	75.0	125.0
Weight - lbs. Bronze	9.0	14.0	18.0	28.0	46.0	66.0	110.0	9.0	13.0	17.0	28.0	46.0	86.0	140.0

Specifications	Steel Body CLASS 150 - <b>125D</b> Series					Steel Body CLASS 300 - <b>126D</b> Series				
	-A	-B	-C	-D	-E	-A	-B	-C	-D	-E
Face to Face	2.63	2.88	3.13	4.00	4.63	2.63	2.88	3.13	4.00	4.63
Dia. Of Bolt Circle	4.75	5.50	6.00	7.50	8.50	5.00	5.88	6.63	7.88	9.25
Dia. Of Flange	6.00	7.00	7.50	9.00	10.00	6.50	7.50	8.25	10.00	11.00
No. of Studs	4	4	4	8	8	8	8	8	8	8
Dia. Of Studs	0.63	0.63	0.63	0.63	0.75	0.63	0.75	0.75	0.75	0.75
Length of Studs	7.00	7.00	7.50	8.50	9.50	7.00	8.00	8.50	9.50	10.50
Weight - lbs.	8.0	11.0	15.0	27.0	45.0	8.0	11.0	15.0	27.0	45.0

Drain plugs can be furnished - above seat only: 2.00" and 2.50" - 3/8" NPT; 3.00" and 4.00" - 1/2" NPT; 5" through 8" - 3/4" NPT.

Facings: 14D, 15D, 16D, & 17D - flat face, serrated finish.

125D & 126D, & 115D - 1/16" raised face, serrated finish.

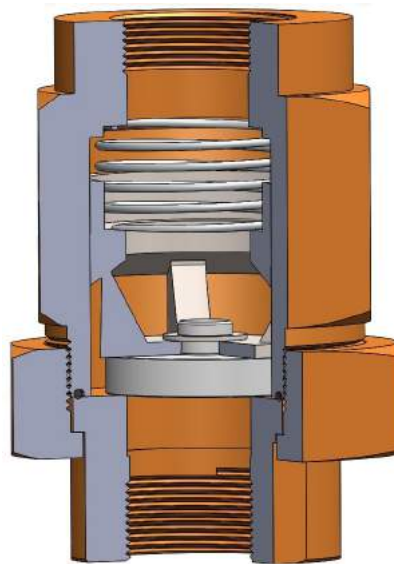
# Silent Check Valves

Female NPT Threaded End Union Body - 1/2" to 2" - 300 PSI (20 bar)

EXAMPLE

**34** - **-5**

Valve Type	Pipe Size
<b>34</b> (Steel Body)	<b>-3</b> 1/2" Female NPT
<b>36</b> (Bronze Body)	<b>-4</b> 3/4" Female NPT
<b>37</b> (Stainless Steel Body)	<b>-5</b> 1.00" Female NPT
	<b>-6</b> 1.25" Female NPT
	<b>-7</b> 1.50" Female NPT
	<b>-8</b> 2.00" Female NPT



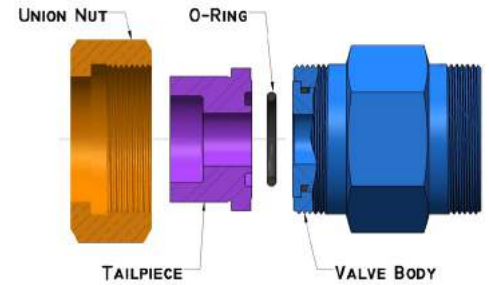
Specifications	Steel Body . . 300 PSI - <b>34</b> Series - Steel Fittings; Stainless Steel Trim; Nylon Disc					
	Bronze Body . . 300 PSI - <b>36</b> Series - Bronze Fittings; Stainless Steel Trim; Nylon Disc					
	Stainless Steel Body . . 300 PSI - <b>37</b> Series - Stainless Steel Fittings & Trim; Nylon Disc					
Size	<b>-3</b>	<b>-4</b>	<b>-5</b>	<b>-6</b>	<b>-7</b>	<b>-8</b>
End to End	3.94	4.06	4.75	5.25	5.63	6.19
Female NPT	1/2"-14	3/4"-14	1.000"-11.5	1.250"-11.5	1.500"-11.5	2.000"-11.5
Weight - lbs.	2.0	3.0	5.0	7.5	9.5	13.5

Standard temperature range of -30°F to 250°F (-34°C to 121°C) with Buna-N O-Ring and Nylon Disc.

# Silent Check Valves

## O-SEAL® Silent Check Valves

- All O-SEAL® silent check valves are spring-actuated, effectively eliminating pressure surges and reverse flow associated with swing checks
- Check valve cartridges can be swapped into existing shutoff, needle, or stop-check bodies
- Can be installed in vertical, horizontal, or diagonal orientation.
- Working pressure up to 6000 PSI (413 bar)
- O-SEAL® check valves come standard with Viton® O-Rings (the 680 model features a Nylon Disc)
- Standard temperature ranges of -15°F to 400°F (-26°C to 204°C) for the 123A model, and -15°F to 275°F (-26°C to 135°C) for the 680 model\*\*
- Please consult customer service for more information
- For available fittings, see pages 15-20



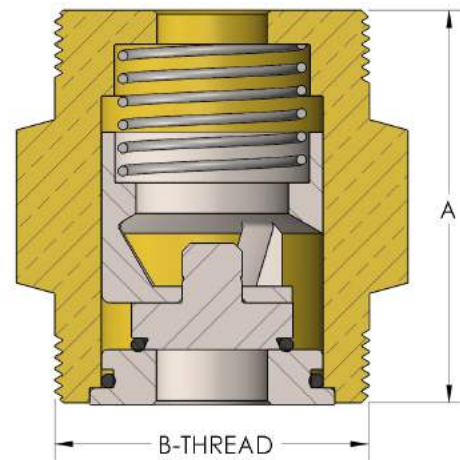
\*\*See O-Ring Temperature Ratings table on page 29 for temperature ranges of optional O-Ring materials.

## 123A - In-Line Check

Pipe Size	Tube Size	Port Dia.	O-SEAL® In-Line Check			Pressure Rating
			Part No.	A	B-THREAD	
1/8	1/4	0.44	*	1.88	1.375"-12UNF	6000 PSI
1/4	3/8	0.44	*	1.88	1.375"-12UNF	6000 PSI
3/8	1/2	0.44	123A-2	1.88	1.375"-12UNF	6000 PSI
1/2	3/4	0.50	123A-3	2.00	1.750"-12UN	6000 PSI
3/4	1.00	0.63	123A-4	2.50	2.000"-12UN	6000 PSI
1.00	1.25	0.81	123A-5	2.88	2.313"-12UNS	6000 PSI
1.25	1.50	1.13	123A-6	3.13	2.750"-12UN	6000 PSI
1.50	2.00	1.31	123A-7	3.50	3.063"-12UNS	6000 PSI
2.00	2.50	1.69	123A-8	4.00	3.750"-12UN	6000 PSI

Comes with standard High Tensile Bronze Body  
For other body material options, please contact customer service.

\*When a 1/8" or 1/4" Pipe Size In-Line Check Valve is required, order Part No. 123A-2 with appropriate reducing tailpieces for 1/8" or 1/4" Pipe Size.



123A - In-line

## 680 - Globe Check

Pipe Size	Tube Size	Port Dia.	O-SEAL® Globe Check				Pressure Rating
			Part No.	A	B	C-THREAD	
1/8	1/4	0.22	680-0	2.75	1.50	1.000"-14UNS	6000 PSI
1/4	3/8	0.31	680-1	3.38	2.00	1.188"-12UN	6000 PSI
3/8	1/2	0.44	680-2	4.00	2.38	1.375"-12UNF	6000 PSI
1/2	3/4	0.50	680-3	4.25	2.69	1.750"-12UN	6000 PSI
3/4	1.00	0.63	680-4	4.63	2.81	2.000"-12UN	6000 PSI
1.00	1.25	0.81	680-5	5.25	3.25	2.313"-12UNS	6000 PSI
1.25	1.50	1.00	680-6	6.50	3.81	2.750"-12UN	6000 PSI
1.50	2.00	1.25	680-7	9.00	6.00	3.063"-12UNS	6000 PSI
2.00	2.50	1.56	680-8	9.50	6.75	3.750"-12UN	6000 PSI

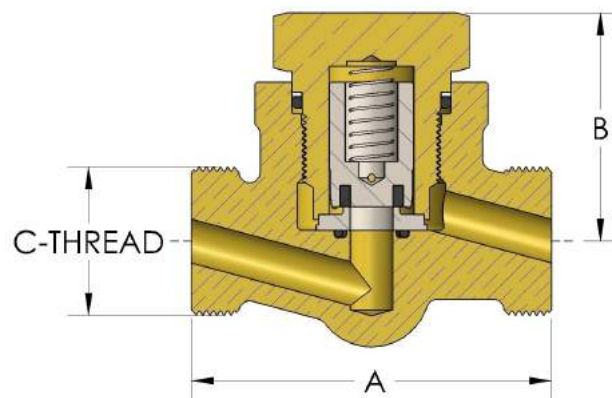
### NOTE:

To order a check valve with a different body, substitute the applicable 2-digit end code to create a part number.

For example:

- Angle: 681
- Offset: 682
- Weld Globe: 670
- Weld Angle: 671

Please reference page 9 to review Dimension "A" for the various body styles; all standard for hand and check valves.



680 - Globe

# Silent Check Valves

## G-Series® Silent Check Valves - 6000 PSI (413 bar)

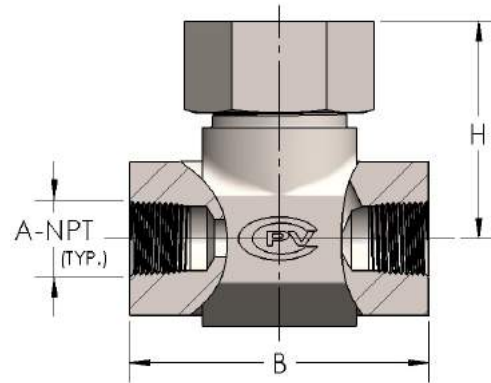
Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Ring.

### PF End Connection

#### Female Pipe Thread (NPT)

Part Number		Orifice		A-NPT	B	H	Pressure Rating
		Size	Inch				
G0CGPF	-02-*	0	0.218	1/8"-27	2.00	1.19	6000 PSI
	-04-*			1/4"-18	2.38		
	-06-*			3/8"-18	2.50		
G1CGPF	-04-*	1	0.313	1/4"-18	2.75	2.06	6000 PSI
	-06-*			3/8"-18	2.88		
	-08-*			1/2"-14	3.13		
G2CGPF	-06-*	2	0.438	3/8"-18	3.13	2.66	6000 PSI
	-08-*			1/2"-14	3.38		
	-12-*			3/4"-14	3.38		
G3CGPF	-08-*	3	0.500	1/2"-14	3.88	2.88	6000 PSI
	-12-*			3/4"-14	4.00		
	-16-*			1.000"-11.5	4.38		
G4CGPF	-12-*	4	0.625	3/4"-14	4.00	3.06	6000 PSI
	-16-*			1.000"-11.5	4.38		
G5CGPF	-16-*	5	0.813	1.000"-11.5	4.75	3.31	6000 PSI
	-20-*			1.250"-11.5			

\*Add seal material letter designation. See ordering matrix on page 52.

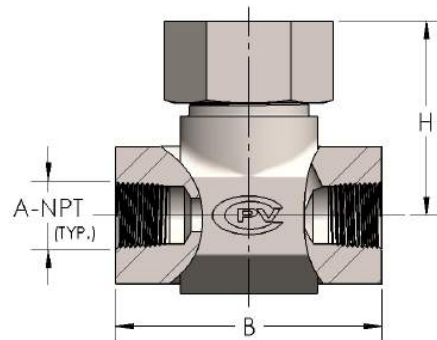


### PS End Connection

#### Socketweld Pipe

Part Number		Orifice		A (NPS)	B	H	Pressure Rating
		Size	Inch				
G0CGPS	-02-*	0	0.218	0.405	2.38	1.19	6000 PSI
	-04-*			0.540	1.19		
	-06-*			0.675	1.31		
G1CGPS	-04-*	1	0.313	0.540	2.50	2.06	6000 PSI
	-06-*			0.675	2.50		
	-08-*			0.840	2.75		
G2CGPS	-06-*	2	0.438	0.675	3.13	2.66	6000 PSI
	-08-*			0.840	3.13		
	-12-*			1.050	3.50		
G3CGPS	-08-*	3	0.500	0.840	3.75	2.88	6000 PSI
	-12-*			1.050	3.88		
	-16-*			1.315	3.88		
G4CGPS	-12-*	4	0.625	1.050	3.88	3.06	6000 PSI
	-16-*			1.315			
G5CGPS	-16-*	5	0.813	1.315	4.75	3.31	6000 PSI
	-20-*			1.660			

\*Add seal material letter designation. See ordering matrix on page 52.

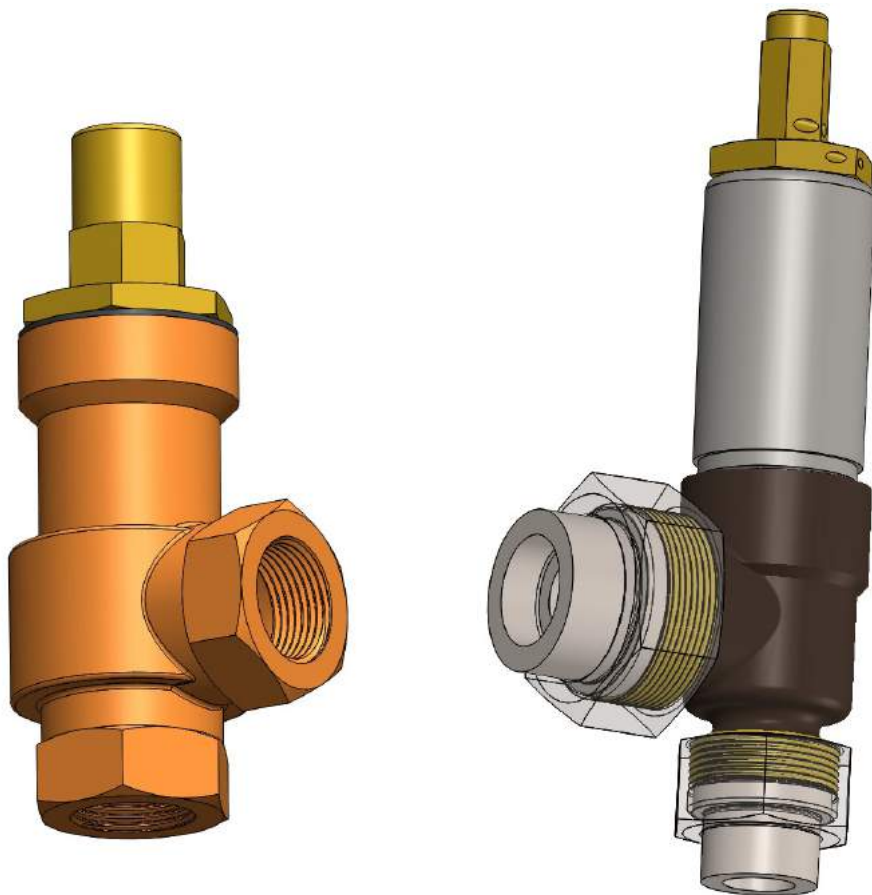


# Relief Valves

## Relief Valves

Precision machined spring-actuated design ensures safe and dependable pressure relieving operation.

- Water, oil, and gas (WOG) compatible
- Firmly held soft seated design assuring rapid and positive reseating after relief
- Fully guided lift throughout actuation
- Various valve end connections:
  - Female NPT - up to 300 PSI (20 bar) relieving pressure
  - O-SEAL<sup>®</sup> Union Thread - up to 6000 PSI (413 bar) relieving pressure
  - US Navy Approved per MIL-V-22549
  - Shock approved per MIL-S-901
  - Vibration approved per MIL-STD-167



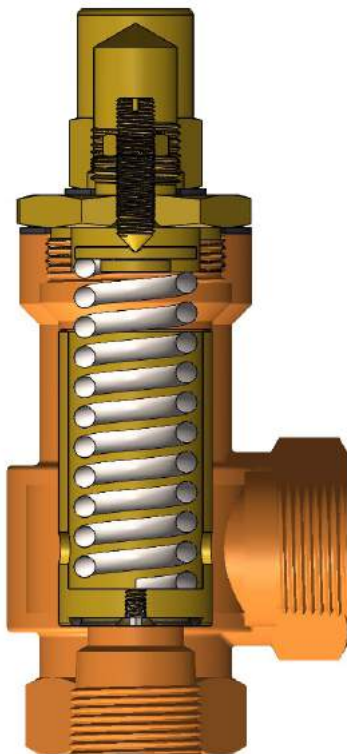


# Relief Valves

Female NPT Threaded - 1/2" to 1" - 300 PSI (20 bar)

EXAMPLE **150** **-4**

Valve Type	Pipe Size
150 Bronze Body - Soft (O-Ring) Seat	-3 1/2" Female NPT
151 Steel Body - Soft (O-Ring) Seat	-4 3/4" Female NPT
	-5 1.00" Female NPT



Part No. 150 & 151 Relief Valve - ESTIMATED CAPACITIES						
Set Press. (PSI)	Air Capacities - SCFM* (10% accumulation)			Water Capacities - GPM* (25% accumulation)		
	Valve Size			Valve Size		
	-3	-4	-5	-3	-4	-5
5	71	157	241	10	24	37
10	90	198	310	15	34	53
20	129	280	450	21	48	75
30	168	376	590	25	59	91
40	206	464	724	29	68	106
50	245	550	860	33	76	118
60	283	635	1000	36	83	129
70	322	723	1130	39	89	140
80	361	810	1269	41	96	149
90	399	896	1405	44	101	158
100	438	980	1535	46	107	167
110	476	1070	1673	49	112	175
120	515	1160	1810	51	117	183
130	553	1241	1945	53	122	190
140	592	1330	2079	55	126	198
150	631	1418	2219	57	131	205
160	670	1478	2279	59	135	211
170	709	1563	2410	60	139	218
180	748	1648	2542	62	143	224
190	786	1734	2673	64	147	230
200	825	1819	2805	65	151	236
225	922	2032	3133	69	160	250
250	1018	2245	3462	73	169	264
275	1115	2458	3790	77	177	277
300	1212	2671	4119	80	185	289

\*Discharge capacities are computed for set pressure plus accumulation (or overpressure) shown in tables with air and water at ambient conditions.

**Notes:**

1. Formulas used to calculate capacities are derived from API Recommended Practice 520 and ASTM F1508.
2. Relief Valve Standards:  
Set Pressure Tolerance: ±2%  
Reseat (Blowdown) Pressure Tolerance: -7%

Specifications	Bronze Body . . 300 PSI - 150 Series - Bronze/Brass Trim; Soft Seat		
	Steel Body . . 300 PSI - 151 Series - Steel Trim; Soft Seat		
Size	-3	-4	-5
Overall Length	5.38	6.25	7.00
Female Inlet and Outlet (NPT)	1/2"-14	3/4"-14	1.000"-11.5
Center of Outlet to Bottom	1.44	1.75	2.00
Weight (lbs.)	2.4	3.8	5.3

Standard temperature range of -30°F to 250°F (-34°C to 121°C) with Buna-N O-Ring.  
For other available O-Ring options, please contact customer service.

# Relief Valves

## O-SEAL® Relief Valves

### Application

- High pressure hydraulic systems
- High pressure pumping systems
- High and low pressure tanks
- High pressure piping systems
- High pressure test systems

### Features

- Wide range of options to relieve high or over pressure
- Sensitive spring adjustment permits accurate control of the blowdown pressure setting
- Guided lift and energized poppet seal design assure positive, leak-proof reseating every time
- O-SEAL® union connections provide exceptional adaptability
- Pressure ratings from vacuum up to 6000 PSI (413 bar)
- Standard temperature range of -15°F to 400°F (-26°C to 204°C) with Viton® O-Rings\*
- Soft seated for bubble-tight performance

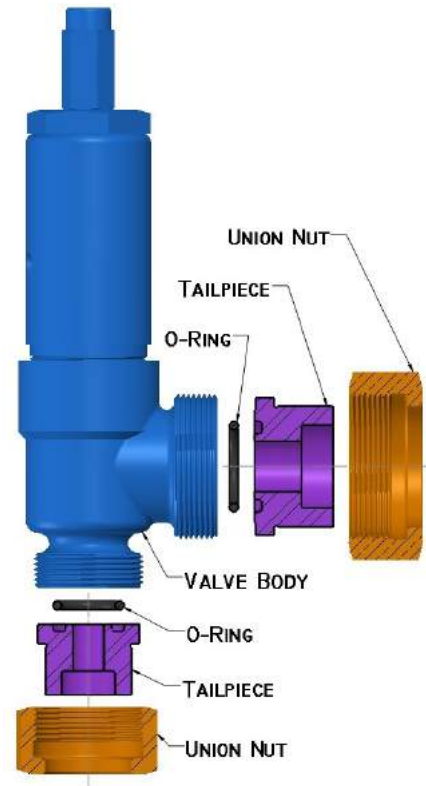
\*See O-Ring Temperature Ratings table on page 29 for temperature ranges of optional O-Ring materials.

### Models

- 157A offers a full-size body with increased flow capacity
- 158 uses a compact body where clearance is a concern

### Materials

- Body: High Tensile Bronze
- Poppet: 300 Series Stainless Steel
- Seat Assembly: 300 Series Stainless Steel
- Sleeve: High Tensile Bronze
- Spring: Pretempered Alloy Steel



Valve Type	Orifice Size	*Set Pressure Requirement
158 -3 x -5 O-SEAL® Thread	- 0.156	- _____ PSIG
157A -3 x -6 O-SEAL® Thread	- 0.219	
	- 0.313	
	- 0.438	
	** - 0.500**	

\*See chart on page 85 for set pressure range per orifice size.

\*\*This orifice size is only available with Valve Type 158.

# Relief Valves

## O-SEAL® Relief Valves

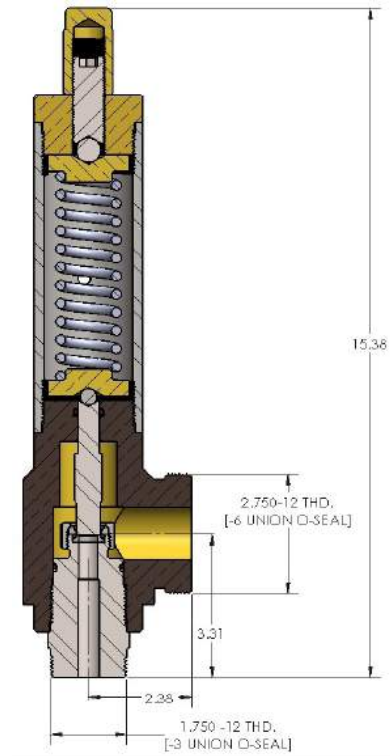
### Part No. 157A Relief Valve - ESTIMATED CAPACITIES

Set Press. (PSI)	Air Capacities - SCFM* (10% accumulation)				Water Capacities - GPM* (10% accumulation)			
	Orifice Dia. - in				Orifice Dia. - in			
	0.156	0.219	0.313	0.438	0.156	0.219	0.313	0.438
30	----	----	----	116	----	----	----	9
100	----	----	154	302	----	----	9	17
200	----	142	291	569	----	4	12	24
300	106	209	427	836	3	6	15	29
400	140	276	563	1103	4	7	17	33
500	174	342	699	1370	4	8	19	37
1,000	343	676	1381	2704	6	13	27	53
1,500	512	1009	2062	4037	7	13	33	65
2,000	681	1343	2743	5371	8	16	38	75
2,500	851	1676	3424	6705	9	19	43	83
3,000	1020	2010	4105	8039	11	21	47	91
3,500	1189	2343	4787	----	12	23	50	----
4,000	1358	2677	----	----	13	26	----	----
5,000	1697	3344	----	----	15	29	----	----
6,000	2035	4011	----	----	16	32	----	----

\*Discharge capacities are computed for set pressure plus accumulation (or overpressure) shown in tables with air and water at ambient conditions.

**Notes:**

- Formulas used to calculate capacities are derived from API Recommended Practice 520 and ASTM F1508.
- Relief Valve Standards:  
Set Pressure Tolerance: ±2%  
Reseat (Blowdown) Pressure Tolerance: -7%



157A

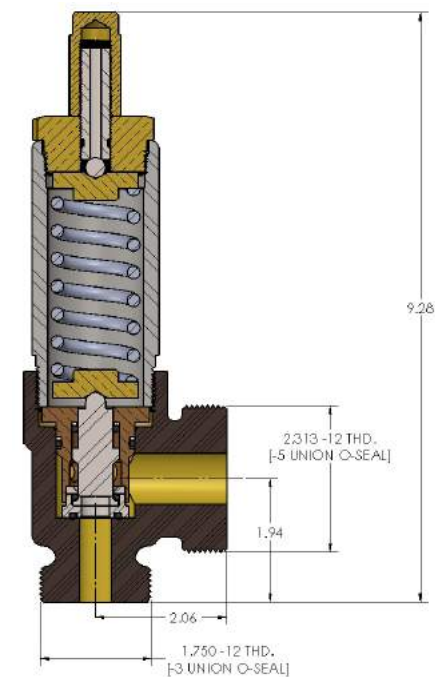
### Part No. 158 Relief Valve - ESTIMATED CAPACITIES

Set Press. (PSI)	Air Capacities - SCFM* (10% accumulation)					Water Capacities - GPM* (10% accumulation)				
	Orifice Dia. - in					Orifice Dia. - in				
	0.156	0.219	0.313	0.438	(158A) 0.500	0.156	0.219	0.313	0.438	(158A) 0.500
30	----	22	44	86	112	----	1	2	3	4
100	----	56	115	225	294	----	1	3	6	8
200	54	106	217	424	553	1	2	4	8	11
300	79	156	318	623	812	1	3	5	10	13
400	104	205	420	822	1071	2	3	6	12	16
500	129	255	521	1020	1330	2	3	7	13	17
1,000	256	504	1029	2014	2625	2	5	10	19	25
1,500	382	752	1536	3008	3920	3	6	12	23	30
2,000	508	1001	2044	4002	5215	3	7	14	27	35
2,500	634	1249	2131	----	----	4	7	15	----	----
3,000	760	1497	3062	----	----	4	8	17	----	----
4,000	1012	1994	3993	----	----	5	9	19	----	----
5,000	1264	2491	----	----	----	5	11	----	----	----
6,000	1516	2988	----	----	----	6	12	----	----	----

\*Discharge capacities are computed for set pressure plus accumulation (or overpressure) shown in tables with air and water at ambient conditions.

**Notes:**

- Formulas used to calculate capacities are derived from API Recommended Practice 520 and ASTM F1508.
- Relief Valve Standards:  
Set Pressure Tolerance: ±2%  
Reseat (Blowdown) Pressure Tolerance: -7%



158

# Our Company Values



CPV Manufacturing is a Member of

