

High Pressure Valves

» Pressures to 43,000 psi (2,965 bar)



Ordering Information
Typical catalog number:
43V16M072

High pressure valves

Maximator high pressure valves with metal to metal seats have a high level of safety and reliability under adverse operating conditions. These valves may be used both with gases and liquids.

Traceability is ensured through extensively documented data (batch number, max. pressure, material number, type designation). All high pressure valves include glands and collars.

43 V Valve Series	16M O.D. Tube Size	07 Stem Type	2 Body Pattern
43 V	16M – 1"	07 – VEE stem	1 – two-way straight
		08 – REGULATING stem*	2 – two-way angle
		87 – VEE stem with replaceable seat	3 – three-way, two on pressure
		88 – REGULATING stem with replaceable seat*	4 – three-way, one on pressure
			5 – three-way, two-stem manifold

O.D. Size in. (mm)	Connec- tion Type	Orifice Size in. (mm)	Rated Cv**	Pressure Rating @ R.T. psi (bar)***
1 (24.5)	16MF	0.438 (11.1)	2.6	43,000 (2,965)

Consult your MAXIMATOR representative for **repair kits** and valve bodies. Refer to the Technical Information section for proper maintenance procedures.

* tapered tip for regulating and shutoff

** Cv values shown are for 2-way straight pattern vee stem valves. For 2-way angle patterns, increase the Cv value by 50%.

*** See page 2 in the Technical Section for Pressure/Temperature Rating Chart.

Products for Sour
Gas Applications
Pipe Valves & Fittings
to 15,200 psi (1,050 bar)

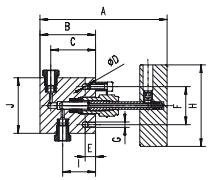
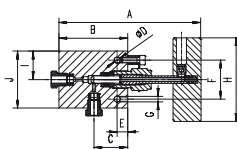
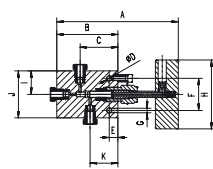
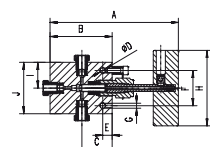
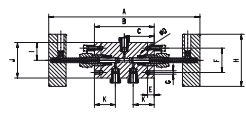
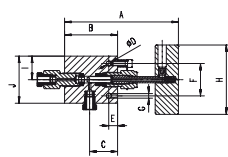
Adapters and
Couplings
Medium Pressure
to 22,500 psi (1,550 bar)

Accessories
High Pressure
to 65,000 psi (4,500 bar)

Tools
Ultra High Pressure
to 152,000 psi (10,500 bar)

Technical
Information
Valve Actuators

Customized
Solutions
Ball Valves
to 21,000 psi (1,500 bar)

Valve Pattern	Catalog Number	Stem Type	O.D. Tube in.	Orifice in. (mm)	Dimensions in. (mm)										Valve Panel Hole	Block Thick-ness
2-Way Straight																
	43V16M071	Vee	1	0.438 (11.1)	9.472 (240)	4.45 (113)	3.50 (88.9)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.736 (69.5)	4.921 (125)		1.614 (41)	2.244 (57)
	43V16M081	Reg														
2-Way Angle																
	43V16M072	Vee	1	0.438 (11.1)	4.76 (121)	5.12 (130)	1.50 (38)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.431 (62.5)	4.921 (125)		1.614 (41)	2.244 (57)
	43V16M082	Reg														
3-Way / 2 on Pressure																
	43V16M073	Vee	1	0.438 (11.1)	10.19 (259)	5.87 (149)	3.75 (95.3)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.431 (62.5)	4.921 (125)	2.81 (71.4)	1.614 (41)	2.244 (57)
	43V16M083	Reg														
3-Way / 1 on Pressure																
	43V16M074	Vee	1	0.438 (11.1)	9.52 (242)	5.20 (132)	2.81 (71.4)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.431 (62.5)	4.921 (125)		1.614 (41)	2.244 (57)
	43V16M084	Reg														
3-Way / 2-Stem Manifold																
	43V16M075	Vee	1	0.438 (11.1)	16.18 (411)	7.52 (191)	3.76 (95.5)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.431 (62.5)	4.921 (125)	2.81 (71.4)	1.614 (41)	2.244 (57)
	43V16M085	Reg														
2-Way Angle / Replaceable Seat																
	43V16M872	Vee	1	0.438 (11.1)	9.61 (244)	5.25 (133)	2.81 (71.4)	0.571 (14.5)	1.122 (28.5)	2.50 (63.5)	10.35 (263)	2.431 (62.5)	4.921 (125)		1.614 (41)	2.244 (57)
	43V16M882	Reg														

G - Panel mounting screw thread size 10-24 UNC (screw included). All dimensions are for reference only and are subject to change.

All technical and dimensional information subject to change. All general Terms and Conditions of sale, including limitations of our liability, apply to all products and services sold.

High Pressure Fittings

» Pressures to 43,000 psi (2,965 bar)

High pressure fittings

Maximator high pressure fittings are designed to be used with the 43V series high pressure valves and high pressure tubing. All high pressure fittings have coned and threaded type connections. Mounting holes are standard on all elbows, tees and crosses.



Tubing Size	Gland	Collar	Plug	Tubing Cap
1	43G16M	43C16M	43P16M	43TC16M

Connection Components

All high pressure fittings are supplied with glands and collars. Refer to the adjacent chart for ordering any of the connection components individually. When using the plug, the collar is not needed.

Fitting Pattern	Catalog Number	Connection Type	O.D. Tube Size in.	Orifice in. (mm)	Dimensions in. (mm)							Block Thick-ness
					A	B	C	D	E	F	G	
Elbow												
	43L16M	16MF	1	0.438 (11.1)	2.07 (52.5)	3.00 (76.2)	4.13 (105)	2.06 (52.3)	1.38 (35)	1.38 (35)	0.53 (13.5)	1.77 (45)
Tee												
	43T16M	16MF	1	0.438 (11.1)	2.07 (52.5)	3.00 (76.2)	4.13 (105)	2.06 (52.3)	1.38 (35)	2.76 (70)	0.53 (13.5)	1.77 (45)
Cross												
	43X16M	16MF	1	0.438 (11.1)	2.07 (52.5)	4.13 (105)	4.13 (105)	2.07 (52.5)	1.38 (35.2)	2.75 (70)	0.53 (13.5)	1.77 (45)
Straight Coupling / Union Coupling												
<div><div>Straight Coupling</div></div>	43F16M	16MF	1	0.438 (11.1)	3.50 (89)	2.00 (50.8)	Straight Coupling					
<div><div>Union Coupling</div></div>	43UF16M						Union Coupling					
Bulkhead Coupling												
	43BF16M	16MF	1	0.438 (11.1)	3.50 (88.9)	2.00 (50.8)	2.36 (60)	1.69 (43)	0.47 (12)			

See page 2 in the Technical Section for pressure/temperature rating chart.
All dimensions are for reference only and are subject to change.
All technical and dimensional information subject to change. All general Terms and Conditions of sale, including limitations of our liability, apply to all products and services sold.

Products for Sour Gas Applications

Pipe Valves & Fittings
to 15,200 psi (1,050 bar)

Adapters and Couplings
Medium Pressure
to 22,500 psi (1,550 bar)

Accessories
High Pressure
to 65,000 psi (4,500 bar)

Tools
Ultra High Pressure
to 152,000 psi (10,500 bar)

Technical Information

Valve Actuators

Customized Solutions
Ball Valves
to 21,000 psi (1,500 bar)

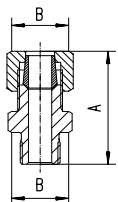
Anti-Vibration and Safety Head Assembly

» Pressures to 43,000 psi (2,965 bar)

Anti-vibration collet gland assemblies

Maximator anti-vibration collet gland assemblies are for use in applications where there could be extreme external mechanical vibrations or shock in tubing lines. These collet gland assemblies are interchangeable with the standard high pressure coned and threaded tube connections.

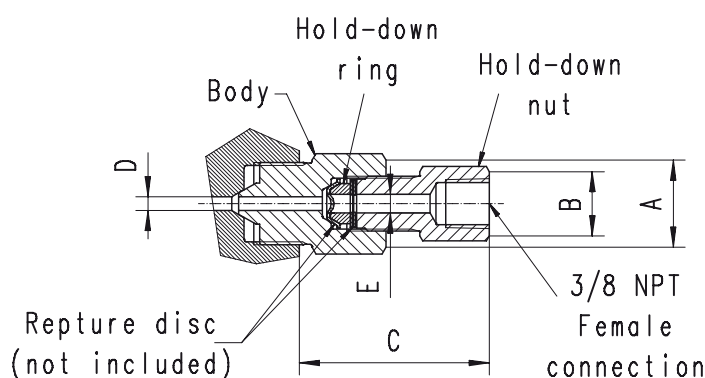


Gland Pattern	Catalog Number	Part	O.D. Tubing Size in.	Dimensions in. (mm)	
				A	B (Hex.)
	43AVA16M	Complete Assembly	1	2.44 (61.9)	1.50 (38.1)
	43AVB16M	Collet Body			
	43AVC16M	Slotted Collet			
	43AVG16M	Gland Nut			

All dimensions are for reference only and are subject to change.

Safety head assemblies

Maximator safety head assemblies are used to provide over-pressure protection to high pressure systems. These safety head assemblies are to be used with the appropriate 1/4" angular and flat rupture disc.



Safety Head Assembly Catalog Number without Disc	Fits Connection Type	Pressure Rating psi (bar)	Body Torque ft - lbs. (Nm)	Dimensions in. (mm)				
				A (Hex.)	B (Hex.)	C (LG.)	D (I.D.)	E (I.D.)
43SH16M	16MF	43,000 (2,965)	150 (200)	1.44 (36.5)	0.88 (22.4)	2.72 (69.1)	0.307 (7.8)	0.250 (6.3)

All dimensions for reference only and are subject of change

All technical and dimensional information subject to change. All general Terms and Conditions of sale, including limitations of our liability, apply to all products and services sold.

Products for Sour Gas Applications
Pipe Valves & Fittings
to 15,200 psi (1,050 bar)

Adapters and Couplings
Medium Pressure
to 22,500 psi (1,550 bar)

Accessories
High Pressure
to 65,000 psi (4,500 bar)

Tools
Ultra High Pressure
to 152,000 psi (10,500 bar)

Technical Information
Valve Actuators

Customized Solutions
Ball Valves
to 21,000 psi (1,500 bar)

Check Valves

» Pressures to 43,000 psi (2,965 bar)

O-Ring Check Valves

Maximator O-Ring Check Valves provide high quality directional flow control and tight shut-off for liquids and gases. All Check Valves are supplied with glands and collars. These Check Valves are not to be used as a relief device. The opening pressure of the O-Ring Check Valves is approx. 20 psi (1.5 bar).

» **Materials:**

Body, cover, poppet, cover gland: 316 stainless steel

Spring: 300 series stainless steel

O-Ring: FKM "A" [-4°F to 392°F(-20°C to 200°C)]

Ball Check Valves

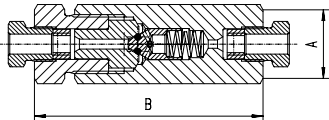
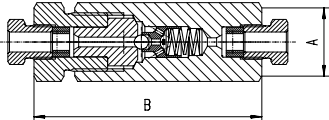
Maximator Ball Check Valves prevent reverse flow where bubble tight shut-off is not mandatory. These Check Valves are designed with a ball cradled floating poppet to assure positive inline seating. This poppet design allows full flow around the ball to minimize pressure drop. Check Valves are rated to 660°F (350°C). All Check Valves are supplied with glands and collars. These Check Valves are not to be used as a relief device. The opening pressure of the Ball Check Valves is approx. 20 psi (1.5 bar).

» **Materials:**

Body, cover, poppet, cover gland: 316L series stainless steel

Ball and Spring: 300 series stainless steel



Valve Pattern	Catalog Number	Connection Type	Pressure Rating psi (bar)	Orifice in. (mm)	Rated (Cv)	Dimensions in. (mm)	
						A (Hex.)	B
O-Ring Check Valves							
	43OC16M	16MF	43,000 (2,965)	0.438 (11.1)	4.3	2.00 (50.8)	6.433 (163.4)
Ball Check Valves							
	43BC16M	16MF	43,000 (2,965)	0.438 (11.1)	4.3	2.00 (50.8)	6.433 (163.4)

CAUTION: FREQUENT INSPECTIONS of O-Rings are necessary to ensure proper service of the check valve. O-Rings have shown satisfactory service life in testing, however different service conditions may lead to variations in cycle and shelf life. All dimensions are for reference only and subject to change.

Tubing and Coned and Threaded Nipples

» Pressures to 43,000 psi (2,965 bar)

High Pressure Tubing

Maximator offers a line of cold drawn thick wall tubing, with flow areas to compliment the 43,000 psi high pressure valves and fittings series. This tubing is made under strict manufacturing and quality control standards and inspections, with dimensional tolerances to match the requirements of the high pressure coned and threaded connections.

Tubing Tolerances

Normal Tubing Size in. (mm)	Tolerance O.D in. (mm)
1 (25.4)	0.995 / 0.990 (25.273 / 25.174)



Catalog Number	Tube Material	Fits Connection Type	Tube Size in. (mm)		Working Pressure psi (bar)				
			O.D.	I.D.	-325°F to 100°F (-198°C to 37°C)	200°F (93°C)	400°F (204°C)	600°F (315°C)	800°F (426°C)
43TU16M-316	316SS	16MF	1 (25.4)	0.438 (11.1)	43,000 (2,965)	38,700 (2,670)	35,830 (2,470)	32,480 (2,240)	31,050 (2,140)

All dimensions for reference only and are subject of change.

Coned and threaded nipples

Maximator offers a line of coned and threaded high pressure tube nipples in a variety of lengths for all standard tube sizes.

The coned and threaded high pressure tube nipples are available in 316 stainless steel. See chart below for ordering information.

Special length coned and threaded nipples are available upon request. Consult Maximator for availability and price.



Catalog Numbers are 316 Stainless Steel material Length in. (mm)				Fits Connection Type	Tube Size in. (mm)		Working Pressure at 100°F psi (bar)
6" (152.4)	8" (203.2)	10" (254)	12" (304.8)		O.D.	I.D.	
43N16M-6-316	43N16M-8-316	43N16M-10-316	43N16M-12-316	16MF	1 (25.4)	0.438 (11.1)	43,000 (2,965)

Standard nipples are not supplied with glands and collars, see Fittings on page 6 for these components. See adjacent Tubing information, for pressure/temperature rating chart.

All dimensions are for reference only and subject to change.

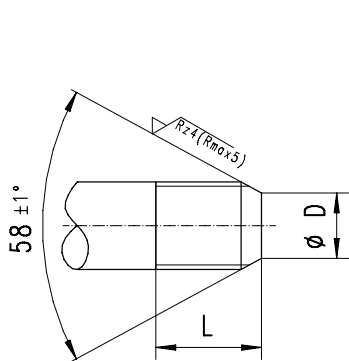
All technical and dimensional information subject to change. All general Terms and Conditions of sale, including limitations of our liability, apply to all products and services sold.

Assembly instructions and technical data

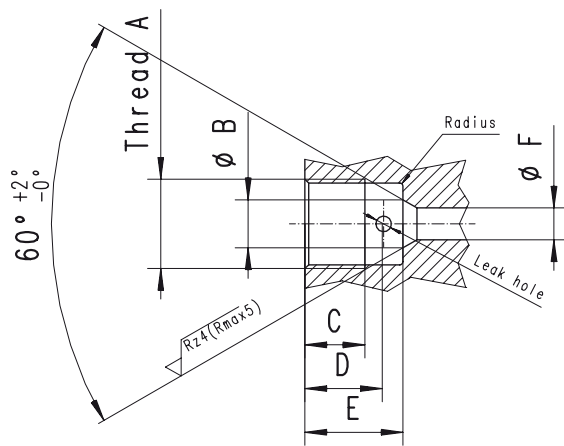
» Tube Connection Details

13.5 Tube Connection Details

Male Connection



Female Connection



Tubing Size O.D. x I.D in. (mm)	Tubing Pressure psi (bar) @ R.T	Dimension in. (mm)			Male Conn. Type	Female Conn. Type	Dimension in. (mm)						
		D	L	Left Hand Thread**			A**	B (±0.1)	C	D	E	F*	Tubing Engagement Allowance
Medium Pressure													
1/4 x .109 (6.35 x 2.77)	22,500 (1,550)	0.141 (3.6)	0.344 (8.7)	1/4-28	4M	4M	7/16-20	0.19 (4.7)	0.28 (7)	0.37 (9.5)	0.51 (13)	0.109 (2.7)	0.55 (14)
3/8 x .203 (9.53 x 5.17)	22,500 (1,550)	0.250 (6.4)	0.438 (11.1)	3/8-24	6M	6M	9/16-18	0.31 (7.7)	0.38 (9.6)	0.50 (12.7)	0.62 (15.7)	0.203 (5.1)	0.69 (17.5)
9/16 x .312 (14.29 x 7.93)	22,500 (1,550)	0.406 (10.3)	0.500 (12.7)	9/16-18	9M	9M	13/16-16	0.50 (12.7)	0.44 (11.2)	0.59 (15.1)	0.75 (19.1)	0.312 (7.8)	0.84 (21.3)
9/16 x .359 (14.29 x 9.13)	15,200 (1,050)	0.438 (11.1)	0.500 (12.7)	9/16-18								0.359 (9.1)	0.83 (21.1)
3/4 x .438 (19.05 x 11.12)	22,500 (1,550)	0.562 (14.3)	0.625 (15.9)	3/4-16	12M	12M	3/4-14NPS	0.62 (15.7)	0.50 (12.7)	0.72 (18.3)	0.94 (23.9)	0.438 (11.1)	1.00 (25.4)
3/4 x .516 (19.05 x 13.1)	15,200 (1,050)	0.578 (14.7)	0.625 (15.9)	3/4-16								0.516 (13.1)	0.99 (25.1)
1 x .562 (25.4 x 14.27)	22,500 (1,550)	0.719 (18.3)	0.781 (19.8)	1-14	16M	16M	1-3/8-12	0.88 (22.4)	0.81 (20.6)	1.06 (27)	1.31 (33.3)	0.562 (14.3)	1.44 (36.6)
1 x .688 (25.4 x 17.47)	15,200 (1,050)	0.812 (20.6)	0.781 (19.8)	1-14								0.688 (17.5)	1.38 (35.1)

* Port diameters may vary depending on specific valve or fitting component type. See actual component catalog page for orifice sizes and pressure ratings.
** Unified National Fine thread, Class 2.

Tubing Size O.D. x I.D in. (mm)	Tubing Pressure psi (bar) @ R.T	Dimension in. (mm)			Male Conn. Type	Female Conn. Type	A**	B (±0.1)	Dimension in. (mm)			F*	Tubing Engagement Allowance
		D	L	Left Hand Thread**					C	D	E		
High Pressure													
1/4 x .083 (6.35 x 2.11)	65,000 (4,500)	0.125 (3.2)	0.562 (14.3)	1/4-28	4H	4H	9/16-18	0.17 (4.2)	0.39 (10)	0.39 (10)	0.45 (11.5)	0.094 (2.3)	0.50 (12.7)
3/8 x .125 (9.53 x 3.17)	65,000 (4,500)	0.219 (5.6)	0.750 (19.1)	3/8-24	6H	6H	3/4-16	0.26 (6.5)	0.53 (13.5)	0.53 (13.5)	0.63 (16)	0.125 (3.2)	0.69 (17.5)
9/16 x .188 (14.29 x 4.77)	65,000 (4,500)	0.281 (7.1)	0.938 (23.8)	9/16-18	9H	9H	1-1/8-12	0.38 (9.7)	0.62 (15.7)	0.62 (15.7)	0.75 (19.1)	0.188 (4.8)	0.84 (21.3))
1 x .438 (25.4 x 11.13)	43,000 (2,965)	0.563 (14.3)	1.083 (27.5)	1-14	16M	16M	1-3/8-12	0.88 (22.4)	0.81 (20.6)	1.06 (27)	1.31 (33.3)	0.438 (11.1)	1.59 (40.3)
Ultra High Pressure													
1/4 x .063 (6.35 x 1.59)	101,000 (7,000)	0.125 (3.2)	0.562 (14.3)	1/4-28	4U	4U	9/16-18	0.17 (4.2)	0.39 (10)	0.39 (10)	0.45 (11.5)	0.094 (2.3)	0.50 (12.7)
3/8 x .125 (9.53 x 3.17)	101,000 (7,000)	0.219 (5.6)	0.750 (19.1)	3/8-24	6U	6U	3/4-16	0.26 (6.5)	0.53 (13.5)	0.53 (13.5)	0.63 (16)	0.118 (3)	0.69 (17.5)
9/16 x .188 (14.29 x 4.77)	101,000 (7,000)	0.281 (7.1)	0.938 (23.8)	9/16-18	9U	9U	1-1/8-12	0.38 (9.7)	0.62 (15.7)	0.62 (15.7)	0.75 (19.1)	0.188 (4.8)	0.84 (21.3)
5/16 x 0.62 (7.95 x 1.58)	152,000 (10,500)	0.125 (3.2)	0.687 (17.4)	5/16-24	5U	5U	5/8-18	0.25 (6.2)	0.63 (16)	0.93 (23.5)	1.06 (27)	0.09 (2.3)	1.25 (31.75)

* Port diameters may vary depending on specific valve or fitting component type. See actual component catalog page for orifice sizes and pressure ratings.

** Unified National Fine thread, Class 2.