



VALVES, FITTINGS & TUBING PRESSURE VESSELS & REACTORS



High Pressure Equipment
A GRACO Company



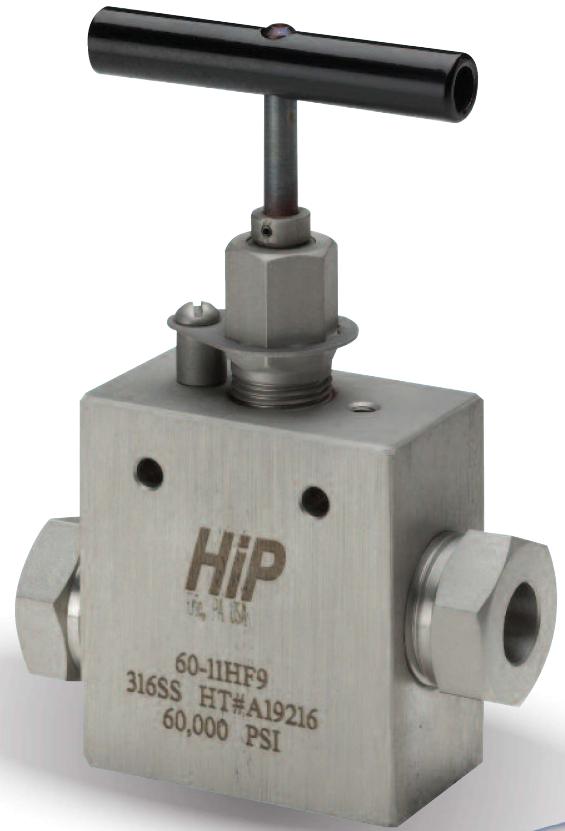
HiP... Our Name is High Pressure

High pressure valves, fittings and tubing manufactured to the highest quality standards, delivered with the shortest lead times, and priced to make you money... it's been the focus at HiP throughout our more than 65 year history. We offer a broad product portfolio capable of handling pressures up to 150,000 psi and carry an extensive inventory allowing us to offer same day shipping of many items. In addition to our high pressure valves, we offer a complete line of reactors and pressure vessels and an expanded family of pumping systems and instrument valves.

In addition to our standard products, we offer a complete line of valves and fittings for oil and gas industry use with sour gas (H₂S). For applications involving specialty gases, corrosive liquids, and extreme temperatures/conditions, we'll make our products using exotic alloys and temperature extensions, as well as design and build a solution to meet your exact requirements, such as our popular custom manifolds. This dedication to satisfying our loyal customers is the driving force behind our continued growth, including our passing the 4 million high pressure valves and fittings shipped milestone.

Commitment to Quality

As a company that exclusively deals in elevated pressure applications, we understand that our customers depend on our products to provide safe and reliable operation at pressures as high as 150,000 psi. Throughout our history we have been dedicated to continuous improvement in all aspects of our manufacturing operation and customer service. This commitment has only increased over time, including our joining the Graco family of companies and implementing their world class quality systems.



Markets

Our high standards for quality, service and value have enabled us to achieve preferred supplier status with a wide variety of market leaders in many different industries.

- **Waterjet Cutting and Blasting**
- **Oil and Gas**
- **Chemical and Petrochemical**
- **Research and Development**
- **Universities and Government**
- **General Industry**

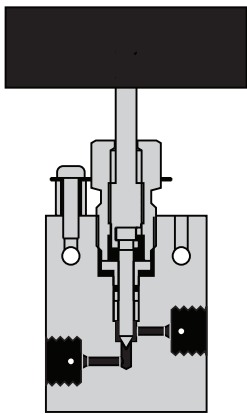
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Valve Design

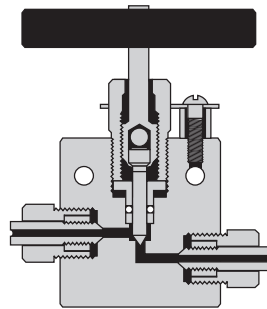
General

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- Valve bodies through 100,000 psi are high tensile Type 316 stainless steel, 150,000 psi valve bodies are 17-4 PH stainless steel.
- Stem assemblies have non-rotating tips to prevent galling with valve seats.
- Packing is located below the stem threads to prevent contact with media (liquid or gas).
- Packing glands are equipped with locking devices or lock nuts.
- Six valve patterns (see chart on page 7).
- Tubing connections are: $\frac{1}{16}$ " , $\frac{1}{8}$ " , $\frac{1}{4}$ " , $\frac{3}{8}$ " , $\frac{9}{16}$ " , $\frac{3}{4}$ " , 1" and $1\frac{1}{2}$ ".
Pipe connections include: $\frac{1}{8}$ " , $\frac{1}{4}$ " , $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{3}{4}$ " , and 1" NPT.
- Remote control air operators are available for most valves.



Slotted Stem



Rolled Style Stem

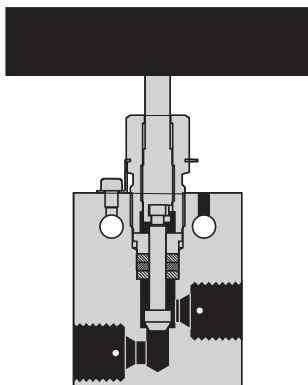
Slotted Stem: Non-rotating slotted stems are standard on AF4, AF6, LF4, LF6, LF9, HF6, HF4, and HF9 (30,000 psi) HF2, HF4, HF6, HF9 (60,000 psi) for on-off service and ensure long life on valve seats. Regulating tip stems are available for all valves at no additional cost, add -REG to part number.

Rolled Style Stem: This simple two-piece design is also non-rotating and is ideal for smaller valves and for valves made from exotic materials. The standard lower section stem is manufactured from hardened 17-4 PH stainless steel. It is affixed to a one-piece upper stem requiring no periodic adjustment. The two stem components are free to rotate independently of each other, thereby minimizing rotation of the lower stem against the valve seat.

The Rolled Style Stem is standard for all AF1, AF2, NFA, NFB, LF4, LF6 valves, 30,000 psi HF2, XF4, and XF6 valves, as well as most valves requiring stems made from exotic materials. It is optional for any valve normally supplied with a Positive Guide Stem.

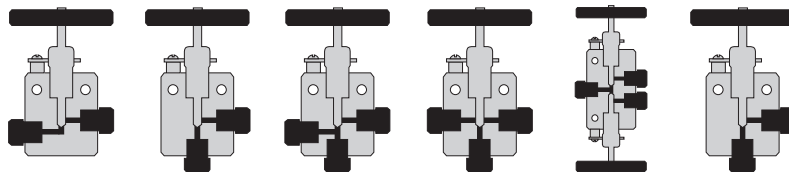
Pinned Stem Design: This variation on the Rolled Style Stem is a three-piece design in which the lower stem is pinned into a freely-rotating stem guide. It has all of the advantages of the rolled style stem, with the additional benefit of a replaceable lower section stem.

The Pinned Stem Design is standard for all NFC, NFD, NFF, NFH, LF9, LF12, LF16, and HF16 valves.



Pinned Stem

Quick Selector Guide to Standard Valves



1

Taper Seal Valves

NPT Valves

Medium Pressure Valves

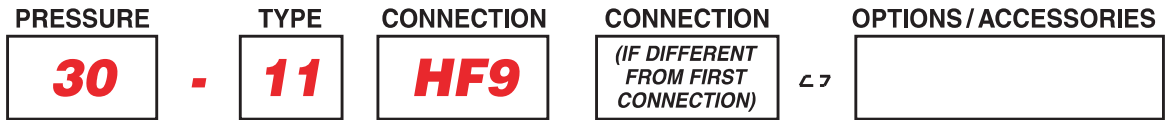
High Pressure Valves

Ultra High Pressure Valves

	10,000 psi	15,000 psi	10,000 psi	15,000 psi	10,000 psi	15,000 psi	20,000 psi	30,000 psi	60,000 psi	100,000 psi	150,000 psi
	1/4" O.D. / 1/8" I.D.	1/8" O.D. / .030" I.D.	1/8" O.D. / 1/4" I.D.	1/8" O.D. / 1/16" I.D.	3/8" O.D. / 1/2" I.D.	1/2" O.D. / 3/4" I.D.	1" O.D. / 1 1/16" I.D.	1/4" O.D. / 7/64" I.D.	1/8" O.D. / .040" I.D.	1/8" O.D. / .020" I.D.	3/8" O.D. / 1/16" I.D.
	Two Way Straight	Two Way Angle	Three Way Two Press	Three Way One Press	Three Way Two Stem	Replaceable Seat					
	10-11AF4	10-12AF4	10-13AF4	10-14AF4	10-15AF4	10-12AF4-R					
	10-11AF6	10-12AF6	10-13AF6	10-14AF6	10-15AF6	10-12AF6-R					
	15-11AF1	15-12AF1	15-13AF1	15-14AF1	15-15AF1	NA					
	15-11AF2	15-12AF2	15-13AF2	15-14AF2	15-15AF2	NA					
	10-11NFA	10-12NFA	10-13NFA	10-14NFA	10-15NFA	10-12NFA-R					
	10-11NFB	10-12NFB	10-13NFB	10-14NFB	10-15NFB	10-12NFB-R					
	10-11NFC	10-12NFC	10-13NFC	10-14NFC	10-15NFC	10-12NFC-R					
	10-11NFD	10-12NFD	10-13NFD	10-14NFD	10-15NFD	10-12NFD-R					
	10F-11NFF	10F-12NFF	10F-13NFF	10F-14NFF	10F-15NFF	10F-12NFF-R					
	10F-11NFH	10F-12NFH	10F-13NFH	10F-14NFH	10F-15NFH	10F-12NFH-R					
	15F-11NFA	15F-12NFA	15F-13NFA	15F-14NFA	15F-15NFA	15F-12NFA-R					
	15F-11NFB	15F-12NFB	15F-13NFB	15F-14NFB	15F-15NFB	15F-12NFB-R					
	15F-11NFC	15F-12NFC	15F-13NFC	15F-14NFC	15F-15NFC	15F-12NFC-R					
	15F-11NFD	15F-12NFD	15F-13NFD	15F-14NFD	15F-15NFD	15F-12NFD-R					
	10-11LF12	10-12LF12	10-13LF12	10-14LF12	10-15LF12	10-12LF12-R					
	10-11LF16	10-12LF16	10-13LF16	10-14LF16	10-15LF16	10-12LF16-R					
	15-11LF24	15-12LF24	15-13LF24	15-14LF24	15-15LF24	15-12LF24-R					
	20-11LF4	20-12LF4	20-13LF4	20-14LF4	20-15LF4	20-12LF4R					
	20-11LF6	20-12LF6	20-13LF6	20-14LF6	20-15LF6	20-12LF6R					
	20-11LF9	20-12LF9	20-13LF9	20-14LF9	20-15LF9	20-12LF9R					
	20-11LF12	20-12LF12	20-13LF12	20-14LF12	20-15LF12	20-12LF12R					
	20-11LF16	20-12LF16	20-13LF16	20-14LF16	20-15LF16	20-12LF16R					
	30-11HF2	30-12HF2	30-13HF2	30-14HF2	30-15HF2	30-12HF2R					
	30-11HF4	30-12HF4	30-13HF4	30-14HF4	30-15HF4	30-12HF4R					
	30-11HF6	30-12HF6	30-13HF6	30-14HF6	30-15HF6	30-12HF6R					
	30-11HF9	30-12HF9	30-13HF9	30-14HF9	30-15HF9	30-12HF9R					
	30-11HF16	30-12HF16	30-13HF16	30-14HF16	30-15HF16	30-12HF16R					
	60-11HF2	60-12HF2	60-13HF2	60-14HF2	60-15HF2	60-12HF2R					
	60-11HF4	60-12HF4	60-13HF4	60-14HF4	60-15HF4	60-12HF4R					
	60-11HF6	60-12HF6	60-13HF6	60-14HF6	60-15HF6	60-12HF6R					
	60-11HF9	60-12HF9	60-13HF9	60-14HF9	60-15HF9	60-12HF9R					
	100-11XF4	100-12XF4	100-13XF4	100-14XF4	NA	100-12XF4R					
	150-11XF6	150-12XF6	150-13XF6	150-14XF6	NA	150-12XF6R					

Catalog Numbering System

1



Pressure Series

- 10 = 10,000 psi
- 15 = 15,000 psi
- 20 = 20,000 psi
- 30 = 30,000 psi
- 40 = 40,000 psi
- 60 = 60,000 psi
- 100 = 100,000 psi
- 150 = 150,000 psi

Catalog part numbers for some components (NPT fittings, special alloy parts) have been maintained for historical consideration.

The referred pressure series may not reflect the actual pressure rating. Please refer to applicable catalog page for pressure rating, or consult the factory.

Type of Components

- 2 = Gland, Collar or Sleeve
- 3 = Anti-Vibration Assembly
- 7 = Plug
- 11 = 2-Way Straight Valve
- 12 = 2-Way Angle Valve
- 13 = 3-Way Valve with Two Pressure Connections
- 14 = 3-Way Valve with One Pressure Connections
- 15 = 3-Way, 2-Stem Valve
- 16 = Ball Valve (Floating)
- 21 = Coupling or Adapter
- 22 = Elbow
- 23 = Tee
- 24 = Cross
- 41 = Check Valve
- 51 = Line Filter
- 61 = Safety Head (Straight)
- 63 = Safety Head (Tee Type)
- 71 = 2-Way Ball Valve *
- 72 = 3-Way Ball Valve 180° *
- 73 = 3-Way Ball Valve Diverter *
- 74 = 2-Way Ball Valve *
- 75 = 3-Way Ball Valve 180° *
- 76 = 3-Way Ball Valve Diverter *
- 77 = 3-Way Mini Ball Valve 1/4" NPT
- 80 = 2-Way Ball Valve *
- 81 = 3-Way Ball Valve 180° *
- 82 = 3-Way Ball Valve Diverter *

* (Trunion)

Connection(s) Size and Type

Female	Male
AF1	AM1 1/16" Taper Seal
AF2	AM2 1/8" Taper Seal
AF4	AM4 1/4" Taper Seal
AF6	AM6 3/8" Taper Seal
LF4	LM4 1/4" Medium Pressure
LF6	LM6 3/8" Medium Pressure
LF9	LM9 9/16" Medium Pressure
LF12	LM12 3/4" Medium Pressure
LF16	LM16 1" Medium Pressure
LF24	LM24 1 1/2" Medium Pressure
HF2	HM2 1/8" High Pressure
HF4	HM4 1/4" High Pressure
HF6	HM6 3/8" High Pressure
HF9	HM9 9/16" High Pressure
HF16	HM16 1" High Pressure
XF4	XM4 1/4" Ultra High Pressure
XF6	XM6 3/8" Ultra High Pressure
NFA	NMA 1/8" NPT Pipe
NFB	NMB 1/4" NPT Pipe
NFC	NMC 3/8" NPT Pipe
NFD	NMD 1/2" NPT Pipe
NFF	NMF 3/4" NPT Pipe
NFH	NMH 1" NPT Pipe
—	HA9 9/16" Hose
—	HA12 3/4" Hose
—	HA16 1" Hose
—	HA21 1 5/16" Hose

Options

- V = Micro Control Metering Assembly
- HT = High Temperature Stem Extension (Up to 1,000° F)
- SGS = Sour Gas (H₂S) Service
- N/O = Normally Open
- N/C = Normally Closed
- K = With Antivibration Collars and Glands
- REG = Regulating Tip
- TSR8 = Ball Valve Actuator
- TDA8 = Ball Valve Actuator Double Acting
- W/O = Without Collars and Glands
- LT = Low Temperature Stem Extension (to -320°F)
- MPO-NO = Medium Duty Piston Operator Normally Open
- MPO-NC = Medium Duty Piston Operator Normally Closed
- HPO-NO = Heavy Duty Piston Operator Normally Open
- HPO-NC = Heavy Duty Piston Operator Normally Closed
- EHPO-NO = Extra Heavy Piston Operator Normally Open
- EHPO-NC = Extra Heavy Piston Operator Normally Closed
- OC = Oxygen Cleaning
- HL = Handle Lock (Ball Valve Only)
- MHNO = Mini Hippo Normally Open
- MHNC = Mini Hippo Normally Closed
- LS = Limit Switch

How to Order Valves and Fittings

Simply indicate catalog number and specify option or special requirement.

Examples:

30-11HF4 = 30,000 psi Straight Valve for 1/4" O.D. tubing

60-23HF4 = 60,000 psi Tee for 1/4" O.D. tubing

15-21AF2 = 15,000 psi Straight Coupling for 1/8" O.D. tubing, Taper Seal connections

15-21AF2NMB = 15,000 psi Adapter with one end 1/8" O.D. Female Taper Seal and opposite end Male 1/4" NPT Pipe

30-11HF6-HT = 30,000 psi Straight Valve for 3/8" O.D. tubing with High Temperature Extension

"HIPCO" 10-12NFB (N/C) = 10,000 psi Angle Valve for 1/4" NPT Pipe with "Hipco" Air Operator, Normally Closed

"HIPPO" 15-11A4F (N/C) = 10,000 psi Angle Valve for 1/4" Taper Seal with "Hippo" Piston Operator, Normally Closed

60-21HF4 (Hastelloy C-276) = 60,000 psi Straight Coupling for 1/4" O.D. tubing, made from Hastelloy C-276 material



High Pressure Equipment

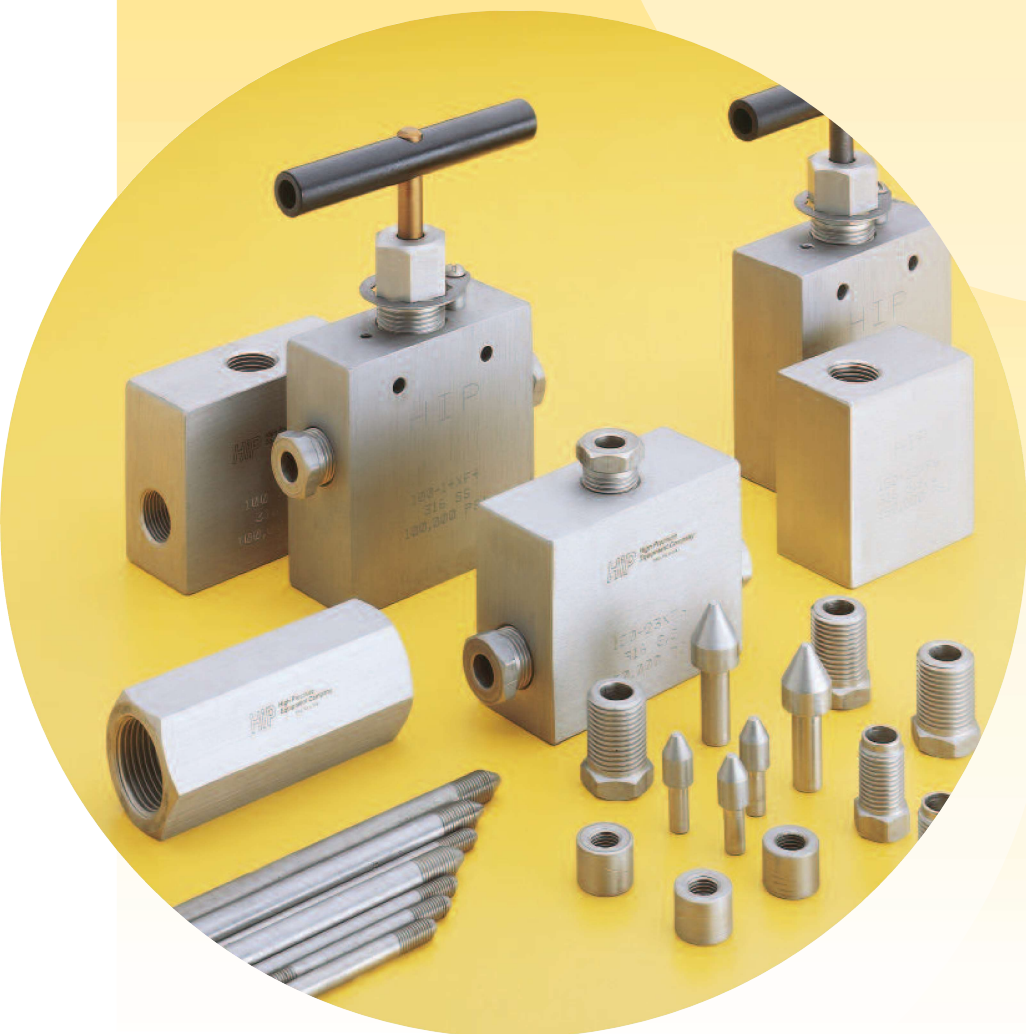
Ultra High Pressure Valves, Fittings and Tubing **100,000 and 150,000 psi service**

High Pressure Equipment Company has developed a line of Ultra High Pressure products to assure safe and easy plumbing for 100,000 psi and 150,000 psi. These needle valves, fittings, check valves, tubing and nipples are engineered to the highest standards of repeatable quality. The reliable performance of these products has made HiP one of the world's leading suppliers of elevated pressure components.

Ultra High Pressure components use a coned-and-threaded connection which accommodates the extreme conditions found in these applications. Ultra High Pressure valves are available in $\frac{1}{4}$ " , $\frac{3}{8}$ " and $\frac{9}{16}$ " O.D. tubing sizes and four patterns to satisfy widely varied requirements. A line of fittings is available to facilitate adapting to High Pressure systems.

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100,000 and 150,000 psi Ultra High Pressure Valves

High Pressure (coned and threaded) type connections for $\frac{1}{4}$ ", $\frac{3}{8}$ " and $\frac{9}{16}$ " O.D. tubing.

Non-rotating slotted stems insure long life on valve seats. Heavy duty "rolled style" stem design is shown below.

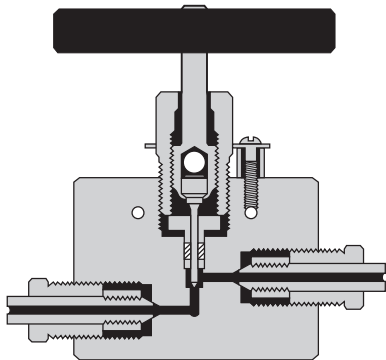
Glands and collars for tubing are supplied with each valve unless otherwise requested (glands and collars are shown on page 61).

Materials include 316 and 17-4 stainless steel for valve bodies with tool steel lower section stems. Valve packing is teflon.

Corresponding fittings (elbows, tees, crosses, etc.) are shown on page 59.

Replaceable Seat Valves are available for $\frac{1}{4}$ " O.D. tubing. These valves feature the same body style and body dimensions as the two way angle valves (shown below).

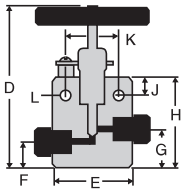
To order add "R" to the corresponding two way valve catalog number (eg. 100-12XF4R).



Valve Features

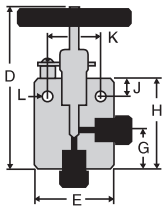
- Non-rotating slotted stem design
- Packing below stem threads
- Type 316 ss high tensile bodies
- Positive gland lock device
- No stem adjustment needed
- Black T-handles
- Tube sizes $\frac{1}{4}$ " through $\frac{9}{16}$ "

Ultra High Pressure Valves



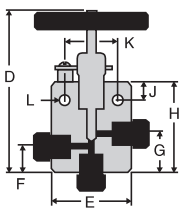
Two Way Straight Valves

Tubing	Catalog No.	psi	Conn.	Orifice	Cv	D	E	F	G	H	J	K	L	Thickness
1/4" O.D.	100-11XF4	100,000	XF4	1/16"	0.04	5"	2 5/8"	3/4"	1 1/16"	2 1/2"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	100-11UF6	100,000	UF6	1/16"	-	5 5/16"	3"	1/2"	1 3/16"	2 1/4"	1/2"	1 5/8"	7/32"	1 1/2"
9/16" O.D.	100-11UF9	100,000	UF9	1/16"	-	4 5/8"	3 1/2"	1"	1 7/16"	2 7/8"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	150-11XF6	150,000	XF6	1/16"	0.04	5"	3 1/2"	7/8"	1 3/16"	2 5/8"	1/2"	1 5/8"	7/32"	1 1/2"



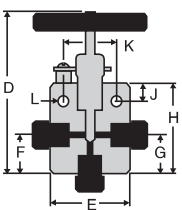
Two Way Angle Valves

Tubing	Catalog No.	psi	Conn.	Orifice	Cv	D	E	F	G	H	J	K	L	Thickness
1/4" O.D.	100-12XF4	100,000	XF4	1/16"	0.006	5 1/4"	2 5/8"	-	1 5/16"	2 3/4"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	100-12UF6	100,000	UF6	1/16"	-	6 1/16"	2 1/4"	-	1 3/16"	3"	1/2"	1 5/8"	7/32"	1 1/2"
9/16" O.D.	100-12UF9	100,000	UF9	1/16"	-	5 5/8"	3 1/2"	-	1 7/16"	3"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	150-12XF6	150,000	XF6	1/16"	0.006	5 7/8"	3 1/2"	-	2 1/16"	3 1/2"	1/2"	1 5/8"	7/32"	1 1/2"



Three Way Valves / Two Inlets

Tubing	Catalog No.	psi	Connection	Orifice	D	E	F	G	H	J	K	L	Thickness
1/4" O.D.	100-13XF4	100,000	XF4	1/16"	5 1/2"	2 5/8"	1 1/4"	1 9/16"	3"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	100-13UF6	100,000	UF6	1/16"	6 1/16"	3"	1 1/2"	1 13/16"	3 1/4"	1/2"	1 5/8"	7/32"	1 1/2"
9/16" O.D.	100-13UF9	100,000	UF9	1/16"	5 3/8"	3 1/2"	1"	1 7/16"	3"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	150-13XF6	150,000	XF6	1/16"	5 7/8"	3 1/2"	1 3/4"	2 1/16"	3 1/2"	1/2"	1 5/8"	7/32"	1 1/2"



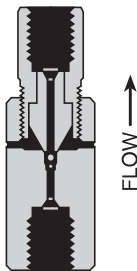
Three Way Valves / One Inlet

Tubing	Catalog No.	psi	Connection	Orifice	D	E	F	G	H	J	K	L	Thickness
1/4" O.D.	100-14XF4	100,000	XF4	1/16"	5 1/4"	2 5/8"	1 5/16"	1 5/16"	2 3/4"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	100-14UF6	100,000	UF6	1/16"	6"	3 1/2"	2 1/16"	2 1/16"	3 1/2"	1/2"	1 5/8"	7/32"	1 1/2"
9/16" O.D.	100-14UF9	100,000	UF9	1/16"	5 3/8"	3 1/2"	1 7/16"	1 7/16"	3"	1/2"	1 5/8"	7/32"	1 1/2"
3/8" O.D.	150-14XF6	150,000	XF6	1/16"	5 7/8"	3 1/2"	2 1/16"	2 1/16"	3 1/2"	1/2"	1 5/8"	7/32"	1 1/2"

Check Valves/Elbows/Tees/Crosses

We have developed check valves, elbows, tees and crosses for both the 100,000 and 150,000 psi systems. *Material is high tensile 316 stainless steel. Standard tubing glands and collars are furnished unless otherwise specified.

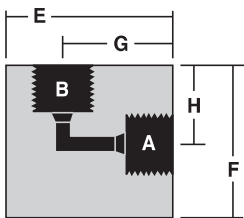
* **Note:** Material for 150,000 psi check valve is 17-4. Material for UF6 and UF9 parts is 15-5.



Ultra High Pressure Check Valves

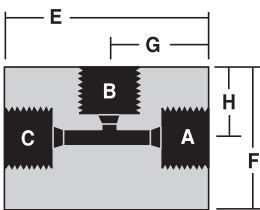
Catalog No.	psi	Connections	Length	Hex
100-41XF4	100,000	1/4" ULTRA PRESSURE	3 ⁹ / ₁₆ "	1 1/2"
100-41UF6	100,000	3/8" ULTRA PRESSURE	4 1/2"	1 1/2"
100-41UF9	100,000	9/16" ULTRA PRESSURE	3 ¹¹ / ₁₆ "	1 ⁷ / ₈ "
150-41XF6	150,000	3/8" ULTRA PRESSURE	4 1/2"	1 1/2"

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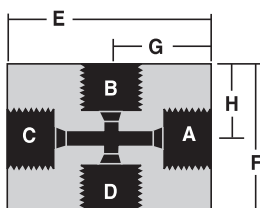
Ultra High Pressure Elbows

Catalog No.	Pressure Rating psi	Connections	A-B-C-D	E	F	G	H	Thickness
100-22XF4	100,000	1/4" O.D. TUBE	XF4	1 ³ / ₄ "	1 ³ / ₄ "	1 1/4"	1 1/4"	1"
100-22UF6	100,000	3/8" O.D. TUBE	UF6	3"	2 ¹ / ₈ "	1 1/2"	1 1/2"	1 ³ / ₈ "
100-22UF9	100,000	9/16" O.D. TUBE	UF9	2 ⁵ / ₈ "	1 ⁷ / ₈ "	1 ⁷ / ₈ "	1 ¹ / ₈ "	1 1/2"
150-22XF6	150,000	3/8" O.D. TUBE	XF6	2 ⁵ / ₈ "	2 ⁵ / ₈ "	1 ³ / ₄ "	1 ³ / ₄ "	1 1/2"



Ultra High Pressure Tees

Catalog No.	Pressure Rating psi	Connections	A-B-C-D	E	F	G	H	Thickness
100-23XF4	100,000	1/4" O.D. TUBE	XF4	2 1/2"	1 ³ / ₄ "	1 1/4"	1 1/4"	1"
100-23UF6	100,000	3/8" O.D. TUBE	UF6	3"	2 ¹ / ₈ "	1 1/2"	1 1/2"	1 ³ / ₈ "
100-23UF9	100,000	9/16" O.D. TUBE	UF9	2 ⁵ / ₈ "	2 ¹ / ₈ "	1 ⁵ / ₁₆ "	1 ³ / ₈ "	1 1/2"
150-23XF6	150,000	3/8" O.D. TUBE	XF6	3 1/2"	2 ⁵ / ₈ "	1 ³ / ₄ "	1 ³ / ₄ "	1 1/2"



Ultra High Pressure Crosses

Catalog No.	Pressure Rating psi	Connections	A-B-C-D	E	F	G	H	Thickness
100-24XF4	100,000	1/4" O.D. TUBE	XF4	2 1/2"	2 1/2"	1 1/4"	1 1/4"	1"
100-24UF6	100,000	3/8" O.D. TUBE	UF6	3"	3"	1 1/2"	1 1/2"	1 ³ / ₈ "
100-24UF9	100,000	9/16" O.D. TUBE	UF9	2 ⁵ / ₈ "	2 ³ / ₄ "	1 ⁵ / ₁₆ "	1 ³ / ₈ "	1 1/2"
150-24XF6	150,000	3/8" O.D. TUBE	XF6	3 1/2"	3 1/2"	1 ³ / ₄ "	1 ³ / ₄ "	1 1/2"

Ultra High Pressure Valves

Ultra High Pressure Tubing

Tubing is cold drawn, seamless, and is supplied in the $\frac{1}{8}$ hard condition (not annealed). Tensile strength is approximately 40 percent higher than that of annealed tubing. All tubing is manufactured in strict accordance with High Pressure Equipment Company specifications to insure tolerances and bore quality. Tubing is stocked in lengths of 20 to 24 feet but may be ordered in shorter lengths with **no additional cutting charge**.



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	Tubing Size	Working Pressure psi	Wall Thickness	Type of Connection Used	Material	Catalog Order Number
1/4"	1/4" O.D. x 1/16" I.D.	100,000	0.094"	1/4" ULTRA HIGH PRESSURE (XF4)	316 SS	100-9X4-316
					304 SS	100-9X4-304
3/8"	3/8" O.D. x 1/16" I.D.	150,000	0.156"	3/8" ULTRA HIGH PRESSURE (XF6)	304 SS	150-9X6

Nipples

Nipples in lengths other than those shown are supplied upon request. Nipples are not furnished with collars and glands, unless specified at time of order.



Coned and Threaded Nipples

Length ↓	Tubing Size (O.D. x I.D.)		
	1/4" O.D. x 1/16" I.D. (316 SS)	1/4" O.D. x 1/16" I.D. (304 SS)	3/8" O.D. x 1/16" I.D. (304 SS)
psi →	100,000 psi	100,000 psi	150,000 psi
2 3/4"	100-XM4-2.75	100-XM4-2.75	
4"			150-XM6-4
6"	100-XM4-6	100-XM4-6	150-XM6-6
8"	100-XM4-8	100-XM4-8	150-XM6-8
10"	100-XM4-10	100-XM4-10	150-XM6-10
12"	100-XM4-12	100-XM4-12	150-XM6-12

Ultra High Pressure Connections (Coned and Threaded) 100,000 and 150,000 psi service

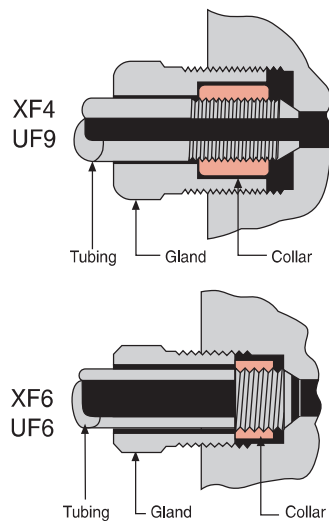
The Ultra High Pressure tubing connection is available for 1/4" and 3/8" O.D. tubing. The tubing may be prepared with the use of tooling (see Tooling section 15) or prepared at the factory to specified lengths. Additionally, standard length coned and threaded nipples are available from stock, see page 60.

This connection has become an industry standard for use at elevated pressures and temperatures in both liquid and gas applications. It may be disassembled and retightened indefinitely.

The threads of the gland are right-hand while the threads of the collar and tubing are left-hand to prevent rotation of the collar during assembly.

Materials. All of the components required for make-up of a Ultra High Pressure connection (glands, collars and plugs) are produced in Type 316 stainless steel.

Necessary glands and collars are provided with all valves and fittings (except nipples) unless otherwise requested (see chart on the right for size details and catalog numbers).



	100,000 psi			150,000 psi
	XF4 1/4" O.D. Tubing	UF6 3/8" O.D. Tubing	UF9 9/16" O.D. Tubing	XF6 3/8" O.D. Tubing
Female Opening Detail				
Gland				
	100-2XM4	100-2UM6	100-2UM9	150-2XM6
Collar				
	100-2X4	100-2U6	100-2U9	150-2X6
Plug				
	100-7XM4	100-7UM6	100-7UM9	150-7XM6
Tube End Prep				
	XM4	UM6	UM9	XM6

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