MAXIMATOR®

HIGH PRESSURE TECHNOLOGY • HYDRAULICS • PNEUMATICS • TESTING EQUIPMENT

Valves • Fittings • Tubing

Adapters and Couplings

Medium Pressure to 21,000 psi (1,500 bar)

Accessories

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

Tools and Installation

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

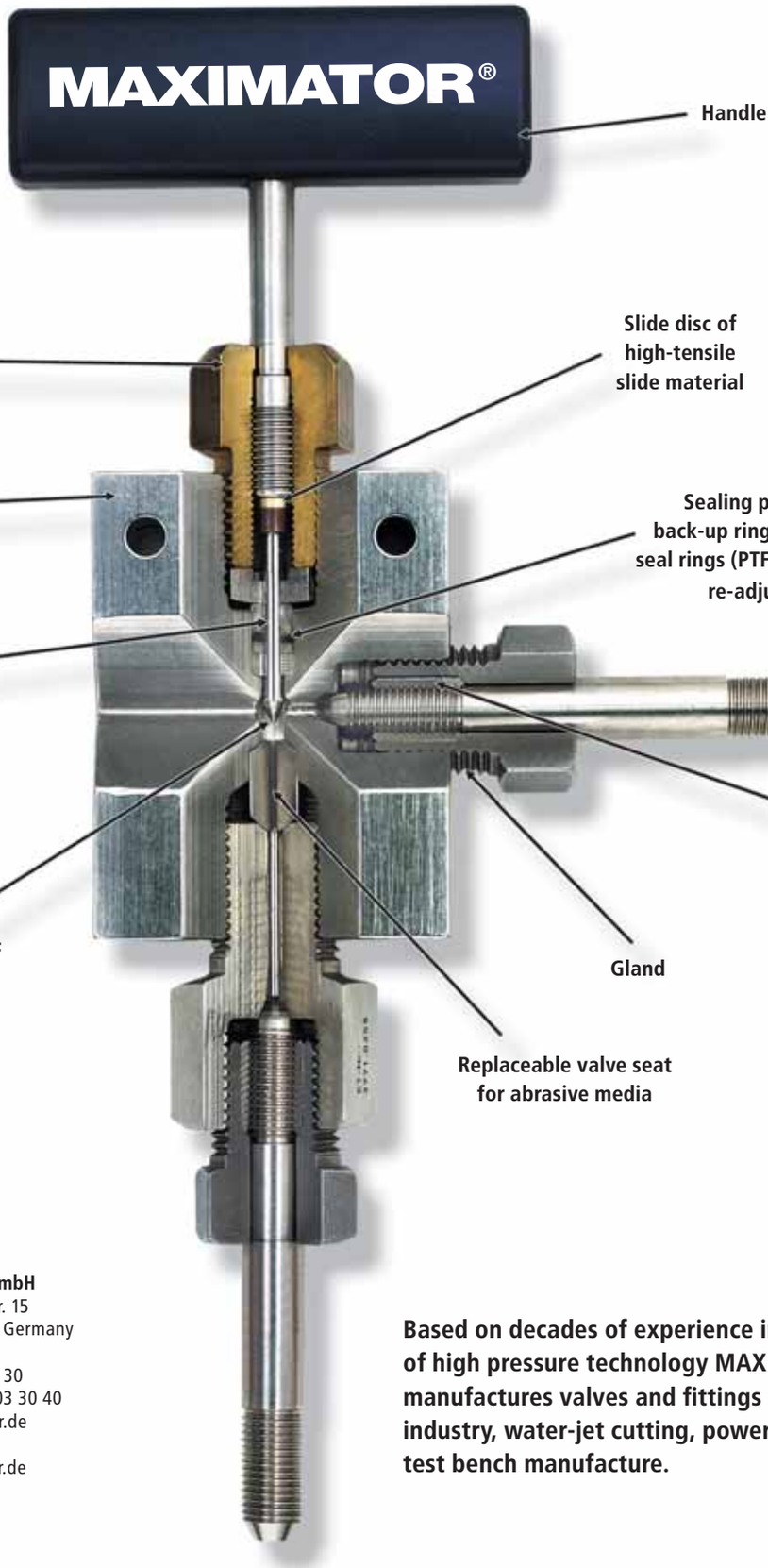
Technical Information

Valve Actuators

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

MAXIMATOR®

Valve cross sections



Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany

Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
eMail: info@maximator.de

Internet: www.maximator.de

Based on decades of experience in the field of high pressure technology MAXIMATOR manufactures valves and fittings for the chemical industry, water-jet cutting, power systems and test bench manufacture.

3999.1821 – DSB 09/2007

MAXIMATOR®

State-of-the-art technical know-how based on German engineering, successful system developer and experienced specialist - MAXIMATOR GmbH is a leading supplier of high-pressure and testing technology, hydraulic and pneumatic equipments. Qualified and motivated company members are developing, designing, manufacturing and marketing products internationally which are worldwide employed in process technology plants.

At its headquarter in Zorge and its factory in Nordhausen MAXIMATOR GmbH develops, designs and manufactures high-pressure equipment.

Our work is based on a verified and certified quality management system (DIN EN ISO 9001:2000) - the fundamental asset for implementing technological knowledge successfully and experience in the field of complex systems.

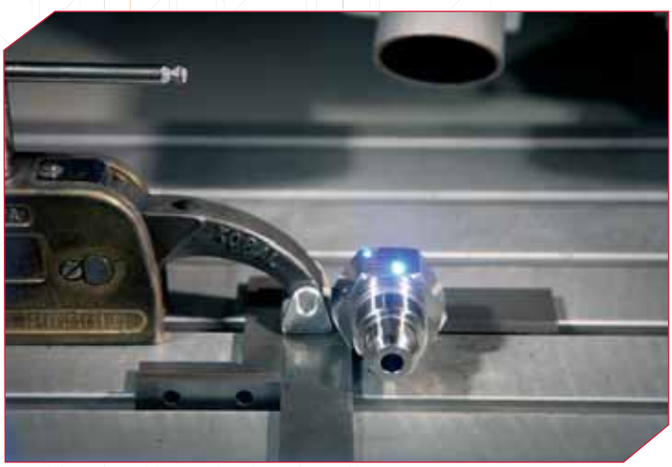
Further sales offices of the company across Germany and partner firms around the world provide fast-tracked individual system solutions, inter alia for valves, fittings and tubings, air-driven fluid pumps, air amplifiers and gas compressors, hydraulic units, test rigs and pressure generating units as well as gas-assisted and water-assisted systems.

Our efficient in-house service department carries out erection, installation and maintenance of components and systems manufactured by MAXIMATOR.

In our purposefully-built development and service centre in Nordhausen MAXIMATOR offers custom-tailored services such as pressure, bursting and impulse pressure tests plus component autofrettage.

A modern manufacturing operation has been established at our Nordhausen factory. The plant complies, especially in the high-pressure area, with all requirements to ultra-clean production and thus ensures highest fabrication and quality standards.

The MAXIMATOR team is highly qualified and experienced in high-pressure technologies. Following final inspection the components are shrink wrapped which guarantee dust-free delivery to their destinations.



Continuous marking ensures proper traceability of all MAXIMATOR Valves and Fittings. Following product relevant datas are marked by a sophisticated laser device.

Type / Order Code / Maximum Working Pressure /
ø High Pressure Tube / Material / Batch Number

MAXIMATOR®

Valves, Fittings & Tubing

MAXIMATOR has been designing and manufactaring high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliabilty, backed by one of the best service organizations in the industry.

▶ Medium Pressure

A complete line of medium pressure valves, fittings, tubing, check valves,line filters, anti-vibration fittings and safety head assemblies are availeble through our catalog. All medium pressure valves and fittings use a coned and threaded, medium pressure style connection.

▶ High Pressure

Whatever your high pressure needs, MAXIMATOR is the source. We supply a complete line of high pressure valves, fittings, tubing, check valves, line filters, anti-vibration fittings and safety head assemblies. All high pressure valves and fittings use the hugh pressure style connection.

▶ Ultra High Pressure

In addition to our medium and high pressure lines, we are proud to offer a complete line of ultra high pressure valves, fittings and tubing. They come standart wit the 5/16" ultra high pressure coned and threaded connection.

▶ Valve Actuators

Piston type, air operated, valve actuators are also availeble from MAXIMATOR. They are mounted on a standart manual valve to provide remote control cabiality. There are different air to open and air to close actuators availeble, and selection is based on the valve size, system pressure, and air pressure availeble.

▶ Ball Valves

MAXIMATOR now offers ball valves of exceptional quality and performance with a variety of valve styles and process connections. Please consult the Valves, Fittings & Tubing catalog for availability.

▶ Couplings and Adapters

Joining two different sizes and/or types of connections is easy with the couplings and adapters offered by MAXIMATOR. Now a variety of size combinationsare possible!

▶ Tools & Installation

Precise tools are necessary for manually coning and threading tubing. MAXIMATOR offers these tools, allowing for the coning and threading of medium and high pressure tubing up to 9/16" O.D.

MAXIMATOR®

Valves, Fittings and Tubing
Table of Contents

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MAXIMATOR®

Valves, Fittings and Tubing
Catalog Part Number Generator

Pressure	Component Type	Connection "A" Size	Connection "A" Type	Stem Type (only required on needle valves)	Body Pattern (only required on needle valves)	Connection "B" Size (If different from Connection "A")	Connection "B" Type (If different from Connection "A")	Options
15 = 15,200 psi **(1,050 bar)**	**A** = Adapter (male /female)	**2** = 1/8"	**H** = High Pressure	**07** = Vee Stem	**1** = Two-way straight			**AVA** = Anti-Vibration Collet Gland Assembly
21 = 21,000 psi **(1,500 bar)**	**AVA** = Anti-Vibration Collet Gland Assembly	**4** = 1/4"	**M** = Medium Pressure	**08** = Regulating Stem	**2** = Two-way angle			**B** = Cryogenic Packing (-100°F)
36 = 36,000 psi **(2,500 bar)**	**B24** = 2-Way Ball Valve	**5** = 5/16"	**P** = NPT Pipe	**87** = Vee Stem w/ replaceable seat	**3** = Three-way, two on pressure			**DA** = Ball Valve Actuator (Pneumatic Double Acting)
65 = 65,000 psi **(4,500 bar)**	**BC** = Ball Check Valve	**6** = 3/8"	**U** = Ultra High Pressure	**88** = Replaceable Stem w/ replaceable seat	**4** = Three-way, one on pressure			**EH** = Electric Ball Valve Actuator (80-240 Volts AC or DC)
101 = 101,000 psi **(7,000 bar)**	**B3D3** = 3-Way Diverter Ball Valve (90°)	**8** = 1/2"	**B** = BSP Pipe		**5** = Three-way, two stem manifold			**EL** = Electric Ball Valve Actuator (12-48 Volts AC or DC)
152 = 152,000 psi **(10,500 bar)**	**BF** = Bulkhead Coupling	**9** = 9/16"	**GB** = Gauge BSP					**GY** = Graphite Braided Yarn Packing (800°F)
	B3S3 = 3-Way Switching Ball Valve (180°)	**12** = 3/4"						**HNC** = Heavy Duty Air Actuators, Normally Closed
	C = Collar	**16** = 1"						**HNO** = Heavy Duty Air Actuators, Normally Open
	CF = Cup Type Filter							**HT** = High Temperature Option (1200°F)
	CT = Coning Tool							**LT** = Low Temperature Option (-423°F)
	DF = Dual Disc Line Filter							**LNC** = Light Duty Air Actuators, Normally Closed
	DT = Deburring Tool							**LNO** = Light Duty Air Actuators, Normally Open
	F = Coupling (female / female)							**MNC** = Medium Duty Air Actuators, Normally Closed
	G = Gland							**MNO** = Medium Duty Air Actuators, Normally Open
	L = Elbow							**SA** = Ball Valve Actuator (Pneumatic Single Acting)
	M = Adapter (male / male)							**TG** = Teflon Glass Packing (600°F)
	N = Nipple							**WO** = Without Collars & Glands
	OC = O-Ring Check Valve							**WOC** = Without Coating
	P = Plug							**2P** = Two Piece Component
	PG = Pressure Gauge							
	RD = Rupture Disc							
	RT = Reseating Tool							
	SH = Safety Head Assembly							
	T = Tee							
	TC = Tubing Cap							
	TU = Tubing							
	TT = Threading Tool							
	UF = Union Coupling							
	V = Valve							
	X = Cross							

MAXIMATOR®




Medium Pressure Valves, Fittings and Tubing

Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR has been designing and manufacturing high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliability, backed by one of the best service organizations in the industry.

Medium Pressure Valves feature:

- Rising stem design.
- 316 L (1.4404) wetted parts for excellent corrosion resistance.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem and seat life, greater durability for repeated open and close cycles.
- PTFE and carbon packing with metal back-up rings offers reliable stem to body sealing.
- Non-rotating stem prevents stem to seat galling.
- Stem sleeve and packing gland materials have been selected to achieve optimum thread cycle life and reduced handle torque. All stem sleeve threads are rolled, assuring smooth operation.
- Safety weep holes for all pressure connections and packing area.
- Six different valve body patterns, with choice of vee or regulating type stem tip.

MAXIMATOR offers a complete line of medium pressure fittings, tubing, check valves, line filters, anti-vibration fittings and safety head assemblies. All medium pressure valves and fittings use the medium pressure style connection. This coned and threaded connection features orifice sizes to match the high flow characteristics of the medium pressure valve, fitting and tubing line.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

Medium Pressure Valves

Pressures to 21,000 psi **(1,500 bar)**

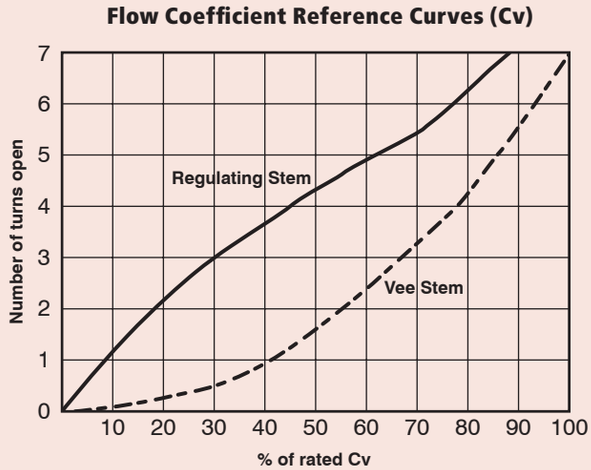
MAXIMATOR medium pressure valves with metal to metal seats have a high level of safety and reliability under adverse operating conditions. These valves may be used both with gases and liquids.

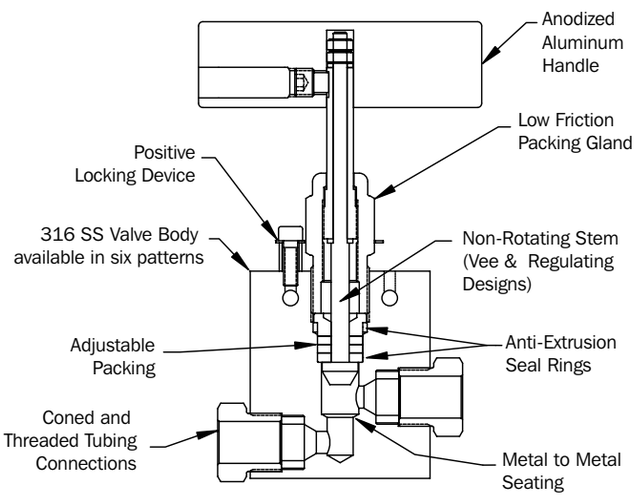
Traceability is ensured through extensively documented data (batch number, maximum pressure, material number, type designation). All medium pressure valves include glands and collars.

O.D. Size in. **(mm)**	Connection Type	Orifice Size in. **(mm)**	Rated Cv*	Pressure/Temp. Rating psi @ R.T. **(bar)****
1/4 **(6.35)**	4MF	0.125 **(3.2)**	0.31	21,000 **(1,500)**
3/8 **(9.53)**	6MF	0.219 **(5.6)**	0.75	21,000 **(1,500)**
9/16 **(14.29)**	9MF	0.312 **(7.9)**	1.30	21,000 **(1,500)**
3/4 **(19.05)**	12MF	0.438 **(11.1)**	2.50	21,000 **(1,500)**
1 **(25.4)**	16MF	0.562 **(14.3)**	4.40	21,000 **(1,500)**

* *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.*





Valve Shown: 21V9MO71

Ordering Information

Typical catalog number: **21V4MO71**

21V	4M	07	1	OPTIONS

Valve Series	O.D. Tube Size	Stem Type	Body Pattern	Extreme temperature option, see below.
21V	4M – 1/4" 6M – 3/8" 9M – 9/16" 12M – 3/4 16M – 1	07 – VEE stem 08 – REGULATING stem (tapered tip for regulating and shutoff) 87 – VEE stem with replaceable seat 88 – REGULATING stem with replaceable seat	1 – two-way straight 2 – two-way angle 3 – three-way, two on pressure 4 – three-way, one on pressure 5 – three-way, two-stem manifold	

Special Designs for Extreme Temperatures

Standard valves are supplied with Teflon/Carbon packing and may be operated to 450°F **(230°C)**. High temperature packing and/or extended stuffing box are available for service from -423°F to 1200°F **(-217°C to 650°C)** by adding the following suffixes to catalog order number.

- **- TG** standard valve with teflon glass packing to 600°F **(315°C)**.
- **- GY** standard valve with graphite braided yarn packing to 800°F **(425°C)**.
- **- HT** extended stuffing box valve with graphite braided yarn packing to 1200°F **(650°C)**.
- **- B** standard valve with cryogenic trim materials and Teflon packing to -100°F **(-73°C)**.
- **- LT** extended stuffing box valve with teflon packing and cryogenic trim materials to -423°F **(-217°C)**.

Repair Kits

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

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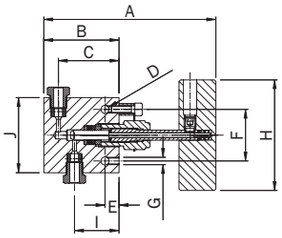
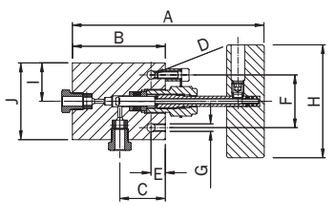
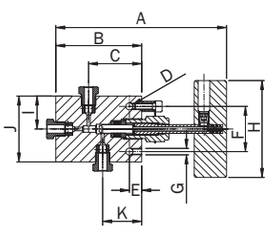
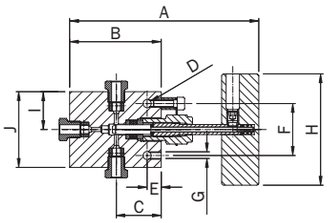
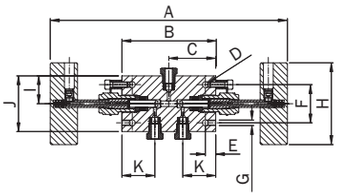
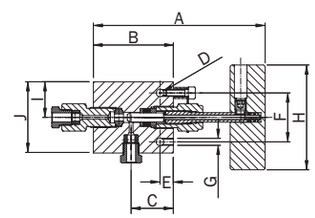
Valve Pattern	Catalog Number	Stem Type	O.D. Tube in.	Orifice in. (mm)	Dimensions in. (mm) A	B	C	D	E	F	H	I	J	K	Valve Panel Hole	Block Thickness
2-Way Straight																
	21V4M071	Vee	1/4	0.125 (3.2)	4.61 (117)	2.01 (51)	1.62 (41.1)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.19 (30.2)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V4M081	Reg														
	21V6M071	Vee	3/8	0.219 (5.6)	4.61 (117)	2.01 (51)	1.62 (41.1)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.19 (30.2)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V6M081	Reg														
	21V9M071	Vee	9/16	0.312 (7.9)	6.35 (161.3)	2.88 (73.2)	2.38 (60.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.75 (44.5)	2.50 (63.5)		1.00 (25.4)	1.02 (25.9)
	21V9M081	Reg														
	21V12M071	Vee	3/4	0.438 (11.1)	7.05 (179)	3.74 (95)	3.00 (76)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	2.25 (57.2)	3.00 (76)		1.25 (31.8)	1.38 (35)
	21V12M081	Reg														
	21V16M071	Vee	1	0.562 (14.3)	8.98 (228)	4.65 (118)	3.75 (95.3)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.81 (71.4)	4.13 (105)		1.62 (41.1)	1.77 (45)
	21V16M081	Reg														
2-Way Angle																
	21V4M072	Vee	1/4	0.125 (3.2)	5.00 (127)	2.43 (61.7)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V4M082	Reg														
	21V6M072	Vee	3/8	0.219 (5.6)	5.00 (127)	2.43 (61.7)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V6M082	Reg														
	21V9M072	Vee	9/16	0.312 (7.9)	6.85 (174)	3.38 (85.9)	1.75 (44.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.25 (31.8)	2.50 (63.5)		1.00 (25.4)	1.02 (25.9)
	21V9M082	Reg														
	21V12M072	Vee	3/4	0.438 (11.1)	7.56 (192)	4.25 (108)	2.25 (57.2)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	1.50 (38)	3.00 (76)		1.25 (31.8)	1.38 (35)
	21V12M082	Reg														
	21V16M072	Vee	1	0.562 (14.3)	9.45 (240)	5.12 (130)	2.81 (71.4)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.07 (52.5)	4.13 (105)		1.62 (41.1)	1.77 (45)
	21V16M082	Reg														
3-Way / 2 on Pressure																
	21V4M073	Vee	1/4	0.125 (3.2)	5.20 (132)	2.62 (66.5)	1.62 (41.1)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.19 (30.2)	0.75 (19.1)	0.79 (20.1)
	21V4M083	Reg														
	21V6M073	Vee	3/8	0.219 (5.6)	5.20 (132)	2.62 (66.5)	1.62 (41.1)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.19 (30.2)	0.75 (19.1)	0.79 (20.1)
	21V6M083	Reg														
	21V9M073	Vee	9/16	0.312 (7.9)	7.09 (180.1)	3.62 (92)	2.38 (60.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.25 (31.8)	2.50 (63.5)	1.75 (44.5)	1.00 (25.4)	1.02 (25.9)
	21V9M083	Reg														
	21V12M073	Vee	3/4	0.438 (11.1)	7.97 (201)	4.63 (117.5)	3.00 (76)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	1.50 (38)	3.00 (76)	2.25 (57.2)	1.25 (31.8)	1.38 (35)
	21V12M083	Reg														
	21V16M073	Vee	1	0.562 (14.3)	10.20 (259)	5.87 (149)	3.75 (95.3)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.07 (52.5)	4.13 (105)	2.81 (71.4)	1.62 (41.1)	1.77 (45)
	21V16M083	Reg														

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

MAXIMATOR®

Medium Pressure Valves

Pressures to 21,000 psi **(1,500 bar)**

Valve Pattern	Catalog Number	Stem Type	O.D. Tube in.	Orifice in. (mm)	Dimensions in. (mm) A	B	C	D	E	F	H	I	J	K	Valve Panel Hole	Block Thickness
3-Way / 1 on Pressure																
	21V4M074	Vee	1/4	0.125 (3.2)	5.00 (127)	2.43 (61.7)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V4M084	Reg														
	21V6M074	Vee	3/8	0.219 (5.6)	5.00 (127)	2.43 (61.7)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V6M084	Reg														
	21V9M074	Vee	9/16	0.312 (7.9)	6.85 (174)	3.38 (85.9)	1.75 (44.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.25 (31.8)	2.50 (63.5)		1.00 (25.4)	1.02 (25.9)
	21V9M084	Reg														
	21V12M074	Vee	3/4	0.438 (11.1)	7.56 (192)	4.25 (108)	2.25 (57.2)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	1.50 (38)	3.00 (76)		1.25 (31.8)	1.38 (35)
	21V12M084	Reg														
	21V16M074	Vee	1	0.562 (14.3)	9.53 (242)	5.12 (130)	2.81 (71.4)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.07 (52.5)	4.13 (105)		1.62 (41.1)	1.77 (45)
	21V16M084	Reg														
3-Way / 2-Stem Manifold																
	21V4M075	Vee	1/4	0.125 (3.2)	8.54 (217)	3.39 (86)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.19 (30.2)	0.75 (19.1)	0.79 (20.1)
	21V4M085	Reg														
	21V6M075	Vee	3/8	0.219 (5.6)	8.54 (217)	3.39 (86)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.19 (30.2)	0.75 (19.1)	0.79 (20.1)
	21V6M085	Reg														
	21V9M075	Vee	9/16	0.312 (7.9)	12.06 (306.2)	5.12 (130)	2.56 (65)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.25 (31.8)	2.50 (63.5)	1.75 (44.5)	1.00 (25.4)	1.02 (25.9)
	21V9M085	Reg														
	21V12M075	Vee	3/4	0.438 (11.1)	13.07 (332)	6.50 (165)	3.25 (82.5)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	1.50 (38)	3.00 (76)	2.25 (57.2)	1.25 (31.8)	1.38 (35)
	21V12M085	Reg														
	21V16M075	Vee	1	0.562 (14.3)	16.18 (411)	7.52 (191)	3.76 (95.5)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.07 (52.5)	4.13 (105)	2.81 (71.4)	1.62 (41.1)	1.77 (45)
	21V16M085	Reg														
2-Way Angle / Replaceable Seat																
	21V4M872	Vee	1/4	0.125 (3.2)	4.84 (123)	2.25 (57.2)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V4M882	Reg														
	21V6M872	Vee	3/8	0.219 (5.6)	4.84 (123)	2.25 (57.2)	1.19 (30.2)	0.22 (5.6)	0.37 (9.5)	1.24 (31.5)	2.95 (75)	1.00 (25.4)	2.01 (51)		0.75 (19.1)	0.79 (20.1)
	21V6M882	Reg														
	21V9M872	Vee	9/16	0.312 (7.9)	6.68 (169.6)	3.21 (81.5)	1.75 (44.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	3.94 (100)	1.25 (31.8)	2.50 (63.5)		1.00 (25.4)	1.02 (25.9)
	21V9M882	Reg														
	21V12M872	Vee	3/4	0.438 (11.1)	7.56 (192)	4.25 (108)	2.25 (57.2)	0.43 (11)	0.63 (16)	1.76 (44.7)	10.31 (262)	1.50 (38)	3.00 (76)		1.25 (31.8)	1.38 (35)
	21V12M882	Reg														
	21V16M872	Vee	1	0.562 (14.3)	9.57 (243)	5.25 (133.3)	2.81 (71.4)	0.53 (13.5)	1.13 (28.7)	2.50 (63.5)	10.31 (262)	2.07 (52.5)	4.13 (105)		1.62 (41.1)	1.77 (45)
	21V16M882	Reg														

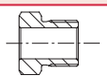
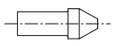
G - Panel mounting screw thread size 10-24 UNC.

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

Medium Pressure Fittings

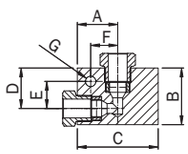
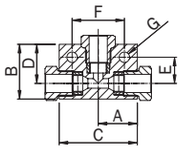
Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR medium pressure fittings are designed with the large orifice for use with the 21V series medium pressure valves and medium pressure tubing. All medium pressure fittings have coned and threaded type connections. Mounting holes are standard on all elbows, tees, and crosses.

Tubing Size in. **(mm)**	Gland	Collar	Plug	Tubing Cap
				
1/4 **(6.35)**	**21G4M**	**21C4M**	**21P4M**	**21TC4M**
3/8 **(9.53)**	**21G6M**	**21C6M**	**21P6M**	**21TC6M**
9/16 **(14.29)**	**21G9M**	**21C9M**	**21P9M**	**21TC9M**
3/4 **(19.05)**	**21G12M**	**21C12M**	**21P12M**	**21TC12M**
1 **(25.4)**	**21G16M**	**21C16M**	**21P16M**	**21TC16M**

Connection Components

All medium 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)** A	B	C	D	E	F	G	Block Thickness
Elbow												
	**21L4M**	4MF	1/4	0.125 **(3.2)**	0.75 **(19.1)**	1.10 **(28)**	1.54 **(39.1)**	0.75 **(19.1)**	0.49 **(12.5)**	0.49 **(12.5)**	0.22 **(5.6)**	0.63 **(16)**
	21L6M	6MF	3/8	0.219 **(5.6)**	1.00 **(25.4)**	1.38 **(35)**	2.00 **(50.8)**	1.00 **(25.4)**	0.63 **(16)**	0.63 **(16)**	0.26 **(6.6)**	0.79 **(20.1)**
	21L9M	9MF	9/16	0.359 **(9.1)**	1.25 **(31.8)**	1.75 **(44.5)**	2.50 **(63.5)**	1.25 **(31.8)**	0.84 **(21.3)**	0.84 **(21.3)**	0.33 **(8.4)**	1.02 **(25.9)**
	21L12M	12MF	3/4	0.516 **(13.1)**	1.50 **(38.1)**	2.25 **(57.2)**	3.00 **(76)**	1.50 **(38.1)**	1.00 **(25.4)**	1.00 **(25.4)**	0.35 **(8.9)**	1.38 **(35)**
	21L16M	16MF	1	0.688 **(17.4)**	2.06 **(52.3)**	3.00 **(76)**	4.13 **(105)**	2.06 **(52.3)**	1.38 **(35)**	1.38 **(35)**	0.53 **(13.5)**	1.77 **(45)**
Tee												
	**21T4M**	4MF	1/4	0.125 **(3.2)**	0.75 **(19.1)**	1.10 **(28)**	1.54 **(39.1)**	0.75 **(19.1)**	0.49 **(12.5)**	0.49 **(12.5)**	0.22 **(5.6)**	0.63 **(16)**
	21T6M	6MF	3/8	0.219 **(5.6)**	1.00 **(25.4)**	1.38 **(35)**	2.00 **(50.8)**	1.00 **(25.4)**	0.63 **(16)**	0.63 **(16)**	0.26 **(6.6)**	0.79 **(20.1)**
	21T9M	9MF	9/16	0.359 **(9.1)**	1.25 **(31.8)**	1.75 **(44.5)**	2.50 **(63.5)**	1.25 **(31.8)**	0.84 **(21.3)**	0.84 **(21.3)**	0.33 **(8.4)**	1.02 **(25.9)**
	21T12M	12MF	3/4	0.516 **(13.1)**	1.50 **(38.1)**	2.25 **(57.2)**	3.00 **(76)**	1.50 **(38.1)**	1.00 **(25.4)**	1.00 **(25.4)**	0.35 **(8.9)**	1.38 **(35)**
	21T16M	16MF	1	0.688 **(17.4)**	2.06 **(52.3)**	3.00 **(76)**	4.13 **(105)**	2.06 **(52.3)**	1.38 **(35)**	1.38 **(35)**	0.53 **(13.5)**	1.77 **(45)**

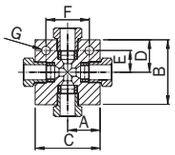
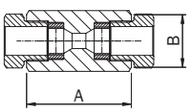
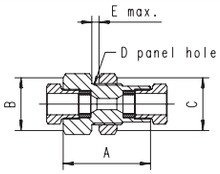
All dimensions are for reference only and are subject to change.

See page 2 in the Technical Section for pressure/temperature rating chart.

MAXIMATOR®

Medium Pressure Fittings

Pressures to 21,000 psi **(1,500 bar)**

Fitting Pattern	Catalog Number	Connection Type	O.D. Tube Size in.	Orifice in. **(mm)**	Dimensions in. **(mm)** A	B	C	D	E	F	G	Block Thick-ness
Cross												
	**21X4M**	4MF	1/4	0.125 **(3.2)**	0.77 **(19.5)**	1.54 **(39.1)**	1.54 **(39.1)**	0.77 **(19.5)**	0.49 **(12.5)**	0.98 **(25)**	0.22 **(5.6)**	0.63 **(16)**
	21X6M	6MF	3/8	0.219 **(5.6)**	1.00 **(25.4)**	2.00 **(50.8)**	2.00 **(50.8)**	1.00 **(25.4)**	0.63 **(16)**	1.26 **(32)**	0.26 **(6.6)**	0.79 **(20.1)**
	21X9M	9MF	9/16	0.359 **(9.1)**	1.25 **(31.8)**	2.50 **(63.5)**	2.50 **(63.5)**	1.25 **(31.8)**	0.84 **(21.3)**	1.67 **(42.6)**	0.33 **(8.4)**	1.02 **(25.9)**
	21X12M	12MF	3/4	0.516 **(13.1)**	1.50 **(38.1)**	3.00 **(76)**	3.00 **(76)**	1.50 **(38.1)**	1.00 **(25.4)**	2.00 **(50.8)**	0.35 **(8.9)**	1.38 **(35)**
	21X16M	16MF	1	0.688 **(17.4)**	2.06 **(52.3)**	4.13 **(105)**	4.13 **(105)**	2.06 **(52.3)**	1.38 **(35)**	2.76 **(70)**	0.53 **(13.5)**	1.77 **(45)**
Straight Coupling / Union Coupling												
	**21F4M**	4MF	1/4	0.125 **(3.2)**	1.62 **(41.1)**	0.69 **(17.5)**	Straight Coupling					
	21UF4M						Union Coupling					
	21F6M	6MF	3/8	0.219 **(5.6)**	1.75 **(44.5)**	0.88 **(22.3)**	Straight Coupling					
	21UF6M						Union Coupling					
	21F9M	9MF	9/16	0.359 **(9.1)**	2.12 **(53.8)**	1.06 **(27)**	Straight Coupling					
	21UF9M						Union Coupling					
	21F12M	12MF	3/4	0.516 **(13.1)**	2.50 **(63.5)**	1.44 **(36.5)**	Straight Coupling					
	21UF12M						Union Coupling					
	21F16M	16MF	1	0.688 **(17.4)**	3.50 **(88.9)**	2.00 **(50.8)**	Straight Coupling					
	21UF16M						Union Coupling					
Bulkhead Coupling												
	**21BF4M**	4MF	1/4	0.125 **(3.2)**	1.88 **(47.8)**	1.06 **(27)**	1.06 **(27)**	0.81 **(20.6)**	0.67 **(17)**			
	21BF6M	6MF	3/8	0.219 **(5.6)**	2.01 **(51)**	1.06 **(27)**	1.06 **(27)**	0.94 **(23.9)**	0.39 **(9.9)**			
	21BF9M	9MF	9/16	0.359 **(9.1)**	2.38 **(60.5)**	1.44 **(36.5)**	1.44 **(36.5)**	1.12 **(28.5)**	0.39 **(9.9)**			
	21BF12M	12MF	3/4	0.516 **(13.1)**	2.81 **(71.4)**	1.62 **(41.3)**	1.62 **(41.3)**	1.37 **(34.8)**	0.47 **(11.9)**			
	21BF16M	16MF	1	0.688 **(17.4)**	3.54 **(89.9)**	2.00 **(50.8)**	2.00 **(50.8)**	1.68 **(42.6)**	0.51 **(13)**			

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

See page 2 in the Technical Section for pressure/temperature rating chart.

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.

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Anti-Vibration Collet Gland Assembly

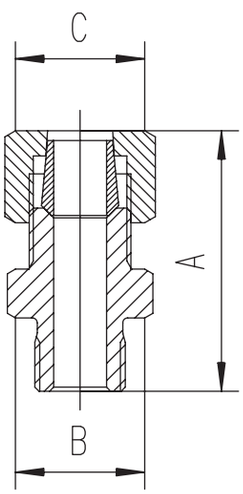
Pressures to 21,000 psi **(1,500 bar)**

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 medium pressure coned and threaded tube connections.

In a normal coned and threaded tube connection, any external mechanical loading on the tubing lines, valves or fittings would be concentrated on the first thread of the tube. This can cause failure of the tube at this thinner cross-section. The anti-vibration collet gland assembly grips the tube behind the connection, supporting the tube at the full cross-section and straight area, moving the loading away from the threaded area.

The back part of the assembly has a gland nut that, when tightened properly, compresses a split collet on the tube, providing the beneficial gripping action.

All anti-vibration collet gland assemblies come with a Molybdenum Disulfide Coating to guard against galling of the stainless components.



Gland Pattern	Catalog Number	Part	O.D. Tubing Size in.	Dimensions in. **(mm)**		
				A	B (Hex.)	C (Hex.)
	21AVA4M	Complete Assembly	1/4	1.27 **(32.2)**	0.50 **(12,7)**	0.62 **(15.7)**
	21AVB4M	Collet Body				
	21AVC4M	Slotted Collet				
	21AVG4M	Gland Nut				
	21AVA6M	Complete Assembly	3/8	1.54 **(39.1)**	0.62 **(15.7)**	0.81 **(20.6)**
	21AVB6M	Collet Body				
	21AVC6M	Slotted Collet				
	21AVG6M	Gland Nut				
	21AVA9M	Complete Assembly	9/16	1.82 **(46.2)**	0.94 **(23.9)**	0.94 **(23.9)**
	21AVB9M	Collet Body				
	21AVC9M	Slotted Collet				
	21AVG9M	Gland Nut				
	21AVA12M	Complete Assembly	3/4	2.01 **(51)**	1.19 **(30.2)**	1.25 **(31.8)**
	21AVB12M	Collet Body				
	21AVC12M	Slotted Collet				
	21AVG12M	Gland Nut				
	21AVA16M	Complete Assembly	1	2.44 **(62)**	1.38 **(35)**	1.50 **(38.1)**
	21AVB16M	Collet Body				
	21AVC16M	Slotted Collet				
	21AVG16M	Gland Nut				

All dimensions are for reference only and subject to change.

MAXIMATOR®

Medium Pressure Tubing

Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR offers a line of cold drawn thick wall tubing, with flow areas to compliment the large orifice medium pressure valves and fittings. This tubing is made under strict manufacturing and quality control standards and inspections, with dimensional tolerances to match the requirements of the medium pressure coned and threaded connections.

The standard materials are 304 and 316 stainless steels. Other materials may be provided on special request, depending on the specific material, diameters and lengths.

Tubing Tolerances

Normal Tubing Size in. **(mm)**	Tolerance O.D. in. **(mm)**
1/4 **(6.35)**	0.248 / 0.243 **(6.299 / 6.172)**
3/8 **(9.53)**	0.370 / 0.365 **(9.398 / 9.271)**
9/16 **(14.29)**	0.557 / 0.552 **(14.147 / 14.021)**
3/4 **(19.05)**	0.745 / 0.740 **(18.923 / 18.796)**
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 to 100°F **(-198°C to 37°C)**	200°F **(93°C)**	400°F **(204°C)**	600°F **(315°C)**	800°F **(426°C)**
21TU4M-316	316SS	4MF	1/4	0.109 **(2.77)**	21,000 **(1,500)**	18,900 **(1,300)**	17,430 **(1,200)**	15,960 **(1,100)**	15,120 **(1,040)**
21TU4M-304	304SS								
21TU6M-316	316SS	6MF	3/8	0.203 **(5.17)**	21,000 **(1,500)**	18,900 **(1,300)**	17,430 **(1,200)**	15,960 **(1,100)**	15,120 **(1,040)**
21TU6M-304	304SS								
21TU9M-316	316SS	9MF	9/16	0.312 **(7.93)**	21,000 **(1,500)**	18,900 **(1,300)**	17,430 **(1,200)**	15,960 **(1,100)**	15,120 **(1,040)**
21TU9M-304	304SS								
15TU9M-316	316SS	9MF	9/16	0.359 **(9.12)**	15,200 **(1,050)**	13,680 **(940)**	12,616 **(870)**	11,552 **(790)**	10,944 **(750)**
15TU9M-304	304SS								
21TU12M-316	316SS	12MF	3/4	0.438 **(11.13)**	21,000 **(1,500)**	18,900 **(1,300)**	17,430 **(1,200)**	15,960 **(1,100)**	15,120 **(1,040)**
15TU12M-316	316SS			0.516 **(13.11)**	15,200 **(1,050)**	13,680 **(940)**	12,616 **(870)**	11,552 **(790)**	10,944 **(750)**
21TU16M-316	316SS	16MF	1	0.562 **(14.27)**	21,000 **(1,500)**	18,900 **(1,300)**	17,430 **(1,200)**	15,960 **(1,100)**	15,120 **(1,040)**
15TU16M-316	316SS			0.688 **(17.48)**	15,200 **(1,050)**	13,680 **(940)**	12,616 **(870)**	11,552 **(790)**	10,944 **(750)**

All dimensions are for reference only and subject to change.

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Coned and Threaded Nipples

Pressures to 21,000 psi **(1,500 bar)**

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

The coned and threaded medium pressure tube nipples are available in 316 stainless steel.

They are also available in the 15,200 psi **(1,050 bar)** or 21,000 psi **(1,500 bar)** versions for the 9/16", 3/4" and 1" OD tube sizes. 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							Fits Connection Type	Tube Size in. **(mm)**		Working Pressure at 100°F psi **(bar)**
2.75" **(69.85)** Length	3" **(76.2)** Length	4" **(101.6)** Length	6" **(152.4)** Length	8" **(203.2)** Length	10" **(254)** Length	12" **(304.8)** Length		O.D.	I.D.	
21N4M-2.75-316	**21N4M-3-316**	**21N4M-4-316**	**21N4M-6-316**	**21N4M-8-316**	**21N4M-10-316**	**21N4M-12-316**	4MF	1/4	0.109 **(2.77)**	21,000 **(1,500)**
	21N6M-3-316	**21N6M-4-316**	**21N6M-6-316**	**21N6M-8-316**	**21N6M-10-316**	**21N6M-12-316**	6MF	3/8	0.203 **(5.17)**	21,000 **(1,500)**
		21N9M-4-316	**21N9M-6-316**	**21N9M-8-316**	**21N9M-10-316**	**21N9M-12-316**	9MF	9/16	0.312 **(7.93)**	21,000 **(1,500)**
		15N9M-4-316	**15N9M-6-316**	**15N9M-8-316**	**15N9M-10-316**	**15N9M-12-316**	9MF	9/16	0.359 **(9.12)**	15,200 **(1,050)**
			21N12M-6-316	**21N12M-8-316**	**21N12M-10-316**	**21N12M-12-316**	12MF	3/4	0.438 **(11.13)**	21,000 **(1,500)**
			15N12M-6-316	**15N12M-8-316**	**15N12M-10-316**	**15N12M-12-316**	12MF	3/4	0.516 **(13.11)**	15,200 **(1,050)**
			21N16M-6-316	**21N16M-8-316**	**21N16M-10-316**	**21N16M-12-316**	16MF	1	0.562 **(14.27)**	21,000 **(1,500)**
			15N16M-6-316	**15N16M-8-316**	**15N16M-10-316**	**15N16M-12-316**	16MF	1	0.688 **(17.48)**	15,200 **(1,050)**

Standard nipples are not supplied with glands and collars, see Fittings on page 4 for these components.
See adjacent Tubing page 6, for pressure/temperature rating chart.
All dimensions are for reference only and subject to change.

Check Valves

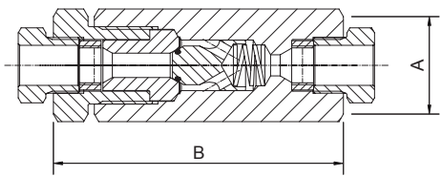
Pressures to 21,000 psi **(1,500 bar)**

O-Ring Check Valves

O-Ring Check Valves

MAXIMATOR o-ring check valves provide high quality directional flow control and tight shutoff 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.

Materials.
Body, cover, poppet, cover gland: 316 series stainless steel
Spring: 300 series stainless steel
O-ring: Viton "A" [4˚F to 392˚F **(-20°C to 200°C)**]

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							
	**21OC4M**	4MF	21,000 **(1,500)**	0.125 **(3.2)**	0.28	0.88 **(22.3)**	2.91 **(73.9)**
	21OC6M	6MF	21,000 **(1,500)**	0.219 **(5.6)**	0.84	1.06 **(27)**	3.31 **(84.1)**
	21OC9M	9MF	21,000 **(1,500)**	0.359 **(9.1)**	2.30	1.44 **(36.5)**	4.21 **(106.9)**
	21OC12M	12MF	21,000 **(1,500)**	0.516 **(13.1)**	4.70	2.00 **(50.8)**	5.43 **(137.9)**
	21OC16M	16MF	21,000 **(1,500)**	0.688 **(17.4)**	7.40	2.00 **(50.8)**	6.57 **(166.9)**

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.

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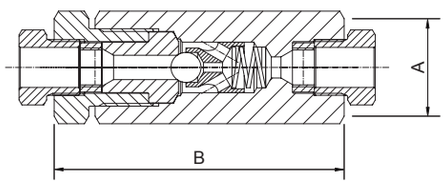
Ball Check Valves

Ball Check Valves

MAXIMATOR ball check valves prevent reverse flow where bubble tight shutoff 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.

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
Ball Check Valves							
	**21BC4M**	4MF	21,000 **(1,500)**	0.125 **(3.2)**	0.28	0.88 **(22.3)**	2.91 **(73.9)**
	21BC6M	6MF	21,000 **(1,500)**	0.219 **(5.6)**	0.84	1.06 **(27)**	3.31 **(84.1)**
	21BC9M	9MF	21,000 **(1,500)**	0.359 **(9.1)**	2.30	1.44 **(36.5)**	4.21 **(106.9)**
	21BC12M	12MF	21,000 **(1,500)**	0.516 **(13.1)**	4.70	2.00 **(50.8)**	5.43 **(137.9)**
	21BC16M	16MF	21,000 **(1,500)**	0.688 **(17.4)**	7.40	2.00 **(50.8)**	6.57 **(166.9)**

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.

MAXIMATOR®

Line Filters

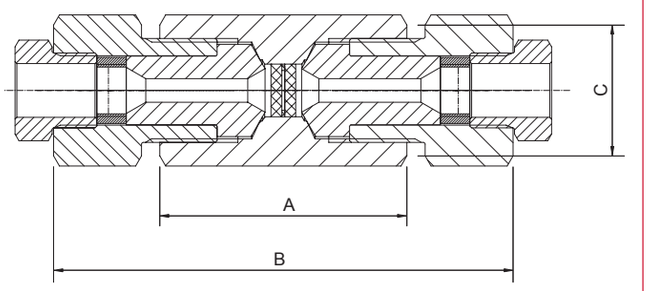
Pressures to 21,000 psi **(1,500 bar)**

Dual-Disc Line Filters

MAXIMATOR dual-disc line filters are used to filter process fluids in high pressure systems. This design helps remove the large particles first through a coarse primary disc, which then allows a secondary disc to provide a smaller micron filtration. These filter elements are designed to withstand pressure surges without cracking, flaking, or rupturing. Filter elements come standard in the following micron sizes: 5/8, 8/30, 30/56 (secondary/primary). Filters are rated for temperatures -60˚F to 660˚F **(-50°C to 350°C)**. All line filters come with glands and collars.

Materials
Body: cover, cover gland: 316L series stainless steel
Element: 316 stainless steel

Dual-Disc Line Filters

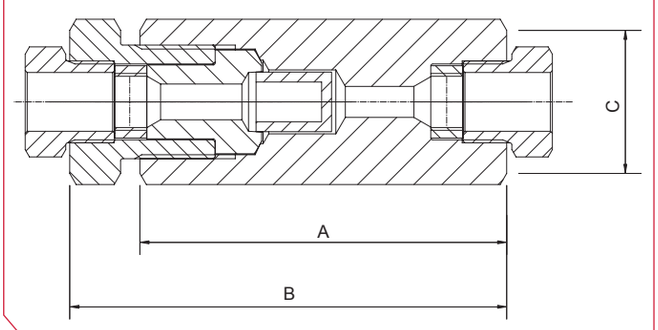


Cup-Type Line Filters

MAXIMATOR cup-type line filters are used when maximum filtration surface area and a single micron size element is preferred. This design increases the filter area as much as 6 times the area of the disc type filter, and will permit higher flow rates with a lower pressure drop, and longer intervals between element changes. Filter elements come standard in 5, 30, or 56 micron sizes and are easily replaced. Filters are rated for temperatures -60˚F to 660˚F **(-50°C to 350°C)**. All line filters come with glands and collars.

Materials:
Body, cover, cover gland: 316L series stainless steel
Element: 316 stainless steel

Cup-Type Line Filters



Catalog Number	Pressure Rating psi **(bar)**	Orifice in. **(mm)**	Micron Size	Connection Type	Filter Element Area in.² **(mm)²**	Dimensions in. **(mm)** A	B	C (Hex.)
Dual-Disc Line Filters								
21DF9M - 5/8	21,000 **(1,500)**	0.312 **(7.9)**	5/8	9MF	0.25 **(160)**	2.68 **(68.1)**	4.96 **(126)**	1.44 **(36.5)**
21DF9M - 8/30			8/30					
21DF9M - 30/56			30/56					
Cup-Type Line Filters								
21CF4M-5	21,000 **(1,500)**	0.125 **(3.2)**	5	4MF	0.82 **(530)**	2.38 **(60.5)**	2.87 **(72.9)**	0.88 **(22.3)**
21CF4M-30			30					
21CF4M-56			56					
21CF6M-5	21,000 **(1,500)**	0.219 **(5.6)**	5	6MF	0.82 **(530)**	2.83 **(71.8)**	3.35 **(85.1)**	1.06 **(27)**
21CF6M-30			30					
21CF6M-56			56					
21CF9M-5	21,000 **(1,500)**	0.359 **(9.1)**	5	9MF	1.55 **(1,000)**	3.63 **(92.2)**	4.33 **(110)**	1.44 **(36.5)**
21CF9M-30			30					
21CF9M-56			56					
21CF12M-5	21,000 **(1,050)**	0.516 **(13.1)**	5	12MF	6.14 **(3,960)**	5.75 **(146)**	6.57 **(166.9)**	2.00 **(50.8)**
21CF12M-30			30					
21CF12M-56			56					
21CF16M-5	21,000 **(1,500)**	0.688 **(17.4)**	5	16MF	6.14 **(3,960)**	5.75 **(146)**	6.57 **(166.9)**	2.00 **(50.8)**
21CF16M-30			30					
21CF16M-56			56					

It is recommended that all fluids entering a high pressure system be thoroughly cleaned. Maximator filters are designed to remove small amounts of process particles. Pressure differential should not exceed 1000 psi across the filter elements.

All dimensions for reference only and are subject to change.

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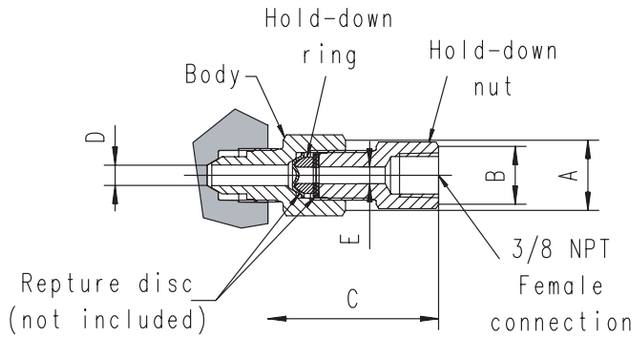
Safety Head Assembly

Pressures to 21,000 psi **(1,500 bar)**

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 rupture disc listed in the chart below.

Safety Head Assembly



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.)
21SH4M	4MF	21,000 **(1,500)**	20 **(30)**	1.06 **(27)**	0.88 **(22.3)**	2.48 **(63)**	0.109 **(2.8)**	0.250 **(6.3)**
21SH6M	6MF	21,000 **(1,500)**	30 **(40)**	1.06 **(27)**	0.88 **(22.3)**	2.72 **(69.1)**	0.203 **(5.1)**	0.250 **(6.3)**
21SH9M	9MF	21,000 **(1,500)**	55 **(75)**	1.06 **(27)**	0.88 **(22.3)**	2.51 **(63.7)**	0.312 **(7.9)**	0.250 **(6.3)**
21SH12M	12MF	21,000 **(1,500)**	90 **(120)**	1.19 **(30.2)**	0.88 **(22.3)**	2.72 **(69.1)**	0.312 **(7.9)**	0.250 **(6.3)**
21SH16M	16MF	21,000 **(1,500)**	150 **(200)**	1.44 **(36.6)**	0.88 **(22.3)**	2.72 **(69.1)**	0.312 **(7.9)**	0.250 **(6.3)**

All dimensions for reference only and are subject to change.

MAXIMATOR®

1/4" Angular Rupture Discs

1/4" angular seat rupture discs are designed to be used with the safety head assemblies that are show above. Minimum rupture disc pressure ratings should be at least 110% of system operating pressure. The standard material is Inconel. The pressure ranges indicated in the table below are at room temperature (72°F). Other materials and pressure ranges are available upon request.

Catalog Number	Pressure range psi **(bar)**
RD-1000	970 - 1,060 **(66.9-73.1)**
RD-1200	1,164 - 1,272 **(80.3-87.7)**
RD-1500	1,455 - 1,590 **(99.7-109.7)**
RD-1750	1,697 - 1,855 **(117-127.9)**
RD-2000	1,940 - 2,120 **(133.8-146.2)**
RD-2500	2,425 - 2,650 **(167.2-182.8)**
RD-3000	2,910 - 3,180 **(200.7-219.3)**
RD-3500	3,395 - 3,710 **(234.1-255.9)**
RD-4000	3,880 - 4,240 **(267.6-292.4)**
RD-4500	4,365 - 4,770 **(301-329)**
RD-5000	4,850 - 5,300 **(334.5-365.5)**

Catalog Number	Pressure range psi **(bar)**
RD-5500	5,335 - 5,830 **(367.9-402.1)**
RD-6000	5,820 - 6,360 **(401.4-438.6)**
RD-6500	6,305 - 6,890 **(434.8-475.2)**
RD-7000	6,790 - 7,420 **(468.3 - 511.7)**
RD-7500	7,275 - 7,950 **(501.7-548.3)**
RD-8000	7,760 - 8,480 **(535.2 - 584.8)**
RD-8500	8,245 - 9,010 **(568.6 - 621.4)**
RD-9000	8,730 - 9,540 **(602.1 - 657.9)**
RD-9500	9,215 - 10,070 **(635.5 - 694.5)**
RD-10000	9,700 - 10,600 **(669 - 731)**
RD-11000	10,670 -11,660 **(735.9 - 804.1)**

Catalog Number	Pressure range psi **(bar)**
RD-12000	11,640 - 12,720 **(802.8 - 877.2)**
RD-13000	12,610 - 13,780 **(869.7 - 950.3)**
RD-14000	13,580 - 14,840 **(936.6 - 1023.4)**
RD-15000	14,550 - 15,900 **(1,003.4 - 1,096.6)**
RD-16000	15,520 - 16,960 **(1,070.3 - 1,169.7)**
RD-17000	16,490 - 18,020 **(1,137.2 - 1,242.8)**
RD-18000	17,460 - 19,080 **(1,204.1 - 1,315.9)**
RD-19000	18,430 - 20,140 **(1,271 - 1,389)**
RD-20000	19,400 - 21,200 **(1,337.9 - 1,462.1)**
RD-21000	20,370 - 22,260 **(1,404.8 - 1,535.2)**
RD-22000	21,340 - 23,320 **(1,471.7 - 1,608.3)**

Rupture Discs are individually packed and marked type plate.

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MAXIMATOR®




High Pressure Valves, Fittings and Tubing

Pressures to 65,000 psi **(4,500 bar)**

MAXIMATOR has been designing and manufacturing high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliability, backed by one of the best service organizations in the industry.

High Pressure Valves feature:

- Rising stem design.
- 316 L (1.4404) wetted parts for excellent corrosion resistance.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem and seat life, greater durability for repeated open and close cycles.
- PTFE and carbon packing with metal back-up rings offers reliable stem to body sealing.
- Non-rotating stem prevents stem to seat galling.
- Stem sleeve and packing gland materials have been selected to achieve optimum thread cycle life and reduced handle torque. All stem sleeve threads are rolled, assuring smooth operation.
- Safety weep holes for all pressure connections and packing area.
- Six different valve body patterns, with choice of vee or regulating type stem tip.

MAXIMATOR offers a complete line of high pressure fittings, tubing, check valves, line filters, anti-vibration fittings and safety head assemblies. All high pressure valves and fittings use the high pressure style connection.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links to:

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

High Pressure Valves

Pressures to 36,000 psi **(2,500 bar)**

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.

O.D. Size in. **(mm)**	Connection Type	Orifice Size in. **(mm)**	Rated Cv*	Pressure/Temp. Rating psi @ R.T.** **(bar)**
1/4 **(6.35)**	4HF	0.094 **(2.3)**	0.12	36,000 **(2,500)**
3/8 **(9.53)**	6HF	0.125 **(3.2)**	0.23	36,000 **(2,500)**
9/16 **(19.05)**	9HF	0.125 **(3.2)**	0.33	36,000 **(2,500)**

* *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.*

Ordering Information

Typical catalog number: **36V4H071**

36V	4H	07	1	OPTIONS

Valve Series	O.D. Tube Size	Stem Type	Body Pattern	Extreme temperature option, see below.
36V	**4H** – 1/4" **6H** – 3/8" **9H** – 9/16"	**07** – VEE stem **08** – regulating stem (tapered tip for regulating and shutoff) **87** – VEE stem with replaceable seat **88** – regulating stem with replaceable seat	**1** – two-way straight **2** – two-way angle **3** – three-way, two on pressure **4** – three-way, one on pressure **5** – three-way, two-stem manifold	

Special Designs for Extreme Temperatures

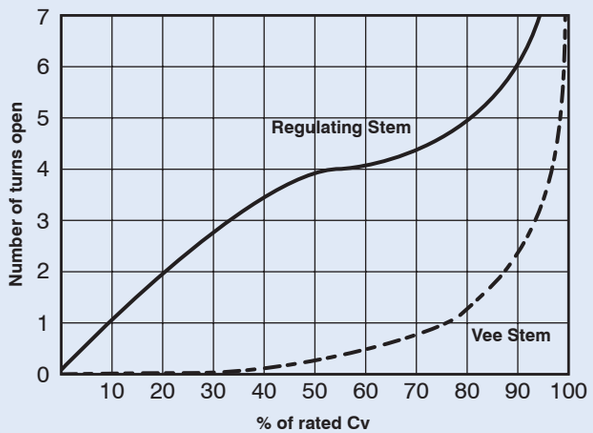
Standard valves are supplied with Teflon/Carbon packing and may be operated to 450°F **(230°C)**. High temperature packing and/or extended stuffing box are available for service from -423°F to 1200°F **(-217°C to 650°C)** by adding the following suffixes to catalog order number.

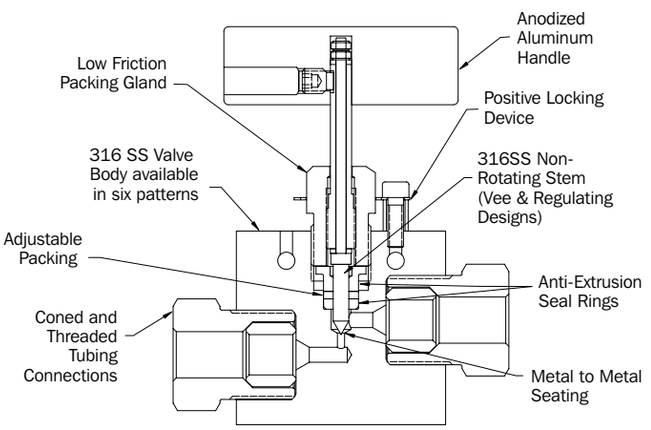
- **- TG** standard valve with teflon glass packing to 600°F **(315°C)**.
- **- GY** standard valve with graphite braided yarn packing to 800°F **(425°C)**.
- **- HT** extended stuffing box valve with graphite braided yarn packing to 1200°F **(650°C)**.
- **- B** standard valve with cryogenic trim materials and teflon packing to -100°F **(-73°C)**.
- **- LT** entended stuffing box valve with teflon packing and cryogenic trim materials to -423°F **(-217°C)**.

Repair Kits

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

Flow Coefficient Reference Curves (Cv)





Valve Shown: 36V9HO71

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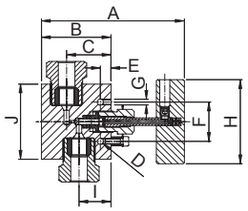
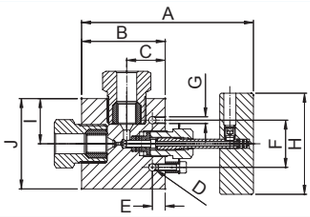
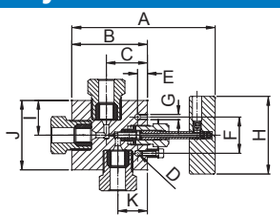
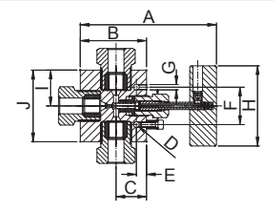
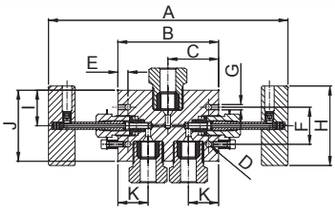
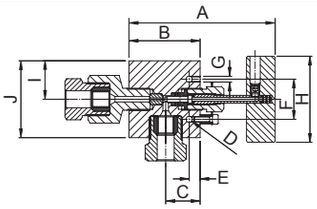
Valve Pattern	Catalog Number	Stem Type	O.D. Tube in.	Orifice in. (mm)	Dimensions in. (mm) A	B	C	D	E	F	H	I	J	K	Valve Panel Hole	Block Thickness
2-Way Straight																
	36V4H071	Vee	1/4	0.094 (2.3)	4.96 (126)	2.01 (51)	1.50 (38)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.12 (28.5)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V4H081	Reg														
	36V6H071	Vee	3/8	0.125 (3.2)	4.96 (126)	2.01 (51)	1.50 (38)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.12 (28.5)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V6H081	Reg														
	36V9H071	Vee	9/16	0.125 (3.2)	5.00 (127)	2.44 (62)	1.56 (39.6)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.12 (28.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	36V9H081	Reg														
2-Way Angle																
	36V4H072	Vee	1/4	0.094 (2.3)	4.96 (126)	2.01 (51)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V4H082	Reg														
	36V6H072	Vee	3/8	0.125 (3.2)	4.78 (121.5)	2.20 (56)	1.10 (28)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V6H082	Reg														
	36V9H072	Vee	9/16	0.125 (3.2)	5.00 (127)	2.44 (62)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	36V9H082	Reg														
3-Way / 2 on Pressure																
	36V4H073	Vee	1/4	0.094 (2.3)	4.69 (119.1)	2.13 (54.1)	1.50 (38)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.12 (28.5)	1.00 (25.4)	1.02 (25.9)
	36V4H083	Reg														
	36V6H073	Vee	3/8	0.125 (3.2)	5.08 (129)	2.50 (63.5)	1.50 (38)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.12 (28.5)	1.00 (25.4)	1.02 (25.9)
	36V6H083	Reg														
	36V9H073	Vee	9/16	0.125 (3.2)	5.45 (138.5)	2.87 (72.9)	1.56 (39.6)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)	1.12 (28.5)	1.00 (25.4)	1.54 (39.1)
	36V9H083	Reg														
3-Way / 1 on Pressure																
	36V4H074	Vee	1/4	0.094 (2.3)	4.96 (126)	2.01 (51)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V4H084	Reg														
	36V6H074	Vee	3/8	0.125 (3.2)	4.76 (121)	2.20 (56)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V6H084	Reg														
	36V9H074	Vee	9/16	0.125 (3.2)	5.00 (127)	2.44 (62)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	36V9H084	Reg														
3-Way / 2-Stem Manifold																
	36V4H075	Vee	1/4	0.094 (2.3)	8.23 (209)	3.07 (78)	1.54 (39.1)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.12 (28.5)	1.00 (25.4)	1.02 (25.9)
	36V4H085	Reg														
	36V6H075	Vee	3/8	0.125 (3.2)	8.39 (213)	3.25 (82.5)	1.61 (40.9)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.12 (28.5)	1.00 (25.4)	1.02 (25.9)
	36V6H085	Reg														
	36V9H075	Vee	9/16	0.125 (3.2)	8.90 (226)	3.74 (95)	1.88 (47.8)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)	1.12 (28.5)	1.00 (25.4)	1.54 (39.1)
	36V9H085	Reg														
2-Way Angle / Replaceable Seat																
	36V4H872	Vee	1/4	0.094 (2.3)	4.96 (126)	2.38 (60.5)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V4H882	Reg														
	36V6H872	Vee	3/8	0.125 (3.2)	4.96 (126)	2.38 (60.5)	1.12 (28.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	36V6H882	Reg														
	36V9H872	Vee	9/16	0.125 (3.2)	5.00 (127)	2.44 (62)	1.18 (30)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	36V9H882	Reg														

G - Panel mounting screw thread size 10-24 UNC.

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.

MAXIMATOR®

High Pressure Valves

Pressures to 65,000 psi **(4,500 bar)**

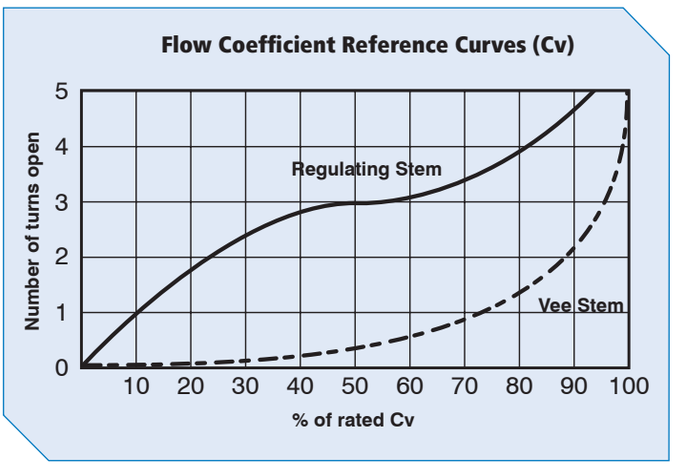
MAXIMATOR high pressure valves with metal to metal seats have a high level of safety and reliability under adverse operating conditions. These valves may be used both with gases and liquids.

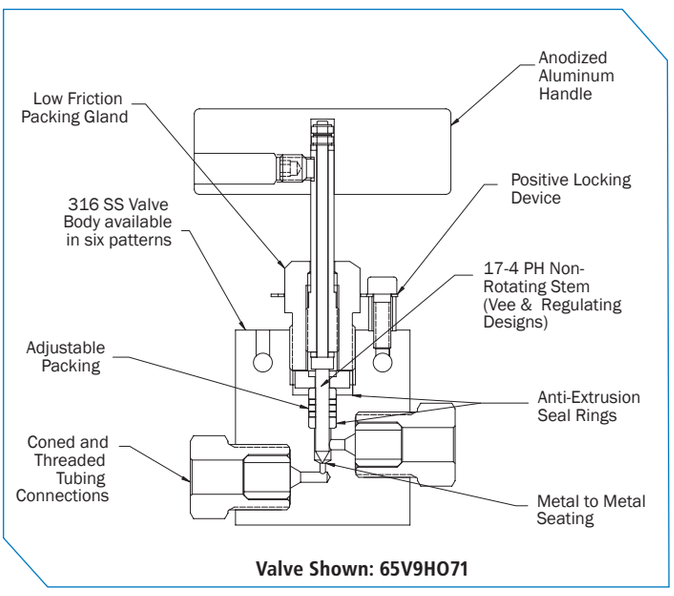
Traceability is ensured through extensively documented data (batch number, maximum pressure, material number, type designation). All high pressure valves include glands and collars.

O.D. Size in. **(mm)**	Connection Type	Orifice Size in. **(mm)**	Rated Cv*	Pressure/Temp. Rating psi **(bar)** @ R.T.**
1/4 **(6.35)**	4HF	0.062 **(1.6)**	0.08	65,000 **(4,500)**
3/8 **(9.53)**	6HF	0.062 **(1.6)**	0.09	65,000 **(4,500)**
9/16 **(19.05)**	9HF	0.078 **(2)**	0.14	65,000 **(4,500)**

** 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.*





Valve Shown: 65V9HO71

Ordering Information

Typical catalog number: **65V4H071**

65V	4H	07	1	OPTIONS

Valve Series	O.D. Tube Size	Stem Type	Body Pattern	Extreme temperature option, see below.
65V	**4H** – 1/4" **6H** – 3/8" **9H** – 9/16"	**07** – VEE stem **08** – regulating stem (tapered tip for regulating and shutoff) **87** – VEE stem with replaceable seat **88** – regulating stem with replaceable seat	**1** – two-way straight **2** – two-way angle **3** – three-way, two on pressure **4** – three-way, one on pressure **5** – three-way, two-stem manifold	

Special Designs for Extreme Temperatures

Standard valves are supplied with Teflon/Carbon packing and may be operated to 450°F **(230°C)**. High temperature packing and/or extended stuffing box are available for service from -423°F to 1200°F **(-217°C to 650°C)** by adding the following suffixes to catalog order number.

- **- TG** standard valve with teflon glass packing to 600°F **(315°C)**.
- **- GY** standard valve with graphite braided yarn packing to 800°F **(425°C)**.
- **- HT** extended stuffing box valve with graphite braided yarn packing to 1200°F **(650°C)**.
- **- B** standard valve with cryogenic trim materials and teflon packing to -100°F **(-73°C)**.
- **- LT** entended stuffing box valve with teflon packing and cryogenic trim materials to -423°F **(-217°C)**.

Repair Kits

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

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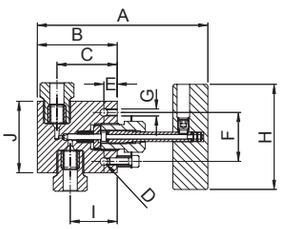
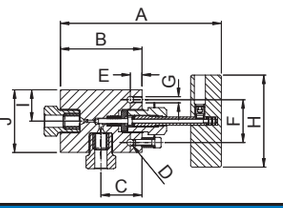
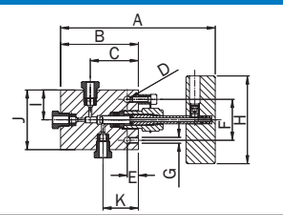
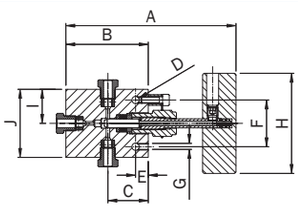
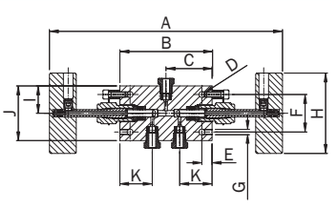
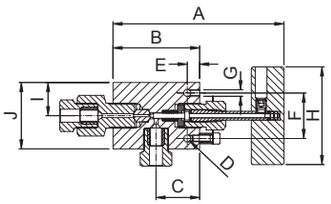
Valve Pattern	Catalog Number	Stem Type	O.D. Tube in.	Orifice in. (mm)	Dimensions in. (mm) A	B	C	D	E	F	H	I	J	K	Valve Panel Hole	Block Thickness
2-Way Straight																
	65V4H071	Vee	1/4	0.062 (1.6)	4.67 (118.6)	2.13 (54.1)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V4H081	Reg														
	65V6H071	Vee	3/8	0.062 (1.6)	4.80 (122)	2.24 (56.9)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V6H081	Reg														
	65V9H071	Vee	9/16	0.078 (2)	5.04 (128)	2.50 (63.5)	1.75 (44.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.30 (33)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	65V9H081	Reg														
2-Way Angle																
	65V4H072	Vee	1/4	0.062 (1.6)	4.96 (126)	2.38 (60.5)	1.34 (34)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V4H082	Reg														
	65V6H072	Vee	3/8	0.062 (1.6)	5.16 (131)	2.62 (66.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V6H082	Reg														
	65V9H072	Vee	9/16	0.078 (2)	5.35 (136)	2.80 (71.1)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	65V9H082	Reg														
3-Way / 2 on Pressure																
	65V4H073	Vee	1/4	0.062 (1.6)	4.96 (126)	2.38 (60.5)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.32 (33.5)	1.00 (25.4)	1.02 (25.9)
	65V4H083	Reg														
	65V6H073	Vee	3/8	0.062 (1.6)	5.31 (134.9)	2.76 (70.1)	1.69 (43)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.32 (33.5)	1.00 (25.4)	1.02 (25.9)
	65V6H083	Reg														
	65V9H073	Vee	9/16	0.078 (2)	5.71 (145)	3.15 (80)	1.75 (44.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)	1.30 (33)	1.00 (25.4)	1.54 (39.1)
	65V9H083	Reg														
3-Way / 1 on Pressure																
	65V4H074	Vee	1/4	0.062 (1.6)	4.96 (126)	2.38 (60.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V4H084	Reg														
	65V6H074	Vee	3/8	0.062 (1.6)	5.16 (131)	2.62 (66.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V6H084	Reg														
	65V9H074	Vee	9/16	0.078 (2)	5.35 (136)	2.80 (71.1)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	65V9H084	Reg														
3-Way / 2-Stem Manifold																
	65V4H075	Vee	1/4	0.062 (1.6)	8.56 (217.4)	3.44 (87.4)	1.72 (43.7)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.32 (33.5)	1.00 (25.4)	1.02 (25.9)
	65V4H085	Reg														
	65V6H075	Vee	3/8	0.062 (1.6)	8.56 (217.4)	3.76 (95.5)	1.89 (48)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)	1.32 (33.5)	1.00 (25.4)	1.02 (25.9)
	65V6H085	Reg														
	65V9H075	Vee	9/16	0.078 (2)	9.25 (235)	4.13 (105)	2.07 (52.6)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)	1.30 (33)	1.00 (25.4)	1.54 (39.1)
	65V9H085	Reg														
2-Way Angle / Replaceable Seat																
	65V4H872	Vee	1/4	0.062 (1.6)	5.16 (131)	2.62 (66.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V4H882	Reg														
	65V6H872	Vee	3/8	0.062 (1.6)	5.16 (131)	2.62 (66.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.00 (25.4)	2.01 (51)		1.00 (25.4)	1.02 (25.9)
	65V6H882	Reg														
	65V9H872	Vee	9/16	0.078 (2)	5.16 (131)	2.62 (66.5)	1.32 (33.5)	0.22 (5.6)	0.37 (9.5)	1.38 (35)	2.95 (75)	1.32 (33.5)	2.64 (57)		1.00 (25.4)	1.54 (39.1)
	65V9H882	Reg														

G - Panel Mounting Screw Thread Size 10-24 UNC.

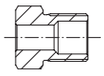
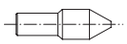
All dimensions are for reference only and subject to change.

MAXIMATOR®

High Pressure Fittings

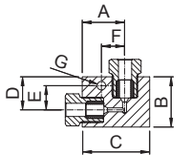
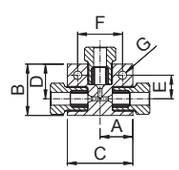
Pressures to 65,000 psi **(4,500 bar)**

MAXIMATOR high pressure fittings are designed to be used with the 36V and 65V 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
				
1/4	**65G4H**	**65C4H**	**65P4H**	**65TC4H**
3/8	**65G6H**	**65C6H**	**65P6H**	**65TC6H**
9/16	**65G9H**	**65C9H**	**65P9H**	**65TC9H**

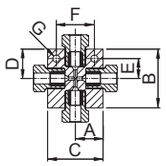
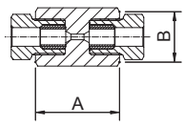
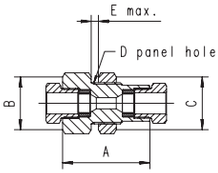
Connection Components

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)** A	B	C	D	E	F	G	Block Thick-ness
Elbow												
	**65L4H**	4HF	1/4	0.094 **(2.3)**	0.89 **(22.6)**	1.02 **(25.9)**	1.54 **(39.1)**	0.63 **(16)**	0.46 **(11.7)**	0.65 **(16.5)**	0.22 **(5.6)**	1.02 **(25.9)**
	65L6H	6HF	3/8	0.125 **(3.2)**	1.26 **(32)**	1.50 **(38.1)**	2.01 **(51)**	0.98 **(24.9)**	0.72 **(18.3)**	0.69 **(17.5)**	0.26 **(6.6)**	1.02 **(25.9)**
	65L9H	9HF	9/16	0.188 **(4.8)**	1.89 **(48)**	1.89 **(48)**	2.64 **(67)**	1.10 **(28)**	0.83 **(21.1)**	0.94 **(23.9)**	0.33 **(8.4)**	1.54 **(39.1)**
Tee												
	**65T4H**	4HF	1/4	0.094 **(2.3)**	1.00 **(25.4)**	1.26 **(32)**	2.01 **(51)**	0.89 **(22.6)**	0.46 **(11.7)**	1.30 **(33)**	0.22 **(5.6)**	1.02 **(25.9)**
	65T6H	6HF	3/8	0.125 **(3.2)**	1.00 **(25.4)**	1.57 **(39.9)**	2.01 **(51)**	1.06 **(26.9)**	0.72 **(18.3)**	1.38 **(35)**	0.26 **(6.6)**	1.02 **(25.9)**
	65T9H	9HF	9/16	0.188 **(4.8)**	1.32 **(33.5)**	2.13 **(54.1)**	2.64 **(67)**	1.38 **(35)**	0.83 **(21.1)**	1.89 **(48)**	0.33 **(8.4)**	1.54 **(39.1)**

See page 2 in the Technical Section for pressure/temperature rating chart.

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

Fitting Pattern	Catalog Number	Connection Type	O.D. Tube Size in.	Orifice in. **(mm)**	Dimensions in. **(mm)** A	B	C	D	E	F	G	Block Thick-ness
Cross												
	**65X4H**	4HF	1/4	0.094 **(2.3)**	1.00 **(25.4)**	1.26 **(32)**	2.01 **(51.1)**	0.63 **(16)**	0.46 **(11.7)**	1.30 **(33)**	0.22 **(5.6)**	1.02 **(25.9)**
	65X6H	6HF	3/8	0.125 **(3.2)**	1.00 **(25.4)**	2.13 **(54.1)**	2.01 **(51.1)**	1.06 **(27)**	0.72 **(18.3)**	1.38 **(35)**	0.26 **(6.6)**	1.02 **(25.9)**
	65X9H	9HF	9/16	0.188 **(4.8)**	1.32 **(33.5)**	2.76 **(70.1)**	2.64 **(67)**	1.38 **(35)**	0.83 **(21.1)**	1.89 **(48)**	0.33 **(8.4)**	1.54 **(39.1)**
Straight Coupling / Union Coupling												
	**65F4H**	4HF	1/4	0.094 **(2.3)**	1.38 **(35)**	1.06 **(27)**	Straight Coupling					
	65UF4H						Union Coupling					
	65F6H	6HF	3/8	0.125 **(3.2)**	1.77 **(45)**	1.06 **(27)**	Straight Coupling					
	65UF6H						Union Coupling					
	65F9H	9HF	9/16	0.188 **(4.8)**	2.19 **(55.6)**	1.44 **(36.6)**	Straight Coupling					
	65UF9H						Union Coupling					
Bulkhead Coupling												
	**65BF4H**	4HF	1/4	0.094 **(2.3)**	1.89 **(48)**	1.06 **(27)**	1.06 **(27)**	0.94 **(23.9)**	0.16 **(4)**			
	65BF6H	6HF	3/8	0.125 **(3.2)**	2.38 **(60.5)**	1.44 **(36.6)**	1.44 **(36.6)**	1.12 **(28.5)**	0.35 **(8.9)**			
	65BF9H	9HF	9/16	0.188 **(4.8)**	2.76 **(70.1)**	1.63 **(41.3)**	1.63 **(41.3)**	1.43 **(36.3)**	0.67 **(17)**			

See page 2 in the Technical Section for pressure/temperature rating chart.
All dimensions are for reference only and are subject to change.

MAXIMATOR®

Anti-Vibration Collet Gland Assembly

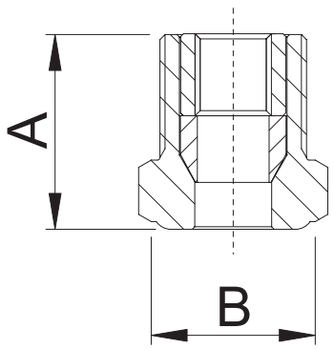
Pressures to 65,000 psi **(4,500 bar)**

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.

In a normal coned and threaded tube connection, any external mechanical loading on the tubing lines, valves or fittings, would be concentrated on the first thread of the tube. This can cause failure of the tube at this thinner cross-section. The anti-vibration collet gland assembly grips the tube behind the connection, supporting the tube at the full cross-section and straight area, moving the loading away from the threaded area.

The anti-vibration collet gland assembly, when tightened properly, compresses a split collet on the tube, providing the beneficial gripping action.

All anti-vibration collet gland assemblies come with a Molybdenum Disulfide Coating to guard against galling of the stainless components.

Gland Pattern	Catalog Number	Part	O.D. Tubing Size in.	Dimensions in. **(mm)**	
				A	B (Hex.)
	**65AVA4H**	Complete Assembly	1/4	0.83 **(21.1)**	0.62 **(15.7)**
	65AVFC4H	Flat Collar			
	65AVC4H	Slotted Collet			
	65AVG4H	Gland Nut			
	65AVA6H	Complete Assembly	3/8	1.16 **(29.5)**	0.81 **(20.6)**
	65AVFC6H	Flat Collar			
	65AVC6H	Slotted Collet			
	65AVG6H	Gland Nut			
	65AVA9H	Complete Assembly	9/16	1.50 **(38)**	1.19 **(30.2)**
	65AVFC9H	Flat Collar			
	65AVC9H	Slotted Collet			
	65AVG9H	Gland Nut			

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

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High Pressure Tubing

Pressures to 65,000 psi **(4,500 bar)**

MAXIMATOR offers a line of cold drawn thick wall tubing, with flow areas to compliment the high pressure valves and fittings. 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.

The standard materials are 304 and 316 stainless steels. Other materials may be provided on special request, depending on the specific material, diameters and lengths.

Tubing Tolerances

Normal Tubing Size in. **(mm)**	Tolerance O.D. in. **(mm)**
1/4 **(6.35)**	0.248 / 0.243 **(6.299 / 6.172)**
3/8 **(9.53)**	0.370 / 0.365 **(9.398 / 9.271)**
9/16 **(14.29)**	0.557 / 0.552 **(14.148 / 14.021)**

Catalog Number	Tube Material	Fits Connection Type	Tube Size in. **(mm)**		Working Pressure psi **(bar)**				
			O.D.	I.D.	-325 to 100°F **(-198°C to 57°C)**	200°F **(93°C)**	400°F **(204°C)**	600°F **(315°C)**	800°F **(426°C)**
65TU4H-316	316SS	4HF	1/4 **(6.35)**	0.083 **(2.11)**	65,000 **(4,500)**	58,500 **(4,050)**	53,950 **(3,750)**	49,400 **(3,400)**	46,800 **(3,250)**
65TU4H-304	304SS								
65TU6H-316	316SS	6HF	3/8 **(9.53)**	0.125 **(3.18)**	65,000 **(4,500)**	58,500 **(4,050)**	53,950 **(3,750)**	49,400 **(3,400)**	46,800 **(3,250)**
65TU6H-304	304SS								
65TU9H-316	316SS	9HF	9/16 **(14.29)**	0.188 **(4.77)**	65,000 **(4,500)**	58,500 **(4,050)**	53,950 **(3,750)**	49,400 **(3,400)**	46,800 **(3,250)**
65TU9H-304	304SS								
65TU4H-HP160	HP160	4HF	1/4 **(6.35)**	0.06 **(1.59)**	101,000 **(7,000)**	82,600 **(5,740)**	72,600 **(5,040)**	66,500 **(4,620)**	61,500 **(4,270)**
65TU6H-HP160	HP160	6HF	3/8 **(9.53)**	0.16 **(3.97)**	152,000 **(10,500)**	124,000 **(8,650)**	108,800 **(7,560)**	99,800 **(6,930)**	92,200 **(6,400)**

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

MAXIMATOR®

Coned and Threaded Nipples

Pressures to 65,000 psi **(4,500 bar)**

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							Fits Connection Type	Tube Size in. **(mm)**		Working Pressure at 100°F psi **(mm)**
2.75″ **(69.85)** Length	3″ **(76.2)** Length	4″ **(101.6)** Length	6″ (152,4) Length	8″ **(203.2)** Length	10″ **(254)** Length	12″ **(304.8)** Length		O.D.	I.D.	
65N4H-2.75-316	**65N4H-3-316**	**65N4H-4-316**	**65N4H-6-316**	**65N4H-8-316**	**65N4H-10-316**	**65N4H-12-316**	4HF	1/4	0.083 **(2.11)**	65,000 **(4,500)**
	65N6H-3-316	**65N6H-4-316**	**65N6H-6-316**	**65N6H-8-316**	**65N6H-10-316**	**65N6H-12-316**	6HF	3/8	0.125 **(3.17)**	65,000 **(4,500)**
		65N9H-4-316	**65N9H-6-316**	**65N9H-8-316**	**65N9H-10-316**	**65N9H-12-316**	9HF	9/16	0.188 **(4.77)**	65,000 **(4,500)**

Standard nipples are not supplied with glands and collars, see Fittings on page 6 for these components.

See adjacent Tubing page 8, for pressure/temperature rating chart.

All dimensions are for reference only and subject to change.

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O-Ring Check Valves

O-Ring Check Valves

MAXIMATOR o-ring check valves provide high quality directional flow control and tight shutoff 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.

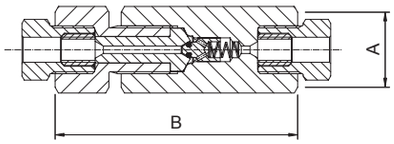
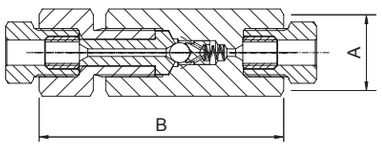
Materials.
Body, cover, poppet, cover gland: 316 series stainless steel
Spring: 300 series stainless steel
O-ring: Viton "A" [-4˚F to 392˚F **(-20°C to 200°C)**]

Ball Check Valves

Ball Check Valves

MAXIMATOR ball check valves prevent reverse flow where bubble tight shutoff 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.

Materials.
Body, cover, poppet, cover gland: 316 L 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							
	**65OC4H**	4HF	65,000 **(4,500)**	0.094 **(2.3)**	0.15	1.19 **(30.2)**	3.40 **(86.4)**
	65OC6H	6HF	65,000 **(4,500)**	0.125 **(3.2)**	0.28	1.19 **(30.2)**	3.81 **(96.8)**
	65OC9H	9HF	65,000 **(4,500)**	0.188 **(4.8)**	0.63	1.63 **(41.4)**	4.61 **(117.1)**
Ball Check Valves							
	**65BC4H**	4HF	65,000 **(4,500)**	0.094 **(2.3)**	0.15	1.19 **(30.2)**	3.40 **(86.4)**
	65BC6H	6HF	65,000 **(4,500)**	0.125 **(3.2)**	0.28	1.19 **(30.2)**	3.81 **(96.8)**
	65BC9H	9HF	65,000 **(4,500)**	0.188 **(4.8)**	0.63	1.63 **(41.3)**	4.61 **(117.1)**

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.

MAXIMATOR®

Line Filters

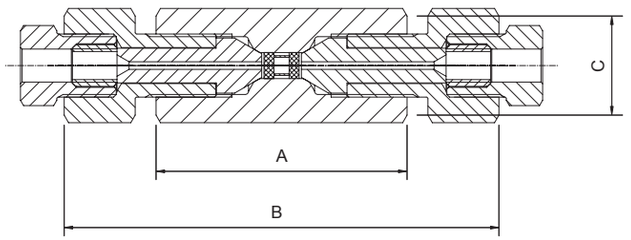
Pressures to 65,000 psi **(4,500 bar)**

Dual-Disc Line Filters

MAXIMATOR dual-disc line filters are used to filter process fluids in high pressure systems. This design helps remove the large particles first through a coarse primary disc, which then allows a secondary disc to provide a smaller micron filtration. These filter elements are designed to withstand pressure surges without cracking, flaking, or rupturing. Filter elements come standard in the following micron sizes: 5/8, 8/30, 30/56 (secondary/primary). Filters are rated for temperatures -60˚F to 660˚F **(-50°C to 350°C)**. All line filters come with glands and collars.

Materials
Body, cover, cover gland: 316 series stainless steel
Element: 300 series stainless steel

Dual-Disc Line Filters

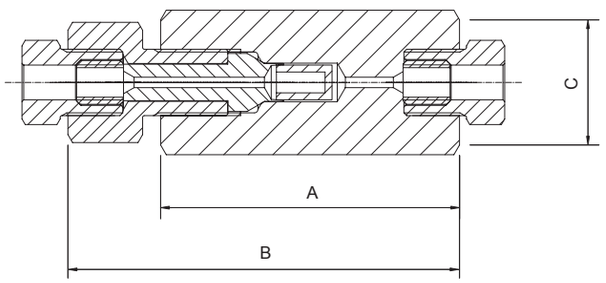


Cup-Type Line Filters

MAXIMATOR cup-type line filters are used when maximum filtration surface area and a single micron size element is preferred. This design increases the filter area as much as 6 times the area of the disc type filter, and will permit higher flow rates with a lower pressure drop, and longer intervals between element changes. Filter elements come standard in 5, 30, or 56 micron sizes and are easily replaced. Filters are rated for temperatures -60˚F to 660˚F **(-50°C to 350°C)**. All line filters come with glands and collars.

Materials:
Body, cover, cover gland: 316 series stainless steel
Element: 300 series stainless steel

Cup-Type Line Filters



Catalog Number	Pressure Rating psi **(bar)**	Orifice in. **(mm)**	Micron Size	Connection Type	Filter Element Areas in.² **(mm²)**	Dimensions in. **(mm)** A	B	C (Hex.)
Dual-Disc Line Filters								
65DF4H-5/8	65,000 **(4,500)**	0.094 **(2.3)**	5/8	4HF	0.07 **(50)**	2.99 **(76)**	4.8 **(121.9)**	1.19 **(30.2)**
65DF4H-8/30			8/30					
65DF4H-30/56			30/56					
65DF6H-5/8	65,000 **(4,500)**	0.125 **(3.2)**	5/8	6HF	0.07 **(50)**	2.99 **(76)**	5.29 **(134.4)**	1.19 **(30.2)**
65DF6H-8/30			8/30					
65DF6H-30/56			30/56					
65DF9H-5/8	65,000 **(4,500)**	0.188 **(4.8)**	5/8	9HF	0.15 **(95)**	3.39 **(86.1)**	5.75 **(146)**	1.44 **(36.6)**
65DF9H-8/30			8/30					
65DF9H-30/56			30/56					
Cup-Type Line Filters								
65CF4H-5	65,000 **(4,500)**	0.094 **(2.3)**	5	4HF	0.82 **(530)**	3.39 **(86.1)**	4.25 **(108)**	1.44 **(36.6)**
65CF4H-30			30					
65CF4H-56			56					
65CF6H-5	65,000 **(4,500)**	0.125 **(3.2)**	5	6HF	0.82 **(530)**	3.39 **(86.1)**	4.44 **(112.8)**	1.44 **(36.6)**
65CF6H-30			30					
65CF6H-56			56					
65CF9H-5	65,000 **(4,500)**	0.188 **(4.8)**	5	9HF	0.82 **(530)**	4.06 **(103.1)**	5.28 **(134.1)**	1.63 **(41.3)**
65CF9H-30			30					
65CF9H-56			56					

It is recommended that all fluids entering a high pressure system be thoroughly cleaned. Maximator filters are designed to remove small amounts of process partcles. Pressure differential should not exceed 1000 psi across the filter elements.

All dimensions for reference only and are subject to change.

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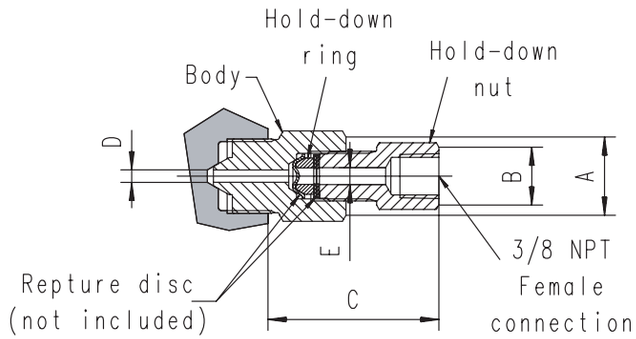
Safety Head Assembly

Pressures to 65,000 psi **(4,500 bar)**

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 rupture disc listed in the chart below.

Safety Head Assembly



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.)
65SH4H	4HF	65,000 **(4,500)**	25 **(35)**	1.06 **(26.9)**	0.88 **(22.4)**	2.57 **(65.3)**	0.083 **(2.11)**	0.250 **(6.4)**
65SH6H	6HF	65,000 **(4,500)**	50 **(70)**	1.06 **(26.9)**	0.88 **(22.4)**	2.54 **(64.5)**	0.125 **(3.2)**	0.250 **(6.4)**
65SH9H	9HF	65,000 **(4,500)**	110 **(150)**	1.19 **(30.2)**	0.88 **(22.4)**	2.48 **(63)**	0.188 **(4.8)**	0.250 **(6.4)**

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

MAXIMATOR®

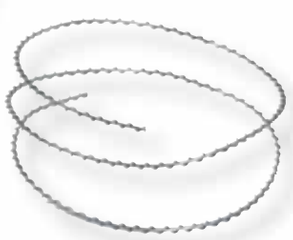
1/4" Angular Rupture Discs

Pressures to 65,000 psi **(4,500 bar)**

1/4" angular seat rupture discs are designed to be used with the safety head assemblies that are shown above. Minimum rupture disc pressure ratings should be at least 110% of system operating pressure. The standard rupture disc material is Inconel. The pressure ranges indicated in the table below are at room temperature (72°F). Other materials and pressure ranges are available upon request.

Catalog Number	Pressure range psi (bar)	Catalog Number	Pressure range psi (mm)	Catalog Number	Pressure range psi (bar)	Catalog Number	Pressure range psi (bar)
RD-1200	1,164 - 1,272 **(80.3 - 87.7)**	**RD-7000**	6,790 - 7,420 **(468.3 - 511.7)**	**RD-17000**	16,490 - 18,020 **(1,137.2 - 1,242.8)**	**RD-30000**	29,100 - 31,800 **(2,006.9 - 2,193.1)**
RD-1500	1,455 - 1,590 **(99.7 - 109.7)**	**RD-7500**	7,275 - 7,950 **(501.7 - 548.3)**	**RD-18000**	17,460 - 19,080 **(1,204.1 - 1,315.9)**	**RD-32500**	31,525 - 34,450 **(2,174.1 - 2,375.9)**
RD-1750	1,697 - 1,855 **(117 - 127.9)**	**RD-8000**	7,760 - 8,480 **(535.2 - 584.8)**	**RD-19000**	18,430 - 20,140 **(1,271 - 1,389)**	**RD-35000**	33,950 - 37,100 **(2,341.4 - 2,558.6)**
RD-2000	1,940 - 2,120 **(133.8 - 146.2)**	**RD-8500**	8,245 - 9,010 **(568.6 - 621.4)**	**RD-20000**	19,400 - 21,200 **(1,337.9 - 1,462.1)**	**RD-37500**	36,375 - 39,750 **(2,508.6 - 2,741.4)**
RD-2500	2,425 - 2,650 **(167.2 - 182.8)**	**RD-9000**	8,730 - 9,540 **(602.1 - 657.9)**	**RD-21000**	20,370 - 22,260 **(1,404.8 - 1,535.2)**	**RD-40000**	38,880 - 42,400 **(2,681.4 - 2,924.1)**
RD-3000	2,910 - 3,180 **(200.7 - 219.3)**	**RD-9500**	9,215 - 10,070 **(635.5 - 694.5)**	**RD-22000**	21,340 - 23,320 **(1,471.7 - 1,608.3)**	**RD-42500**	41,255 - 45,050 **(2,845.2 - 3,106.9)**
RD-3500	3,395 - 3,710 **(234.1 - 255.9)**	**RD-10000**	9,700 - 10,600 **(669 - 731)**	**RD-23000**	22,310 - 24,380 **(1,538.6 - 1,681.4)**	**RD-45000**	43,650 - 47,700 **(3,010.3 - 3,289.7)**
RD-4000	3,880 - 4,240 **(267.6 - 292.4)**	**RD-11000**	10,670 -11,660 **(735.9 - 804.1)**	**RD-24000**	23,280 - 25,440 **(1,605.5 - 1,754.5)**	**RD-47500**	46,075 - 50,350 **(3,177.6 - 3,472.4)**
RD-4500	4,365 - 4,770 **(301 - 329)**	**RD-12000**	11,640 - 12,720 **(802.8 - 877.2)**	**RD-25000**	24,250 - 26,500 **(1,672.4 - 1,827.6)**	**RD-50000**	48,500 - 53,000 **(3,344.8 - 3,655.2)**
RD-5000	4,850 - 5,300 **(334.5 - 365.5)**	**RD-13000**	12,610 - 13,780 **(869.7 - 950.3)**	**RD-26000**	25,220 - 27,560 **(1,672.4 - 1,827.6)**	**RD-55000**	53,350 - 58,300 **(3,679.3 - 4,020.7)**
RD-5500	5,335 - 5,830 **(367.9 - 402.1)**	**RD-14000**	13,580 - 14,840 **(936.6 - 1023.4)**	**RD-27000**	26,190 - 28,620 **(1,806.2 - 1,973.8)**	**RD-60000**	58,200 - 63,600 **(4,013.8 - 4,386.2)**
RD-6000	5,820 - 6,360 **(401.4 - 438.6)**	**RD-15000**	14,550 - 15,900 **(1,003.4 - 1,096.6)**	**RD-28000**	27,160 - 29,680 **(1,873.1 - 2,046.9)**	**RD-67500**	65,475 - 71,550 **(4,515.5 - 4,934.5)**
RD-6500	6,305 - 6,890 **(434.8 - 475.2)**	**RD-16000**	15,520 - 16,960 **(1,070.3 - 1,169.7)**	**RD-29000**	28,130 - 30,740 **(1,940 - 2,120)**	**RD-70000**	67,900 - 74,200 **(4,682.8 - 5,117.2)**

Rupture Discs are individually packed and marked type plate.



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MAXIMATOR®




Ultra High Pressure Valves, Fittings and Tubing

Pressures to 152,000 psi **(10,500 bar)**

MAXIMATOR has been designing and manufacturing high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliability, backed by one of the best service organizations in the industry.

Ultra High Pressure Valves feature:

- Rising stem design.
- 316SS wetted parts with a 17-4 PH stem provides excellent corrosion resistance.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem and seat life and greater durability for repeated open and close cycles.
- PTFE and carbon packing with metal back-up rings offers reliable stem to body sealing.
- Non-rotating stem prevents stem to seat galling.
- Stem sleeve and packing gland materials have been selected to achieve optimum thread cycle life and reduced handle torque. All stem sleeve threads are rolled, assuring smooth operation.
- Safety weep holes for all pressure connections and packing area.
- Three different valve body patterns, with vee type stem tip.

MAXIMATOR offers a complete line of ultra high pressure valves, fittings and tubing. They come standard with the 5/16" ultra high pressure coned and threaded connection.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

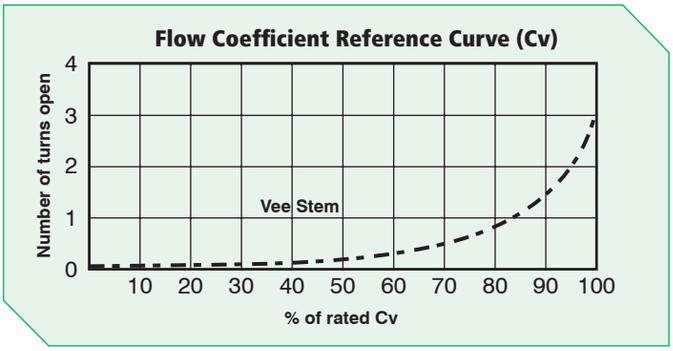
Ultra High Pressure Valves

Pressures to 101,000 psi **(7,000 bar)**

O.D. Size in. **(mm)**	Connection Type	Orifice Size in. **(mm)**	Rated Cv*	Pressure/Temp. Rating psi **(bar)** @ R.T.**
5/16 **(7.94)**	5UF	0.062 **(1.58)**	0.09	101,000 **(10,500)**

* *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.*



Ordering Information

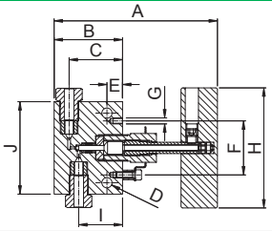
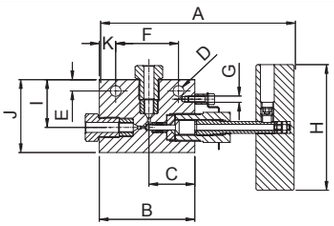
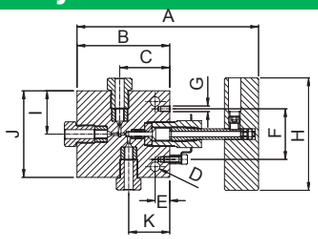
Typical catalog number: **101V5U071**

101V	5U	07	1

Valve Series	O.D. Tube Size	Stem Type	Body Pattern
101V	**5U** – 5/16"	**07** – VEE stem	**1** – two-way straight **2** – two-way angle **3** – three-way, two on pressure

Temperature Ranges

Standard valves are supplied with Teflon/Carbon packing and may be operated to 450°F **(230°C)**. Consult **MAXIMATOR** for higher temperature packing ratings.

Valve Pattern	Catalog Number	Stem type	O.D. Tube in.	Orifice in. **(mm)**	Dimensions in. **(mm)** A	B	C	D	E	F	H	I	J	K	Valve Panel Hole	Block Thickness
2-Way Straight																
	**1015U071**	**Vee**	5/16	0.062 **(1.58)**	5.43 **(137.9)**	2.44 **(62)**	1.75 **(44.5)**	0.33 **(8.4)**	0.51 **(13)**	1.77 **(45)**	3.94 **(100)**	1.44 **(36.6)**	3.03 **(77)**		1.12 **(28.5)**	1.26 **(32)**
2-Way Angle																
	**1015U072**	**Vee**	5/16	0.062 **(1.58)**	6.18 **(157)**	2.99 **(76)**	1.44 **(36.6)**	0.33 **(8.4)**	0.35 **(8.9)**	1.97 **(50)**	3.94 **(100)**	1.50 **(38.1)**	2.28 **(57.9)**	0.51 **(13)**	1.12 **(28.5)**	1.26 **(32)**
3-Way / 2 on Pressure																
	**1015U073**	**Vee**	5/16	0.062 **(1.58)**	6.44 **(163.6)**	3.25 **(82.6)**	1.75 **(44.5)**	0.33 **(8.4)**	0.51 **(13)**	1.77 **(45)**	3.94 **(100)**	1.52 **(38.6)**	3.03 **(77)**	1.44 **(36.6)**	1.12 **(28.5)**	1.26 **(32)**

G - Panel mounting screw size 10-24 UNC.

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.

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Ultra High Pressure Fittings

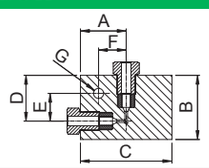
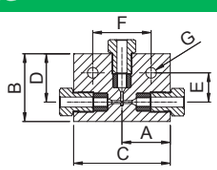
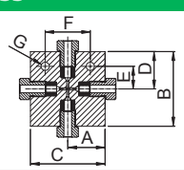
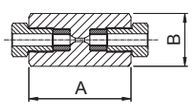
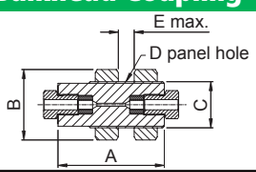
Pressures to 152,000 psi **(10,500 bar)**

MAXIMATOR ultra high pressure fittings are designed to be used with the 101V series ultra high pressure valves and ultra high pressure tubing. All ultra high pressure fittings have coned and threaded type connections and are supplied with glands and collars. Mounting holes are standard on all elbows, tees, and crosses.

Tubing Size	Gland	Collar	Plug	Tubing Cap
5/16	**152G5U**	**152C5U**	**152P5U**	**152TC5U**

Connection Components

All ultra 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) A	B	C	D	E	F	G	Block Thickness
Elbow												
	**152L5U**	5UF	5/16	0.094 **(2.4)**	1.52 **(38.6)**	2.13 **(54.1)**	3.03 **(77)**	1.52 **(38.6)**	0.92 **(23.4)**	0.92 **(23.4)**	0.33 **(8.4)**	1.26 **(32)**
Tee												
	**152T5U**	5UF	5/16	0.094 **(2.4)**	1.52 **(38.6)**	2.13 **(54.1)**	3.03 **(77)**	1.52 **(38.6)**	0.92 **(23.4)**	1.83 **(46.5)**	0.33 **(8.4)**	1.26 **(32)**
Cross												
	**152X5U**	5UF	5/16	0.094 **(2.4)**	1.52 **(38.6)**	3.03 **(77)**	3.03 **(77)**	1.52 **(38.6)**	0.92 **(23.4)**	1.83 **(46.5)**	0.33 **(8.4)**	1.26 **(32)**
Straight Coupling / Union Coupling												
	**152F5U**	5UF	5/16	0.094 **(2.4)**	2.64 **(67.1)**	1.19 **(30.2)**	Straight Coupling					
	152UF5U						Union Coupling					
Bulkhead Coupling												
	**152BF5U**	5UF	5/16	0.094 **(2.4)**	3.27 **(83.1)**	2.17 **(55.1)**	1.42 **(36.1)**	1.43 **(36.3)**	0.87 **(22.1)**			

See page 2 in the Technical Section for pressure/temperature rating chart.

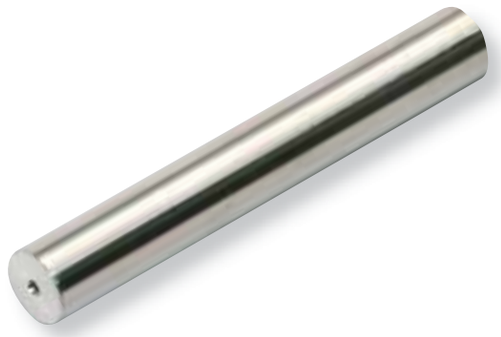
All dimensions for reference only and are subject to change.

MAXIMATOR®

Ultra High Pressure Tubing & Threaded Nipples

Pressures to 152,000 psi **(10,500 bar)**

MAXIMATOR offers a line of cold drawn thick wall tubing, with flow areas to compliment the ultra high pressure valve and fitting line. This tubing is made under strict manufacturing and quality control standards and inspections, with dimensional tolerances to match the requirements of the ultra high pressure coned and threaded connections. The standard material is 316 stainless steel.



Tubing Tolerances

Normal Tubing Size in. **(mm)**	Tolerance O.D. in. **(mm)**
$^{5}/_{16}$ **(7.94)**	0.310 / 0.306 **(7.874 / 7.72)**

Catalog Number	Tube Material	Fits Connection Type	Tube Size in. **(mm)**		Working Pressure psi **(bar)**				
			O.D.	I.D.	-325 to 100°F **(-198°C to 37°C)**	200°F **(93°C)**	400°F **(204°C)**	600°F **(315°C)**	800°F **(426°C)**
152TU5U-316	316SS	5UF	$^{5}/_{16}$ **(7.94)**	0.062 **(1.58)**	152,000 **(10,500)**	136,800 **(9,500)**	126,160 **(8,700)**	115,520 **(8,000)**	109,44 **(7,600)**
152TU5U-HP160	HP160	5UF	$^{5}/_{16}$ **(7.94)**	0.062 **(1.58)**	152,000 **(10,500)**	124,000 **(8,600)**	108,800 **(7,560)**	99,800 **(6,930)**	92,200 **(6,400)**

All dimensions are for reference only and subject to change.

Coned and Threaded Nipples

MAXIMATOR offers a line of coned and threaded ultra high pressure tube nipples in a variety of lengths.

The coned and threaded ultra 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					Fits Connection Type	Tube Size in. **(mm)**		Working Pressure at 100°F psi **(bar)**
4" **(101.6)** Length	6" **(152.4)** Length	8" **(203.2)** Length	10" **(254)** Length	12" **(304.8)** Length		O.D.	I.D.	
152N5U-4-316	**152N5U-6-316**	**152N5U-8-316**	**152N5U-10-316**	**152N5U-12-316**	5UF	$^{5}/_{16}$ **(7.94)**	0.062 **(1.58)**	152,000 **(10,500)**

Standard nipples are not supplied with glands and collars, see Fittings on page 3 for these components.
See the above chart for Pressure/Temperature Rating.
All dimensions are for reference only and subject to change.

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MAXIMATOR®




Valve Actuators

MAXIMATOR air operated valve actuators are piston type design, and are mounted on a standard manual valve to provide remote control capability. There are two air to open actuators available, and selection is based on the valve size, system pressure, and air pressure available.

Valve Actuator features:

- Piston style valve actuator design offers dependable operation and longer actuator cycle life.
- Actuators can be added to standard manual valve bodies to provide remote control capabilities in process applications.
- Two different size actuators are available to cover varying plant air supplies.
- Actuators are made of anodized aluminum, which provides good corrosion resistance.
- Actuators are available in normally open or normally closed configuration.

MAXIMATOR offers a complete line of high pressure valves, fittings and tubing to compliment the valve actuator line.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

Air Valve Actuators
Air to Open, Normally Closed

Ordering Information

Select the basic manual valve from the appropriate pressure section, then add the actuator suffix number to the end of the manual valve catalog number.

Example: 21V4M071**-MNC**, medium duty actuator, normally closed. This valve can be operated at 21,000 psi **(1,500 bar)** with an air supply of 118 psi **(8.1 bar)** to the valve actuator.

Technical Information

Maximum allowable working pressure for actuator — 145 psi **(10 bar)**

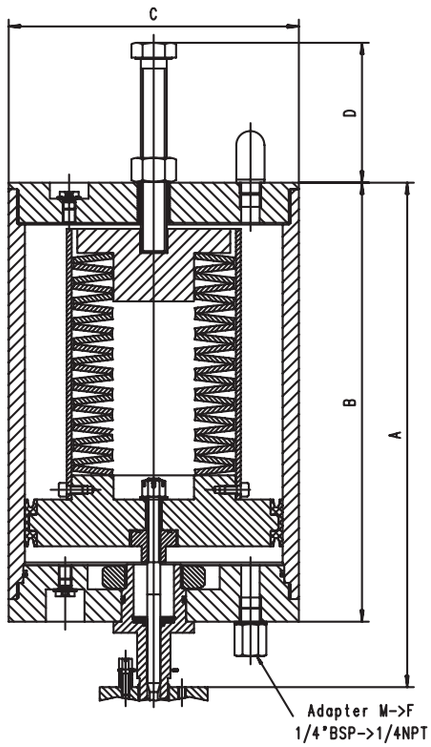
Maximum operation temperature range for actuator — -22°F to +176°F **(-30°C to 80°C)**

Actuator material — Anodized Aluminum

Air connection size: — $^1/_4$" BSP Female **($^1/_4$" NPT Female Adapter)**

Actuator Type	Ordering Suffix	Piston Area in.^{2} **(mm^2)**	A in. **(mm)**	B in. **(mm)**	C in. **(mm)**	D* in. **(mm)**
Light Duty	**-LNC**	12.17 **(7,854)**	11.60 **(294.6)**	10.00 **(254)**	4.72 **(120)**	2.50 **(63.5)**
Medium Duty	**-MNC**	20.57 **(13,273)**	11.60 **(294.6)**	10.00 **(254)**	5.91 **(150)**	2.50 **(63.5)**
Heavy Duty	**-HNC**	31.15 **(20,100)**	13.30 **(337.8)**	10.70 **(271.8)**	7.10 **(180.3)**	2.75 **(69.9)**

** D dimension is an approximation only.*



Valve Series	Air Actuator: Type	Air Actuator: Ordering Suffix	Air Actuator: Data	Air Pressure Regulated to Open Valve At: System Pressure ksi **(bar)** 0-7 (0-480)	10 (700)	12 (830)	14 (970)	16 (1,100)	18 (1,250)	20 (1,400)	21 (1,500)	Max. Pressure psi **(bar)**	Flow Value Cv*
21V4 and 21V6	Light Duty	**-LNC**	Air Pressure psi **(bar)**	130 **(9)**	136 **(9.4)**	141 **(9.7)**	145 **(10)**					14,500 **(1,000)**	0.37 - $^1/_4$" 0.75 - $^3/_8$"
			Spring Pre-compression in. **(mm)**	1.00 **(25.4)**	1.12 **(28.4)**	1.28 **(32.5)**	1.38 **(35.0)**						
			Stem Travel in. **(mm)**	0.33 **(8.4)**									
	Medium Duty	**-MNC**	Air Pressure psi **(bar)**	98 **(6.8)**	102 **(7)**	104 **(7.2)**	107 **(7.4)**	110 **(7.6)**	112 **(7.7)**	116 **(8)**	118 **(8.1)**	21,000 **(1,500)**	
			Spring Pre-compression in. **(mm)**	1.00 **(25.4)**	1.12 **(28.4)**	1.28 **(32.5)**	1.38 **(35.0)**	1.49 **(37.8)**	1.58 **(40.1)**	1.71 **(43.4)**	1.77 **(45)**		
			Stem Travel in. **(mm)**	0.33 **(8.4)**									
	Heavy Duty	**-HNC**	Air Pressure psi **(bar)**	86 **(5.9)**	92 **(6.3)**	94 **(6.5)**	96 **(6.6)**	98 **(6.8)**	100 **(6.9)**	102 **(7)**	103 **(7.1)**	21,000 **(1,500)**	
			Spring Pre-compression in. **(mm)**	0.68 **(17.2)**	0.78 **(19.8)**	0.81 **(20.6)**	0.87 **(22.1)**	0.91 **(23.1)**	0.94 **(23.9)**	1.00 **(25.4)**	1.03 **(26.2)**		
			Stem Travel in. **(mm)**	0.33 **(8.4)**									
21V9	Heavy Duty	**-HNC**	Air Pressure psi **(bar)**	116 **(8)**	130 **(8.9)**	138 **(9.5)**	145 **(10)**					14,500 **(1,000)**	1.75"
			Spring Pre-compression in. **(mm)**	0.47 **(11.3)**	0.94 **(23.9)**	1.44 **(36.6)**	2.00 **(50.8)**						
			Stem Travel in. **(mm)**	0.50 **(12.7)**									

* Cv value is for straight pattern vee stem valves. Increase this value by 50% for angle pattern valves.
Cv Values vary due to compression of actuator spring, adjusted based on system pressure.
Values shown are for maximum stem travel.

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Valve Series	Air Actuator			Air Pressure Regulated to Open Valve At: System Pressure ksi (bar)								Max. Pressure psi (bar)	Flow Value Cv*
	Type	Ordering Suffix	Data	0-7 (0-480)	10 (700)	15 (1,050)	20 (1,400)	25 (1,800)	30 (2,000)	35 (2,400)	36 (2,500)		
36V	Light Duty	-LNC	Air Pressure psi (bar)	116 (8)	125 (8.6)	133 (9.2)	145 (10)					20,000 (1,400)	0.12 - 1/4" 0.23 - 3/8" 0.33 - 9/16
			Spring Pre-compression in. (mm)	0.94 (23.9)	1.03 (26.2)	1.28 (32.5)	1.44 (36.6)						
			Stem Travel in. (mm)	0.15 (3.8)									
	Medium Duty	-MNC	Air Pressure psi (bar)	93 (6.4)	96 (6.6)	103 (7.1)	108 (7.4)	113 (7.8)	116 (8)			29,000 (2,000)	
			Spring Pre-compression in. (mm)	0.94 (23.9)	1.03 (26.2)	1.28 (32.5)	1.44 (36.6)	1.58 (40.1)	1.73 (43.9)				
			Stem Travel in. (mm)	0.15 (3.8)									
	Heavy Duty	-HNC	Air Pressure psi (bar)	74 (5.1)	76 (5.2)	81 (5.6)	86 (6)	91 (6.3)	96 (6.6)	101 (7)	102 (7)	36,000 (2,500)	
			Spring Pre-compression in. (mm)	0.75 (19.1)	0.81 (20.6)	0.88 (22.4)	0.94 (23.9)	1.03 (26.2)	1.12 (28.4)	1.19 (30.2)	1.25 (31.7)		
			Stem Travel in. (mm)	0.15 (3.8)									
				0-7 (0-480)	10 (700)	20 (1,400)	30 (2,000)	40 (2,800)	50 (3,500)	60 (4,100)	65 (4,500)		
65V	Light Duty	-LNC	Air Pressure psi (bar)	102 (7)	110 (7.6)	122 (8.4)	131 (9)	145 (10)				40,000 (2,800)	0.08 - 1/4" 0.09 - 3/8" 0.14 - 9/16
			Spring Pre-compression in. (mm)	0.75 (19.1)	0.84 (21.3)	1.06 (26.9)	1.25 (31.7)	1.44 (36.6)					
			Stem Travel in. (mm)	0.37 (9.4)									
	Medium Duty	-MNC	Air Pressure psi (bar)	81 (5.6)	84 (5.8)	97 (6.7)	100 (6.9)	110 (7.6)	118 (8.1)			50,000 (3,500)	
			Spring Pre-compression in. (mm)	0.75 (19.1)	0.84 (21.3)	1.06 (26.9)	1.25 (31.7)	1.44 (36.6)	1.63 (41.4)				
			Stem Travel in. (mm)	0.37 (9.4)									
	Heavy Duty	-HNC	Air Pressure psi (bar)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	85 (5.9)	90 (6.2)	95 (6.6)	97 (6.7)	65,000 (4,500)	
			Spring Pre-compression in. (mm)	0.53 (13.5)	0.56 (14.2)	0.63 (16)	0.81 (20.6)	0.94 (23.9)	0.97 (24.6)	1.00 (25.4)	1.03 (26.2)		
			Stem Travel in. (mm)	0.37 (9.4)									
				0-7 (0-480)	15 (1,050)	30 (2,000)	45 (3,100)	60 (4,100)	75 (5,200)	90 (6,200)	101 (7,000)		
101V	Light Duty	-LNC	Air Pressure psi (bar)	72 (5)	87 (6)	109 (7.5)	123 (8.5)	145 (10)				60,000 (4,100)	0.08
			Spring Pre-compression in. (mm)	0.88 (22.4)	0.94 (23.9)	1.31 (33.3)	1.55 (39.4)	1.88 (47.8)					
			Stem Travel in. (mm)	0.28 (7.1)									
	Medium Duty	-MNC	Air Pressure psi (bar)	84 (5.8)	90 (6.2)	102 (7)	114 (7.9)	126 (8.7)				60,000 (4,100)	
			Spring Pre-compression in. (mm)	0.88 (22.4)	0.94 (23.9)	1.31 (33.3)	1.55 (39.4)	1.88 (47.8)					
			Stem Travel in. (mm)	0.28 (7.1)									
	Heavy Duty	-HNC	Air Pressure psi (bar)	60 (4.1)	66 (4.6)	76 (5.2)	86 (5.9)	96 (6.6)	106 (7.3)	116 (8)	122 (8.4)	101,000 (7,000)	
			Spring Pre-compression in. (mm)	0.56 (14.2)	0.63 (16)	0.78 (19.8)	0.88 (22.4)	1.03 (26.2)	1.15 (29.2)	1.28 (32.5)	1.38 (35.1)		
			Stem Travel in. (mm)	0.28 (7.1)									

* Cv value is for straight pattern vee stem valves. Increase this value by 50% for angle pattern valves.
Cv Values vary due to compression of actuator spring, adjusted based on system pressure.
Values shown are for maximum stem travel.

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.

MAXIMATOR®

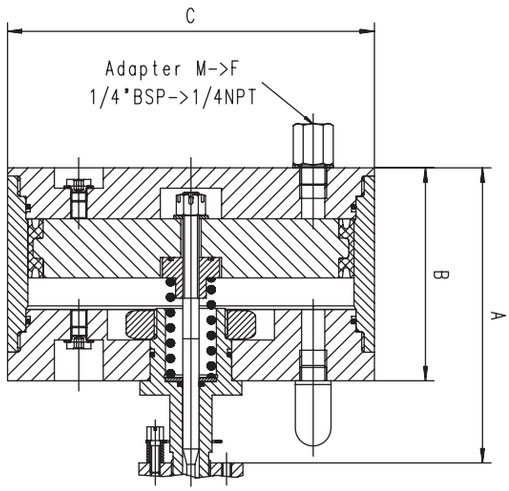
Air Valve Actuators

Air to Close, Normally Open

Ordering Information

Select the basic manual valve from the appropriate pressure section, then add the actuator suffix number to the end of the manual valve catalog number.

Example: 21V4M071**-MNO**, medium duty actuator, normally open. This valve can be operated at 21,000 psi **(1,500 bar)** with an air supply of 106 psi **(7.3 bar)** to the valve actuator.



Technical Information

Maximum allowable working pressure for actuator	145 psi **(10 bar)**
Maximum operation temperature range for actuator	-22°F to +176°F **(-30°C to +80°C)**
Actuator material	Anodized Aluminum
Air connection size:	$^1/_4$" BSP Female **($^1/_4$" NPT Female Adapter)**

Actuator Type	Ordering Suffix	Piston Area in.^{2} **(mm^2)**	A in. **(mm)**	B in. **(mm)**	C in. **(mm)**
Light Duty	**-LNO**	12.17 **(7,854)**	5.70 **(145)**	4.10 **(104.1)**	4.72 **(120)**
Medium Duty	**-MNO**	20.57 **(13,273)**	5.70 **(145)**	4.10 **(104.1)**	5.91 **(150)**
Heavy Duty	**-HNO**	31.15 **(20,100)**	5.70 **(145)**	4.10 **(104.1)**	7.10 **(180.3)**

Valve Series	Air Actuator		Air Pressure Regulated to Close Valve At: System Pressure ksi **(bar)**								Max. Pressure psi **(bar)**	Stem Travel in. **(mm)**	Flow Value Cv*
	Type	Ordering Suffix	0-7 **(0-480)**	10 **(700)**	12 **(830)**	14 **(970)**	16 **(1,100)**	18 **(1,250)**	20 **(1,400)**	21 **(1,500)**			
21V4 and 21V6	Light Duty	**-LNO**	87 **(6)**	99 **(6.8)**	104 **(7.2)**	115 **(7.9)**	117 **(8.1)**	130 **(9)**	142 **(9.8)**	145 **(10)**	21,000 **(1,500)**	0,33 **(8.4)**	0.31 - $^1/_4$" 0.75 - $^3/_8$"
	Medium Duty	**-MNO**	72 **(5)**	79 **(5.4)**	83 **(5.7)**	88 **(6.1)**	93 **(6.4)**	98 **(6.8)**	103 **(7.1)**	106 **(7.3)**	21,000 **(1,500)**	0,33 **(8.4)**	
	Heavy Duty	**-HNO**	52 **(3.6)**	56 **(3.9)**	59 **(4.1)**	62 **(4.3)**	65 **(4.5)**	68 **(4.7)**	71 **(4.9)**	75 **(5.2)**	21,000 **(1,500)**	0,33 **(8.4)**	
21V9	Heavy Duty	**-HNO**	88 **(6.1)**	100 **(6.9)**	108 **(7.4)**	116 **(8)**	124 **(8.5)**	132 **(9.1)**	140 **(9.7)**	146 **(10)**	21,000 **(1,500)**	0.50 **(12.7)**	1.75

* Cv value is for straight pattern vee stem valves. Increase this value by 50% for angle pattern valves.

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Valve Series	Air Actuator		Air Pressure Regulated to Close Valve At: System Pressure ksi **(bar)**								Max. Pressure psi **(bar)**	Stem Travel in **(mm)**	Flow Value Cv*
	Type	Ordering Suffix	0-7 **(0-480)**	10 **(700)**	15 **(1,050)**	20 **(1,400)**	25 **(1,800)**	30 **(2,000)**	35 **(2,400)**	36 **(2,500)**			
36V	Light Duty	**-LNO**	73 **(5)**	78 **(5.4)**	91 **(6.3)**	106 **(7.3)**	119 **(8.2)**	128 **(8.8)**	142 **(9.8)**	145 **(10)**	36,000 **(2,500)**	0.15 **(3.8)**	0.12 - 1/4" 0.23 - 3/8" 0.33 - 9/16"
	Medium Duty	**-MNO**	65 **(4.5)**	69 **(4.8)**	76 **(5.2)**	83 **(5.7)**	90 **(6.2)**	99 **(6.8)**	106 **(7.3)**	108 **(7.4)**	36,000 **(2,500)**	0.15 **(3.8)**	
	Heavy Duty	**-HNO**	44 **(3.1)**	50 **(3.4)**	56 **(3.9)**	63 **(4.3)**	70 **(4.8)**	77 **(5.3)**	84 **(5.8)**	86 **(5.9)**	36,000 **(2,500)**	0.15 **(3.8)**	
			0-7 **(0-480)**	10 **(700)**	20 **(1,400)**	30 **(2,000)**	40 **(2,800)**	50 **(3,500)**	60 **(4,100)**	65 **(4,500)**			
65V	Light Duty	**-LNO**	58 **(4)**	70 **(4.8)**	77 **(5.3)**	91 **(6.3)**	106 **(7.3)**	123 **(8.5)**	133 **(9.2)**	145 **(10)**	65,000 **(4,500)**	0.37 **(9.4)**	0.08 - 1/4" 0.09 - 3/8" 0.14 - 9/16"
	Medium Duty	**-MNO**	55 **(3.8)**	57 **(3.9)**	66 **(4.5)**	76 **(5.2)**	85 **(5.9)**	93 **(6.4)**	102 **(7)**	107 **(7.4)**	65,000 **(4,500)**	0.37 **(9.4)**	
	Heavy Duty	**-HNO**	30 **(2.1)**	32 **(2.2)**	42 **(2.9)**	52 **(3.6)**	62 **(4.3)**	72 **(5)**	82 **(5.7)**	86 **(5.9)**	65,000 **(4,500)**	0.37 **(9.4)**	
			0-7 **(0-480)**	15 **(1,050)**	30 **(2,000)**	45 **(3,100)**	60 **(4,100)**	75 **(5,200)**	90 **(6,200)**	101 **(7,000)**			
101V	Light Duty	**-LNO**	65 **(4.5)**	87 **(6)**	106 **(7.3)**	131 **(9)**					45,000 **(3,100)**	0.28 **(7.1)**	0.08
	Medium Duty	**-MNO**	61 **(4.2)**	73 **(5.0)**	89 **(6.1)**	96 **(6.6)**	108 **(7.4)**	119 **(8.2)**	131 **(9)**	140 **(9.7)**	101,000 **(7,000)**	0.28 **(7.1)**	
	Heavy Duty	**-HNO**	40 **(2.8)**	45 **(3.1)**	55 **(3.8)**	65 **(4.5)**	75 **(5.2)**	85 **(5.9)**	95 **(6.6)**	102 **(7)**	101,000 **(7,000)**	0.28 **(7.1)**	

* Cv value is for straight pattern vee stem valves. Increase this value by 50% for angle pattern valves.

MAXIMATOR®




Ball Valves

Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR ball valves provide superior quality and performance with a variety of valve styles and process connections. All medium and high pressure connections are supplied with glands and collars.

Ball Valves feature:

- One-piece, trunnion mounted style stem design eliminates shear failure found in two-piece stem designs.
- Choice of 3/16" and 1/4" ball orifices provides minimal pressure drops.
- Re-torqueable seat glands for longer seat life and dependability.
- Torlon Ball Seat material offers excellent sealing capabilities.
- 316 cold worked stainless steel body, and 17-4 PH stem offers excellent corrosion resistance.
- Ball valves are available in 90° and 180° open to close with a positive stop.
- Available with Pneumatic or Electric actuators.
- Available in medium, high and FNPT pressure connections.
- Full materials traceability.
- Safety weep holes for all pressure connections and packing area.

MAXIMATOR offers a complete line of high pressure components to compliment the 2-way and 3-way Ball Valve line.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

2-Way Ball Valves - 1/4" Orifice

Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR 2-Way Ball Valves have 1/4" orifices and are capable of safe handling of liquids and gases up to 21,000 psi **(1,500 bar)** pressure. Their 90˚ handle rotation allows for full flow capabilities with minimal pressure drop. Robust one-piece trunnion style stem design eliminates shear failure that is found in a two-piece stem design. Ball seats are made of Torlon material providing excellent sealing capabilities with low handle operating torque. Re-torqueable seat glands provide longer valve life and dependability. Standard valves are supplied with Viton O-Rings rated to 300˚F **(150°C)**.

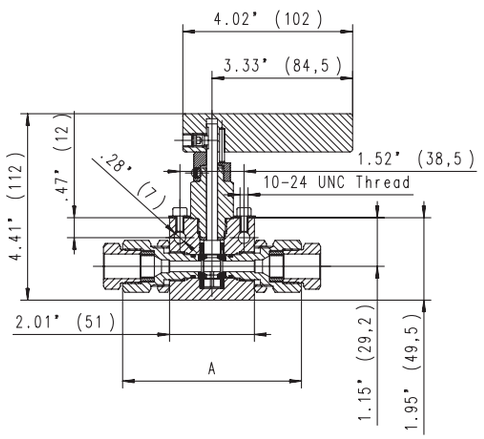
Ordering Information

Typical catalog number: **21B244M**

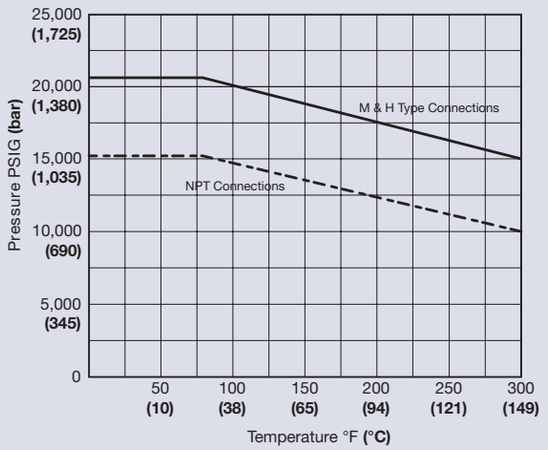
21	B2	4	4M	-

Pressure (x 1000 psi)	Valve Series	Orifice Diameter	Connection Type	Options
15 = 15,200 psi **(1,050 bar)** **21** = 21,000 psi **(1,500 bar)**	**B2** = Ball Valve 2-way	**4** = 1/4	**See chart below**	See Ball Valve Actuators (page 4 & 5)

Manually Operated 2-Way Ball Valve



Pressure Temperature Ratings



Catalog Number	Pressure Rating @ RT psi. (bar)	O.D Tubing Size in.	Connection Type	Orifice Size in. (mm)	Cv	Dimension A in. (mm)	Valve Panel Hole in. (mm)	Block Thickness in. (mm)
21B244M	21,000 **(1,500)**	1/4	4MF	0.109 **(2.8)**	0.31	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
21B246M	21,000 **(1,500)**	3/8	6MF	0.203 **(5.2)**	1.70	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
21B249M	21,000 **(1,500)**	9/16	9MF	0.250 **(6.4)**	2.70	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
21B244H	21,000 **(1,500)**	1/4	4HF	0.094 **(2.4)**	0.20	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
21B246H	21,000 **(1,500)**	3/8	6HF	0.125 **(3.2)**	0.45	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
21B249H	21,000 **(1,500)**	9/16	9HF	0.188 **(4.8)**	1.45	4.84 **(123)**	1.03 **(26.2)**	1.38 **(35.1)**
15B242P	15,200 **(1,050)**	1/8	FNPT	0.250 **(6.4)**	2.70	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
15B244P	15,200 **(1,050)**	1/4	FNPT	0.250 **(6.4)**	2.70	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
15B246P	15,200 **(1,050)**	3/8	FNPT	0.250 **(6.4)**	2.70	4.21 **(107)**	1.03 **(26.2)**	1.00 **(25.4)**
15B248P	15,200 **(1,050)**	1/2	FNPT	0.250 **(6.4)**	2.70	4.84 **(123)**	1.03 **(26.2)**	1.38 **(35.1)**

Caution: Ball valves are not recommended for small molecular gases (Hydrogen, Helium).

All dimensions are for reference only and subject to change.

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3-Way Ball Valves - 3/16" Orifice

Pressures to 21,000 psi **(1,500 bar)**

MAXIMATOR 3-Way Ball Valves have 3/16" orifices and are capable of safe handling of liquids and gases up to 21,000 psi **(1,500 bar)** pressure. Robust one-piece trunnion style stem design eliminates shear failure that is found in a two-piece stem design. There are two styles in the 3-way design:

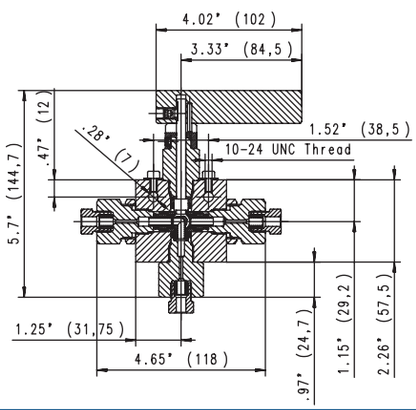
- The 180˚ rotating Switching Ball Valve is designed to have fluid enter in through the bottom connection and can be switched to either side connection. Also, the valve can be closed in the center "Off" position.
- The 90˚ rotating Diverting Ball Valve is designed to have fluid enter in through the bottom connection and can be diverted to either side connection. There is no center off position in the diverting design.

Ordering Information

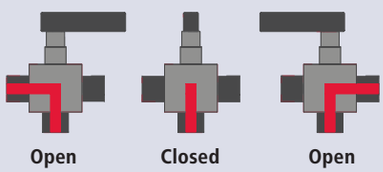
Typical catalog number: **21B3S34M**

21	B3S	3	4M	-
Pressure (x 1000 psi)	**Valve Series**	**Orifice Diam-**	**Connec-tion**	**Options**
15 = 15,200 psi **(1,050 bar)** **21** = 21,000 psi **(1,500 bar)**	**B3S** = 180°Switching **B3D** = 90°Diverting	**3** = 3/16	**See chart below**	See Ball Valve Actuators (page 4 & 5)

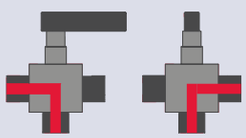
Manual 3-Way Ball Valve



3-Way, 180° Switching Style



3-Way, 90° Diverting Style



Catalog Number		Pressure Rating @ RT psi. **(bar)***	O.D Tubing Size in.	Connection Type	Orifice Size in. **(mm)**	Cv	Valve Panel Hole in. **(mm)**	Block Thickness in. **(mm)**
3-Way 180° Switching	3-Way 90° Diverting							
21B3S34M	**21B3D34M**	21,000 **(1,500)**	1/4	4MF	0.109 **(2.8)**	0.15	1.03 **(26.2)**	1.00 **(25.4)**
21B3S36M	**21B3D36M**	21,000 **(1,500)**	3/8	6MF	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
21B3S39M	**21B3D39M**	21,000 **(1,500)**	9/16	9MF	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
21B3S34H	**21B3D34H**	21,000 **(1,500)**	1/4	4HF	0.094 **(2.4)**	0.10	1.03 **(26.2)**	1.00 **(25.4)**
21B3S36H	**21B3D36H**	21,000 **(1,500)**	3/8	6HF	0.125 **(3.2)**	0.22	1.03 **(26.2)**	1.00 **(25.4)**
21B3S39H	**21B3D39H**	21,000 **(1,500)**	9/16	9HF	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
15B3S32P	**15B3D32P**	15,200 **(1,050)**	1/8	FNPT	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
15B3S34P	**15B3D34P**	15,200 **(1,050)**	1/4	FNPT	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
15B3S36P	**15B3D36P**	15,200 **(1,050)**	3/8	FNPT	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**
15B3S38P	**15B3D38P**	15,200 **(1,050)**	1/2	FNPT	0.188 **(4.8)**	0.71	1.03 **(26.2)**	1.00 **(25.4)**

** Maximum side connection inlet pressure is 15,000 psig.*

Caution: Ball valves are not recommended for small molecular gases (Hydrogen, Helium).

See page 2 for pressure/temperature rating chart.

All dimensions are for reference only and subject to change.

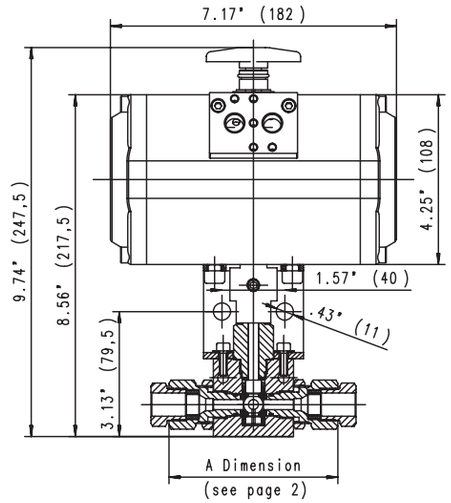
All technical and dimensional information subject to change. All general Terms and Conditions of sale, including limitations of our liability, apply to all products and services sold.

MAXIMATOR®

Ball Valve Actuators

Pneumatic Actuators

Air Operated 2-Way Ball Valve



Pneumatic Actuator Features

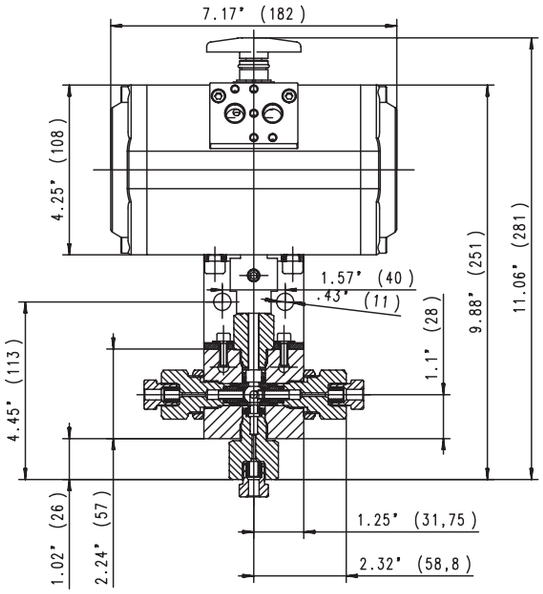
- Pneumatic actuators are designed to be used with 2-way & 3-way style ball valves for remote operation.
- Two styles available:
  Double acting: (air to open / air to close)
  Single acting: (air to open / spring to close)
- Optional limit switches with visual indication available.
- Actuators are anodized aluminum, which provides good corrosion resistance. Stainless steel material is available upon request.
- Maximum operating air pressure is 145 psi **(10 bar)**.
- Inlet air supply connection is 1/8" FNPT
- Actuator operating temperature:
  -4˚F to 203˚F **(-20°C to 95°C)**.
- Minimal required air pressure is 80 psi **(5.5 bar)**.
- Opening & closing time is less than one second.

Ordering Information

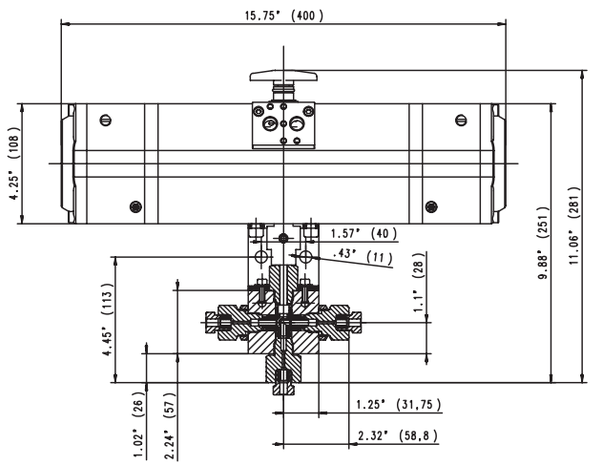
Simply add suffix to the manual ball valve catalog number:

- **DA** (Double Acting Air Actuators)
- **SA** (Single Acting Air Actuators)

Air Operated 3-Way Ball Valve, 90° Diverter Style



Air Operated 3-Way Ball Valve, 180° Switching Style



(Available in double acting only)

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

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Electric Actuator Features

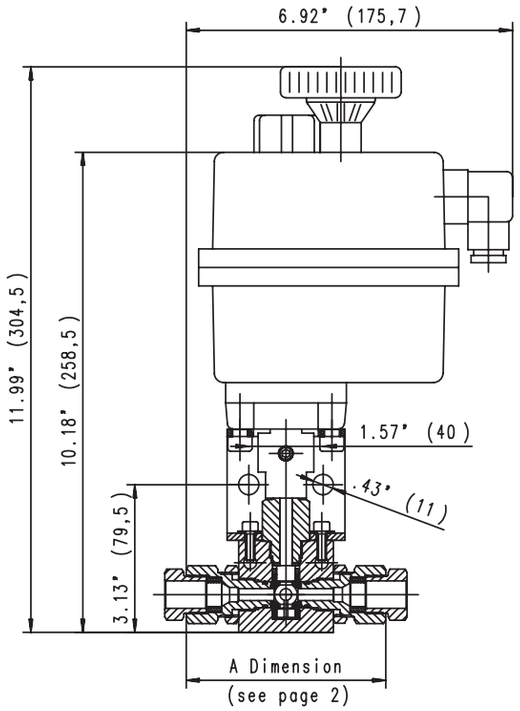
- Electric actuators are designed to be used with 2-way & 3-way style ball valves for remote operation.
- Actuators will accept a wide range of single phase input voltages from 12 to 240 volts DC or AC current.
- Optional limit switches with visual indication available.
- Manual override option is standard.
- Actuators are made with polyamide material, which provides good corrosion resistance.
- Actuator operating temperature:
  -0˚F to 160˚F **(-18°C to 70°C)**.
- Opening & closing time is less than ten seconds with 90° actuators.

Ordering Information

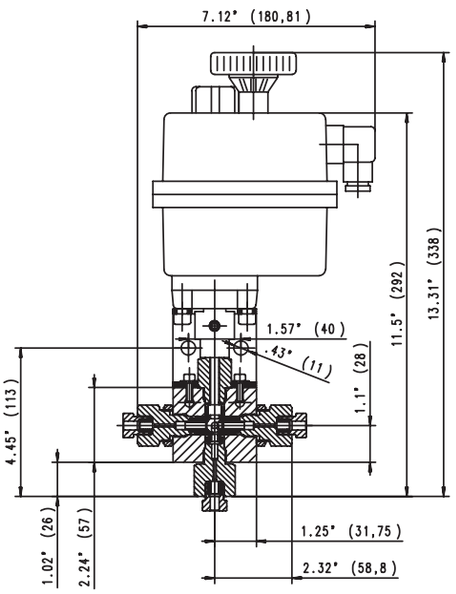
Simply add suffix to the manual ball valve catalog number:

- **EL** = Electric Actuator, lower voltage, (12 - 48 Volts AC or DC)
- **EH** = Electric Actuator, higher voltage, (80 - 240 Volts AC or DC)

Electrically Operated 2-Way Ball Valve



Electrically Operated 3-Way Ball Valve



All dimensions are for reference only and are subject to change

MAXIMATOR®




Adapters and Couplings

Pressures to 152,000 psi **(10,500 bar)**

MAXIMATOR designs and manufactures a wide variety of adapters and couplings in an array of styles and sizes. The adapters in this section are considered standard and readily available. Other materials and configurations are available upon request.

Adapters, Couplings & Accessories feature:

- Adapters & Couplings are 316 cold worked stainless steel material.
- Traceability is ensured by component laser etching, and through extensive documentation which includes: part number, pressure, material batch numbers, and connection type.
- Adapters are available in one or two-piece designs.
- Safety weep holes come standard on all pressure connections.
- All medium, high and ultra high pressure Adapters and Couplings come complete with glands and collars.

MAXIMATOR offers a complete line of standard high pressure adapters and couplings to compliment our valve line. Special design adapters and materials are available upon request.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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Adapters and Couplings
Adapters (male to female)

Adapters (male to female)

MAXIMATOR male to female adapters allow the joining of male to female connections. The two connections can be a variety of tube or pipe connection types, with different size combinations possible. All adapters are made of 316 cold worked stainless steel material; other materials are available upon request. Glands and collars are included with each female tube connection.

Instructions

Find the male connection you want on the adapter in the "A" column and the female connection of the adapter in the "B" column. At the intersection of the two columns is the appropriate catalog number.

Pressure Series	Male Connection "A"			Female Connection "B"				
	Tube Size in.	Connection Type	Maximum Pressure psi **(bar)***	Female Medium Pressure 21,000 psi **(1,500 bar)**				
				1/4" 4MF	3/8" 6MF	9/16" 9MF	3/4" 12MF	1" 16MF
Male Medium	1/4	4MM	21,000 **(1,500)**		21A4M6M	21A4M9M	21A4M12M	21A4M16M
	3/8	6MM	21,000 **(1,500)**	21A6M4M		21A6M9M	21A6M12M	21A6M16M
	9/16	9MM	21,000 **(1,500)**	21A9M4M	21A9M6M		21A9M12M	21A9M16M
	3/4	12MM	21,000 **(1,500)**	21A12M4M	21A12M6M	21A12M9M		21A12M16M
	1	16MM	21,000 **(1,500)**	21A16M4M	21A16M6M	21A16M9M	21A16M12M	
Male High	1/4	4HM	65,000 **(4,500)**	21A4H4M	21A4H6M	21A4H9M	21A4H12M	21A4H16M
	3/8	6HM	65,000 **(4,500)**	21A6H4M	21A6H6M	21A6H9M	21A6H12M	21A6H16M
	9/16	9HM	65,000 **(4,500)**	21A9H4M	21A9H6M	21A9H9M	21A9H12M	21A9H16M
Male Ultra High	5/16	5UM	152,000 **(10,500)**	21A5U4M	21A5U6M	21A5U9M	21A5U12M	21A5U16M
Male Pipe	1/8	MNPT	15,200 **(1,050)**	15A2P4M	15A2P6M	15A2P9M	15A2P12M	15A2P16M
	1/4	MNPT	15,200 **(1,050)**	15A4P4M	15A4P6M	15A4P9M	15A4P12M	15A4P16M
	3/8	MNPT	15,200 **(1,050)**	15A6P4M	15A6P6M	15A6P9M	15A6P12M	15A6P16M
	1/2	MNPT	15,200 **(1,050)**	15A8P4M	15A8P6M	15A8P9M	15A8P12M	15A8P16M
	3/4	MNPT	15,200 **(1,050)**	15A12P4M	15A12P6M	15A12P9M	15A12P12M	15A12P16M
	1	MNPT	15,200 **(1,050)**	15A16P4M	15A16P6M	15A16P9M	15A16P12M	15A16P16M
Male British Standard Pipe	1/8	MBSP	15,200 **(1,050)**	15A2B4M	15A2B6M	15A2B9M	15A2B12M	15A2B16M
	1/4	MBSP	15,200 **(1,050)**	15A4B4M	15A4B6M	15A4B9M	15A4B12M	15A4B16M
	3/8	MBSP	15,200 **(1,050)**	15A6B4M	15A6B6M	15A6B9M	15A6B12M	15A6B16M
	1/2	MBSP	15,200 **(1,050)**	15A8B4M	15A8B6M	15A8B9M	15A8B12M	15A8B16M
	3/4	MBSP	15,200 **(1,050)**	15A12B4M	15A12B6M	15A12B9M	15A12B12M	15A12B16M
	1	MBSP	15,200 **(1,050)**	15A16B4M	15A16B6M	15A16B9M	15A16B12M	15A16B16M

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting. Note: All Maximator adapters come standard in the "one-piece" design style. Adapters with the two piece design are avaiable by adding a suffix -2P after the part numbers listed above. Both designs are identical in length, and are interchangeable with each other.*

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Female Connection "B"											Female British Standard Pipe 15,200 psi **(1,050 bar)**					
Female High Pressure 65,000 psi (4,500 bar)			Female Ultra-High Pressure 152,000 psi **(10,500 bar)**	Female Pipe 15,200 psi **(1,050 bar)**												
1/4" 4HF	3/8" 6HF	9/16" 9HF	5/16" 5UF	1/8" FNPT	1/4" FNPT	3/8" FNPT	1/2" FNPT	3/4" FNPT	1" FNPT		1/8" FBSP	1/4" FBSP	3/8" FBSP	1/2" FBSP	3/4" FBSP	1" FBSP
21A4M4H	**21A4M6H**	**21A4M9H**	**21A4M5U**	**15A4M2P**	**15A4M4P**	**15A4M6P**	**15A4M8P**	**15A4M12P**	**15A4M16P**		**15A4M2B**	**15A4M4B**	**15A4M6B**	**15A4M8B**	**15A4M12B**	**15A4M16B**
21A6M4H	**21A6M6H**	**21A6M9H**	**21A6M5U**	**15A6M2P**	**15A6M4P**	**15A6M6P**	**15A6M8P**	**15A6M12P**	**15A6M16P**		**15A6M2B**	**15A6M4B**	**15A6M6B**	**15A6M8B**	**15A6M12B**	**15A6M16B**
21A9M4H	**21A9M6H**	**21A9M9H**	**21A9M5U**	**15A9M2P**	**15A9M4P**	**15A9M6P**	**15A9M8P**	**15A9M12P**	**15A9M16P**		**15A9M2B**	**15A9M4B**	**15A9M6B**	**15A9M8B**	**15A9M12B**	**15A9M16B**
21A12M4H	**21A12M6H**	**21A12M9H**	**21A12M5U**	**15A12M2P**	**15A12M4P**	**15A12M6P**	**15A12M8P**	**15A12M12P**	**15A12M16P**		**15A12M2B**	**15A12M4B**	**15A12M6B**	**15A12M8B**	**15A12M12B**	**15A12M16B**
21A16M4H	**21A16M6H**	**21A16M9H**	**21A16M5U**	**15A16M2P**	**15A16M4P**	**15A16M6P**	**15A16M8P**	**15A16M12P**	**15A16M16P**		**15A16M2B**	**15A16M4B**	**15A16M6B**	**15A16M8B**	**15A16M12B**	**15A16M16B**
	65A4H6H	**65A4H9H**	**65A4H5U**	**15A4H2P**	**15A4H4P**	**15A4H6P**	**15A4H8P**	**15A4H12P**	**15A4H16P**		**15A4H2B**	**15A4H4B**	**15A4H6B**	**15A4H8B**	**15A4H12B**	**15A4H16B**
65A6H4H		**65A6H9H**	**65A6H5U**	**15A6H2P**	**15A6H4P**	**15A6H6P**	**15A6H8P**	**15A6H12P**	**15A6H16P**		**15A6H2B**	**15A6H4B**	**15A6H6B**	**15A6H8B**	**15A6H12B**	**15A6H16B**
65A9H4H	**65A9H6H**		**65A9H5U**	**15A9H2P**	**15A9H4P**	**15A9H6P**	**15A9H8P**	**15A9H12P**	**15A9H16P**		**15A9H2B**	**15A9H4B**	**15A9H6B**	**15A9H8B**	**15A9H12B**	**15A9H16B**
65A5U4H	**65A5U6H**	**65A5U9H**		**15A5U2P**	**15A5U4P**	**15A5U6P**	**15A5U8P**	**15A5U12P**	**15A5U16P**		**15A5U2B**	**15A5U4B**	**15A5U6B**	**15A5U8B**	**15A5U12B**	**15A5U16B**
15A2P4H	**15A2P6H**	**15A2P9H**	**15A2P5U**													
15A4P4H	**15A4P6H**	**15A4P9H**	**15A4P5U**													
15A6P4H	**15A6P6H**	**15A6P9H**	**15A6P5U**													
15A8P4H	**15A8P6H**	**15A8P9H**	**15A8P5U**													
15A12P4H	**15A12P6H**	**15A12P9H**	**15A12P5U**													
15A16P4H	**15A16P6H**	**15A16P9H**	**15A16P5U**													
15A2B4H	**15A2B6H**	**15A2B9H**	**15A2B5U**													
15A4B4H	**15A4B6H**	**15A4B9H**	**15A4B5U**													
15A6B4H	**15A6B6H**	**15A6B9H**	**15A6B5U**													
15A8B4H	**15A8B6H**	**15A8B9H**	**15A8B5U**													
15A12B4H	**15A12B6H**	**15A12B9H**	**15A12B5U**													
15A16B4H	**15A16B6H**	**15A16B9H**	**15A16B5U**													

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting.*

MAXIMATOR®
Adapters and Couplings
Couplings and Adapters

Couplings (female to female)

MAXIMATOR couplings are female to female fittings that allow the joining of two different sizes and/or types of connections for a variety of size combinations. All couplings and adapters are made of 316 cold worked stainless steel material; other materials are available upon request. Glands and collars are included with each female tube connection.

Instructions

Find the first connection you want in the "A" column and the other connection in the "B" column. At the intersection of the two columns is the appropriate catalog number.

Pressure Series	Female Connection "A"			Female Connection "B"					
	Tube Size in.	Connection Type	Maximum Pressure psi **(bar)***	Female Medium Pressure 21,000 psi **(1,500 bar)**					
				1/4" 4MF	3/8" 6MF	9/16" 9MF	3/4" 12MF	1" 16MF	
Female Medium	1/4	4MF	21,000 **(1,500)**	**21F4M**	**21F4M6M**	**21F4M9M**	**21F4M12M**	**21F4M16M**	
	3/8	6MF	21,000 **(1,500)**		**21F6M**	**21F6M9M**	**21F6M12M**	**21F6M16M**	
	9/16	9MF	21,000 **(1,500)**			**21F9M**	**21F9M12M**	**21F9M16M**	
	3/4	12MF	21,000 **(1,500)**				**21F12M**	**21F12M16M**	
	1	16MF	21,000 **(1,500)**					**21F16M**	
Female High	1/4	4HF	65,000 **(4,500)**						
	3/8	6HF	65,000 **(4,500)**						
	9/16	9HF	65,000 **(4,500)**						
Female Ultra High	5/16	5UF	152,000 **(10,500)**						

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting.*

Adapters (male to male)

MAXIMATOR male to male adapters allow the joining of two different sizes and/or types of tube or pipe female connections.

Pressure Series	Male Connection "A"			Male Connection "B"					
	Tube Size in.	Connection Type	Maximum Pressure psi **(bar)***	Male Medium Pressure 21,000 psi **(1,500 bar)**					
				1/4" 4MM	3/8" 6MM	9/16" 9MM	3/4" 12MM	1" 16MM	
Male Medium	1/4	4MM	21,000 **(1,500)**	**21M4M**	**21M4M6M**	**21M4M9M**	**21M4M12M**	**21M4M16M**	
	3/8	6MM	21,000 **(1,500)**		**21M6M**	**21M6M9M**	**21M6M12M**	**21M6M16M**	
	9/16	9MM	21,000 **(1,500)**			**21M9M**	**21M9M12M**	**21M9M16M**	
	3/4	12MM	21,000 **(1,500)**				**21M12M**	**21M12M16M**	
	1	16MM	21,000 **(1,500)**					**21M16M**	
Male High	1/4	4HM	65,000 **(4,500)**						
	3/8	6HM	65,000 **(4,500)**						
	9/16	9HM	65,000 **(4,500)**						
Male Ultra High	5/16	5UM	152,000 **(10,500)**						

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting.*

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	Female Connection "B"																	
	Female High Pressure 65,000 psi **(4,500 bar)**			Female Ultra High Pressure 152,000 psi **(10,500 bar)**	Female Pipe 15,200 psi **(1,050 bar)**							Female British Standard Pipe 15,200 psi **(1,050 bar)**					
	1/4" 4HF	3/8" 6HF	9/16" 9HF	5/16" 5UF	1/8" FNPT	1/4" FNPT	3/8" FNPT	1/2" FNPT	3/4" FNPT	1" FNPT		1/8" FBSP	1/4" FBSP	3/8" FBSP	1/2" FBSP	3/4" FBSP	1" FBSP
	21F4M4H	**21F4M6H**	**21F4M9H**	**21F4M5U**	**15F4M2P**	**15F4M4P**	**15F4M6P**	**15F4M8P**	**15F4M12P**	**15F4M16P**		**15F4M2B**	**15F4M4B**	**15F4M6B**	**15F4M8B**	**15F4M12B**	**15F4M16B**
	21F6M4H	**21F6M6H**	**21F6M9H**	**21F6M5U**	**15F6M2P**	**15F6M4P**	**15F6M6P**	**15F6M8P**	**15F6M12P**	**15F6M16P**		**15F6M2B**	**15F6M4B**	**15F6M6B**	**15F6M8B**	**15F6M12B**	**15F6M16B**
	21F9M4H	**21F9M6H**	**21F9M9H**	**21F9M5U**	**15F9M2P**	**15F9M4P**	**15F9M6P**	**15F9M8P**	**15F9M12P**	**15F9M16P**		**15F9M2B**	**15F9M4B**	**15F9M6B**	**15F9M8B**	**15F9M12B**	**15F9M16B**
	21F12M4H	**21F12M6H**	**21F12M9H**	**21F12M5U**	**15F12M2P**	**15F12M4P**	**15F12M6P**	**15F12M8P**	**15F12M12P**	**15F12M16P**		**15F12M2B**	**15F12M4B**	**15F12M6B**	**15F12M8B**	**15F12M12B**	**15F12M16B**
	21F16M4H	**21F16M6H**	**21F16M9H**	**21F16M5U**	**15F16M2P**	**15F16M4P**	**15F16M6P**	**15F16M8P**	**15F16M12P**	**15F16M16P**		**15F16M2B**	**15F16M4B**	**15F16M6B**	**15F16M8B**	**15F16M12B**	**15F16M16B**
	65F4H	**65F4H6H**	**65F4H9H**	**65F4H5U**	**15F4H2P**	**15F4H4P**	**15F4H6P**	**15F4H8P**	**15F4H12P**	**15F4H16P**		**15F4H2B**	**15F4H4B**	**15F4H6B**	**15F4H8B**	**15F4H12B**	**15F4H16B**
		65F6H	**65F6H9H**	**65F6H5U**	**15F6H2P**	**15F6H4P**	**15F6H6P**	**15F6H8P**	**15F6H12P**	**15F6H16P**		**15F6H2B**	**15F6H4B**	**15F6H6B**	**15F6H8B**	**15F6H12B**	**15F6H16B**
			65F9H	**65F9H5U**	**15F9H2P**	**15F9H4P**	**15F9H6P**	**15F9H8P**	**15F9H12P**	**15F9H16P**		**15F9H2B**	**15F9H4B**	**15F9H6B**	**15F9H8B**	**15F9H12B**	**15F9H16B**
				152F5U	**15F5U2P**	**15F5U4P**	**15F5U6P**	**15F5U8P**	**15F5U12P**	**15F5U16P**		**15F5U2B**	**15F5U4B**	**15F5U6B**	**15F5U8B**	**15F5U12B**	**15F5U16B**

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting.*

	Male Connection "B"																	
	Male High Pressure 65,000 psi **(4,500 bar)**			Male Ultra High Pressure 152,000 psi **(10,500 bar)**	Male Pipe 15,200 psi **(1,050 bar)**							Male British Standard Pipe 15,200 psi **(1,050 bar)**					
	1/4" 4HM	3/8" 6HM	9/16" 9HM	5/16" 5UM	1/8" MNPT	1/4" MNPT	3/8" MNPT	1/2" MNPT	3/4" MNPT	1" MNPT		1/8" MBSP	1/4" MBSP	3/8" MBSP	1/2" MBSP	3/4" MBSP	1" MBSP
	21M4M4H	**21M4M6H**	**21M4M9H**	**21M4M5U**	**15M4M2P**	**15M4M4P**	**15M4M6P**	**15M4M8P**	**15M4M12P**	**15M4M16P**		**15M4M2B**	**15M4M4B**	**15M4M6B**	**15M4M8B**	**15M4M12B**	**15M4M16B**
	21M6M4H	**21M6M6H**	**21M6M9H**	**21M6M5U**	**15M6M2P**	**15M6M4P**	**15M6M6P**	**15M6M8P**	**15M6M12P**	**15M6M16P**		**15M6M2B**	**15M6M4B**	**15M6M6B**	**15M6M8B**	**15M6M12B**	**15M6M16B**
	21M9M4H	**21M9M6H**	**21M9M9H**	**21M9M5U**	**15M9M2P**	**15M9M4P**	**15M9M6P**	**15M9M8P**	**15M9M12P**	**15M9M16P**		**15M9M2B**	**15M9M4B**	**15M9M6B**	**15M9M8B**	**15M9M12B**	**15M9M16B**
	21M12M4H	**21M12M6H**	**21M12M9H**	**21M12M5U**	**15M12M2P**	**15M12M4P**	**15M12M6P**	**15M12M8P**	**15M12M12P**	**15M12M16P**		**15M12M2B**	**15M12M4B**	**15M12M6B**	**15M12M8B**	**15M12M12B**	**15M12M16B**
	21M16M4H	**21M16M6H**	**21M16M9H**	**21M16M5U**	**15M16M2P**	**15M16M4P**	**15M16M6P**	**15M16M8P**	**15M16M12P**	**15M16M16P**		**15M16M2B**	**15M16M4B**	**15M16M6B**	**15M16M8B**	**15M16M12B**	**15M16M16B**
	65M4H	**65M4H6H**	**65M4H9H**	**65M4H5U**	**15M4H2P**	**15M4H4P**	**15M4H6P**	**15M4H8P**	**15M4H12P**	**15M4H16P**		**15M4H2B**	**15M4H4B**	**15M4H6B**	**15M4H8B**	**15M4H12B**	**15M4H16B**
		65M6H	**65M6H9H**	**65M6H5U**	**15M6H2P**	**15M6H4P**	**15M6H6P**	**15M6H8P**	**15M6H12P**	**15M6H16P**		**15M6H2B**	**15M6H4B**	**15M6H6B**	**15M6H8B**	**15M6H12B**	**15M6H16B**
			65M9H	**65M9H5U**	**15M9H2P**	**15M9H4P**	**15M9H6P**	**15M9H8P**	**15M9H12P**	**15M9H16P**		**15M9H2B**	**15M9H4B**	**15M9H6B**	**15M9H8B**	**15M9H12B**	**15M9H16B**
				152M5U	**15M5U2P**	**15M5U4P**	**15M5U6P**	**15M5U8P**	**15M5U12P**	**15M5U16P**		**15M5U2B**	**15M5U4B**	**15M5U6B**	**15M5U8B**	**15M5U12B**	**15M5U16B**

** The pressure rating of any adapter is the value of the lowest rated connection in the fitting.*

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.

Adapters and Couplings

MAXIMATOR®

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MAXIMATOR®




Accessories

Pressure gauges, transducers and high pressure hoses

MAXIMATOR has been designing and manufacturing high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliability, backed by one of the best service organizations in the industry.

High Pressure Valves feature:

- pressure gauges up to max. 101,000 psi **(7,000 bar)**
- robust and safe pressure transducers up to max. 116,000 psi **(8,000 bar)**
- comprehansive range of HP hoses for max. 58,000 psi **(4,000 bar)**

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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MAXIMATOR®

Pressure gauges and transducers

MAXIMATOR provides pressure gauges up to max. 101,000 psi **(7,000 bar)**. Their connections are adjusted to the **MAXIMATOR** high pressure program (cf. the table below).

All pressure gauges are liquid damped and conform to accuracy class 1.0.

Pressure range	Catalog Number	Connection Type	Diameter in. **(mm)**	Accuracy class
bar (psi)				
0–1,000 bar (0–14,500 psi)	3300.0152	1/2" BSP	3.9" **(100)**	1.0
0–1,000 bar (0–14,500 psi)	3300.0164	1/2" BSP	6.3" **(160)**	1.0
0–1,600 bar (0–23,200 psi)	3300.0108	1/2" BSP	3.9" **(100)**	1.0
0–1,600 bar (0–23,200 psi)	3300.0165	1/2" BSP	6.3" **(160)**	1.0
0–2,500 bar (0–36,000 psi)	3300.0153	1/2" BSP	3.9" **(100)**	1.0
0–2,500 bar (0–36,000 psi)	3300.0166	1/2" BSP	6.3" **(160)**	1.0
0–4,000 bar (0–58,000 psi)	3300.0167	4 H (9/16"-18 UNF)	6.3" **(160)**	1.0
0–6,000 bar (0–87,000 psi)	3300.1497	5 U (5/8"-18 UNF)	6.3" **(160)**	1.0
0–7,000 bar (0–101,000 psi)	3300.3251	5 U (5/8"-18 UNF)	6.3" **(160)**	1.0

Gauges with different pressure ranges, diameters and accuracy classes upon request.

MAXIMATOR supplies robust and safe pressure transducers up to max. 116,000 psi **(8,000 bar)**. Main featres of the transducers are their high accuracy and good longevity.

Their connections are adjusted to the **MAXIMATOR** HP system. Output 0 to 10 VDC.

Pressure range psi **(bar)**	Catalog Number	Connection Type	Temperature	Accuracy class
36,000 **(2,500)**	3503.4475	4 H (9/16"-18 UNF)	-4°F to 170°F **(-20°C to 80°C)**	0.5
58,000 **(4,000)**	3503.4476	4 H (9/16"-18 UNF)	-4°F to 170°F **(-20°C to 80°C)**	0.5
116,000 **(8,000)**	3503.4477	5 U (5/8"-18 UNF)	-4°F to 170°F **(-20°C to 80°C)**	0.5

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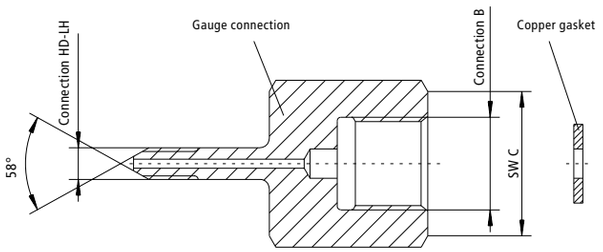
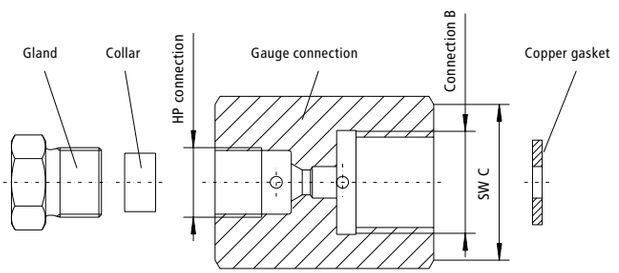
Connection B – BSP Female with copper gasket



Typ	Catalog Number	Connection HD-LH	Connection B	SW C
21A4M4GB	3780.2183	4M (1/4-28-UNF-LH)	1/4 BSP	27
21A4M8GB	3780.2169	4M (1/4-28-UNF-LH)	1/2 BSP	36
21A6M8GB	3780.2170	6M (3/8-24UNF-LH)	1/2 BSP	36
21A9M8GB	3780.2179	9M (9/16-18UNF-LH)	1/2 BSP	36
21A12M8GB	3780.2193	12M (3/4-16UNF-LH)	1/2 BSP	36
21A16M8GB	3780.2194	16M (1-14UNF-LH)	1/2 BSP	36
36A4H8GB	3780.2180	4H (1/4-28UNF-LH)	1/2 BSP	36
36A6H8GB	3780.2181	6H (3/8-24UNF-LH)	1/2 BSP	36
36A9H8GB	3780.2182	9H (9/16-18UNF-LH)	1/2 BSP	36

NPT connections see adapters

Connection B – BSP Female with copper gasket



Typ	Catalog Number	Connection HD-LH	Connection B	SW C	Pressure psi **(bar)**
21F4M4GB	3770.2187	4M (7/16-20UNF)	1/4 BSP	27	21,000 **(1,500)**
21F4M8GB	3770.2184	4M (7/16-20UNF)	1/2 BSP	36	21,000 **(1,500)**
21F6M4GB	3770.2188	6M (9/16-18UNF)	1/4 BSP	36	21,000 **(1,500)**
21F6M8GB	3770.2185	6M (9/16-18UNF)	1/2 BSP	36	21,000 **(1,500)**
21F4H4GB	3770.2189	4H (9/16-18UNF)	1/4 BSP	36	36,000 **(2,500)**
21F4H8GB	3770.2186	4H (9/16-18UNF)	1/2 BSP	36	36,000 **(2,500)**

NPT connections see adapters

MAXIMATOR®

High pressure hoses

MAXIMATOR provides a comprehensive range of HP hoses in high-quality thermoplastic synthetic materials. Pressure substrates are of steel and compatible materials.

These flexible connections are suited for max. operating pressures of 58,000 psi **(4,000 bar)**.

Upon request, **MAXIMATOR** also supplies HP hoses with glands and collars to make them fit for integration into a 65,000 psi **(4,500 bar)** high pressure system. The bending radius must not exceed 12,6 in. **(320 mm)**.

9/16" - 18 UNF | 3/8" - 24 UNF | 1/4" - 28 UNF | DKR 1/4"

Pressure range psi **(bar)**	Catalog Number	Connection Type	Type	Diameter in. **(mm)**		Length in **(mm)**
				outside	inside	
14,000 **(1,000)**	3300.0233	DKR 1/4" Union Nut	SK2005St	0.37 **(9.4)**	0.20 **(5)**	39 **(1000)**
14,000 **(1,000)**	3300.4073	DKR 1/4" Union Nut	SK2005St	0.37 **(9.4)**	0.20 **(5)**	79 **(2000)**
14,000 **(1,000)**	3300.0235	DKR 1/4" Union Nut	SK2005St	0.37 **(9.4)**	0.20 **(5)**	118 **(3000)**
26,000 **(1,800)**	3300.0191	DKR 1/4" Union Nut	SK4005St	0.44 **(11.2)**	0.20 **(5)**	39 **(1000)**
26,000 **(1,800)**	3300.1982	DKR 1/4" Union Nut	SK4005St	0.44 **(11.2)**	0.20 **(5)**	79 **(2000)**
26,000 **(1,800)**	3300.2082	DKR 1/4" Union Nut	SK4005St	0.44 **(11.2)**	0.20 **(5)**	118 **(3000)**
26,000 **(1,800)**	3300.2197	1/4"-28UNF-LH	SK4005St	0.44 **(11.2)**	0.20 **(5)**	39 **(1000)**
26,000 **(1,800)**	3300.3987	1/4"-28UNF-LH	SK4005St	0.44 **(11.2)**	0.20 **(5)**	79 **(2000)**
26,000 **(1,800)**	3300.3815	1/4"-28UNF-LH	SK4005St	0.44 **(11.2)**	0.20 **(5)**	118 **(3000)**
36,000 **(2,500)**	3300.0206	DKR 1/4" Union Nut	SK6005St	0.53 **(13.4)**	0.20 **(5)**	39 **(1000)**
36,000 **(2,500)**	3300.0207	DKR 1/4" Union Nut	SK6005St	0.53 **(13.4)**	0.20 **(5)**	79 **(2000)**
36,000 **(2,500)**	3300.0208	DKR 1/4" Union Nut	SK6005St	0.53 **(13.4)**	0.20 **(5)**	118 **(3000)**
36,000 **(2,500)**	3300.1278	1/4"-28UNF-LH	SK6005St	0.53 **(13.4)**	0.20 **(5)**	39 **(1000)**
36,000 **(2,500)**	3300.2384	1/4"-28UNF-LH	SK6005St	0.53 **(13.4)**	0.20 **(5)**	79 **(2000)**
36,000 **(2,500)**	3300.3423	1/4"-28UNF-LH	SK6005St	0.53 **(13.4)**	0.20 **(5)**	118 **(3000)**
58,000 **(4,000)**	3300.1409	3/8"-24UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	39 **(1000)**
58,000 **(4,000)**	3300.5712	3/8"-24UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	79 **(2000)**
58,000 **(4,000)**	3300.4923	3/8"-24UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	118 **(3000)**
58,000 **(4,000)**	3300.5713	9/16"-18UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	39 **(1000)**
58,000 **(4,000)**	3300.5988	9/16"-18UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	79 **(2000)**
58,000 **(4,000)**	3300.2048	9/16"-18UNF-LH	SK8005St	0.55 **(14.0)**	0.18 **(4.6)**	118 **(3000)**

Hoses for other operating pressures and nominal widths as well connection combinations can be supplied upon request.

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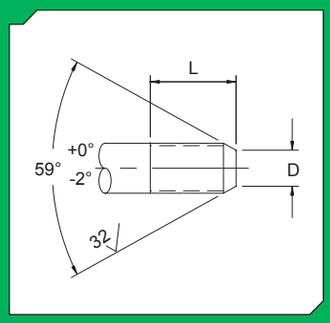

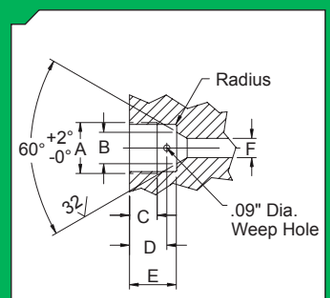

Tools & Installation

MAXIMATOR offers manual Coning and Threading tools that are designed to prepare accurate tubing ends to accept the medium, high and ultra high pressure connections.

Tools & Installation feature:

- Manual Coning and Threading Coning tools are designed to thread up to 9/16" OD tubing.
- One size Coning and Threading tool with interchangeable bushings and thread dies eliminates multiple tool inventories.
- Internal needle bearings and high strength materials offers ease of operation and extended tool life.
- Coning blades are designed to cut both the angle and straight areas to insure good concentricity between the sealing surfaces.
- Precision Reseating Tools to repair damaged female high pressure connections without full disassembly of components.

MAXIMATOR offers a complete line of manual tools for the proper preparation of medium, high and ultra high pressure connections to 9/16" OD tubing. For complete coning and threading instructions see MAXIMATOR's website at www.maximator.de.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Index links

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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Tools & Installation

Coning and Threading Tools

MAXIMATOR offers tools for coning and threading tubing up to 9/16" O.D. These are precise tools that allow manual coning and threading of medium, high, and ultra high pressure tubing. Please refer to the Maxpro Technologies website, www.maxprotech.com, and click on the VFT button to find detailed instructions for the coning and threading process.

Coning Tools

The coning tool comes complete with blades, collet and tools. The blades and tool feed nut allow the user to control the cutting feed rate and face the end of the tube when complete. The blades and collet can be changed for other sizes, while using the same base tool.

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Connection Type	Coning Tool Complete Catalog Number	Replacement Part Information	
				Collet Part Number	Coning Blades Part Number
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	4MM	**CT4M**	3781.1009	3781.1014
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	6MM	**CT6M**	3781.1010	3781.1013
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	9MM	**CT9M**	3781.1011	3781.1012
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	9MM	**CT9M.359**	3781.1011	3781.1179
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	4HM	**CT4H**	3781.1009	3781.0843
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	6HM	**CT6H**	3781.1010	3781.1017
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	9HM	**CT9H**	3781.1011	3781.1016
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	5UM	**CT5U**	3781.0846	3781.0843

Threading Tools

The threading tool comes complete with the threading die and bushing. The thread is a left hand type. The thread die and bushing can be changed for other sizes, while using the same base tool.

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Connection Type	Left Hand Thread Size (UNF class 2)	Threading Tool Complete Catalog Number	Replacement Part Information	
					Die Part Number	Bushing Part Number
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	4MM	1/4-28	**TT4**	3781.1061	3781.1055
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	6MM	3/8-24	**TT6**	3781.1059	3781.1053
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	9MM	9/16-18	**TT9**	3781.1060	3781.1054
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	9MM	9/16-18	**TT9**	3781.1060	3781.1054
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	4HM	1/4-28	**TT4**	3781.1061	3781.1055
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	6HM	3/8-24	**TT6**	3781.1059	3781.1053
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	9HM	9/16-18	**TT9**	3781.1060	3781.1054
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	5UM	5/16-24	**TT5**	3781.1058	3781.0152

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Reseating Tools

The reseating tool is designed to rework an existing damaged coned and threaded connection without full disassembly of the component. The reseating tool will resurface the sealing surfaces of the medium, high, and ultra high pressure connections up to 9/16" tubing.

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Connection Type	Reseating Tool Complete Catalog Number	Replacement Part Information		
				Cutter Part Number	Bushing Part Number	Gland Part Number
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	4MF	**RT4M**	3781.0647	n/a	3781.0649
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	6MF	**RT6M**	3781.0650	n/a	3781.0651
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	9MF	**RT9M**	3781.0656	n/a	3781.0655
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	9MF	**RT9M**	3781.0656	n/a	3781.0655
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	4HF	**RT4H**	3781.0647	1700.0719	3781.0648
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	6HF	**RT6H**	3781.0645	1700.0718	3781.0646
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	9HF	**RT9H**	3781.0532	1700.0613	3781.0533
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	5UF	**RT5U**	3781.0532	n/a	3781.0652

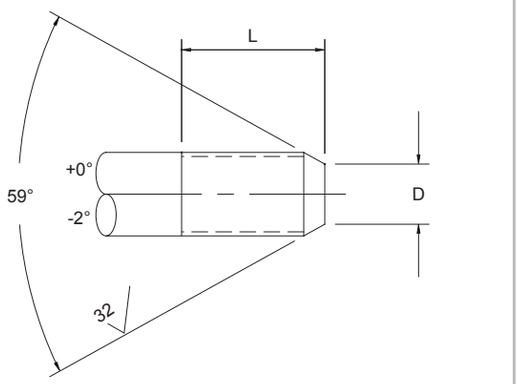
Deburring Tools

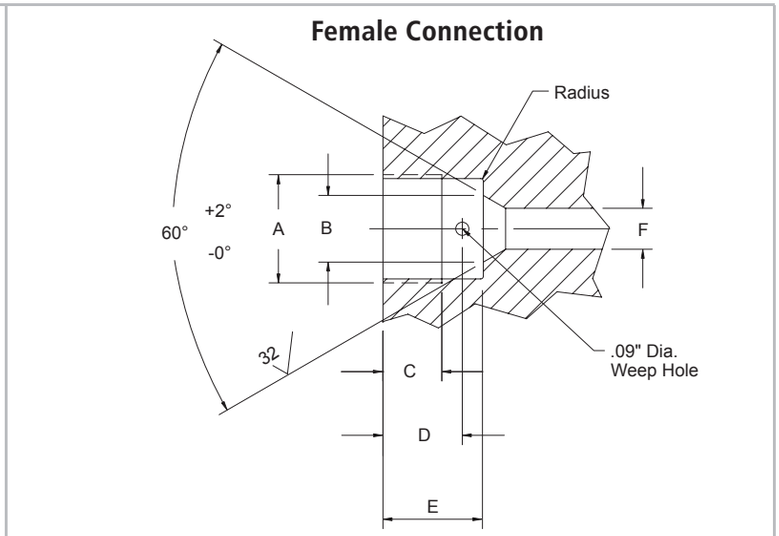
The deburring tool is designed to remove the metal burr on the inside diameter of the tubing after the cutting process. The reseating tool will work on all medium, high, and ultra high pressure connections up to 9/16" tubing.

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Connection Type	Deburring Tool Complete Catalog Number	Replacement Part Information
				Bushing Part Number
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	4MM	**DT4**	1452.0821
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	6MM	**DT4**	1452.0821
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	9MM	**DT4**	1452.0821
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	9MM	**DT5**	1452.4605
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	4HM	**DT4**	1452.0821
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	6HM	**DT4**	1452.0821
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	9HM	**DT4**	1452.0821
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	5UM	**DT4**	1452.0821

Tools & Installation

Tube Connection Details





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	C	D	E	F*	Tubing Engagement Allowance
Medium Pressure													
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	0.141 **(3.6)**	0.344 **(8.7)**	1/4-28	4MM	4MF	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)**	21,000 **(1,500)**	0.250 **(6.4)**	0.438 **(11.1)**	3/8-24	6MM	6MF	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)**	21,000 **(1,500)**	0.406 **(10.3)**	0.500 **(12.7)**	9/16-18	9MM	9MF	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)**	21,000 **(1,500)**	0.562 **(14.3)**	0.625 **(15.9)**	3/4-16	12MM	12MF	3/4-14 NPS	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)**	21,000 **(1,500)**	0.719 **(18.3)**	0.781 **(19.8)**	1-14	16MM	16MF	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)**
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	4HM	4HF	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	6HM	6HF	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)**	65,000 **(4,500)**	0.281 **(7.1)**	0.938 **(23.8)**	9/16-18	9HM	9HF	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)**
Ultra High Pressure													
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	5UM	5UF	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.*

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

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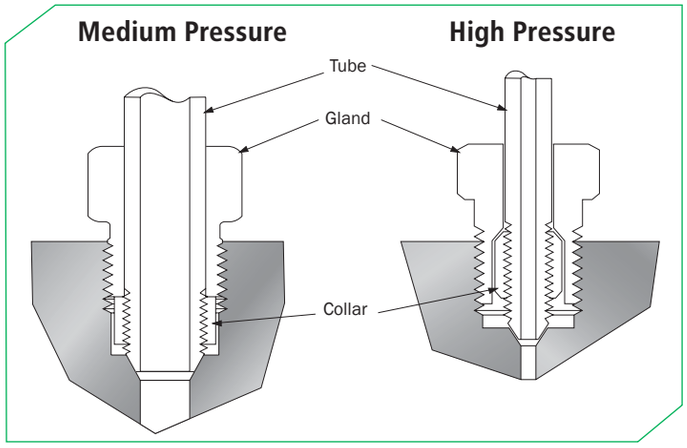
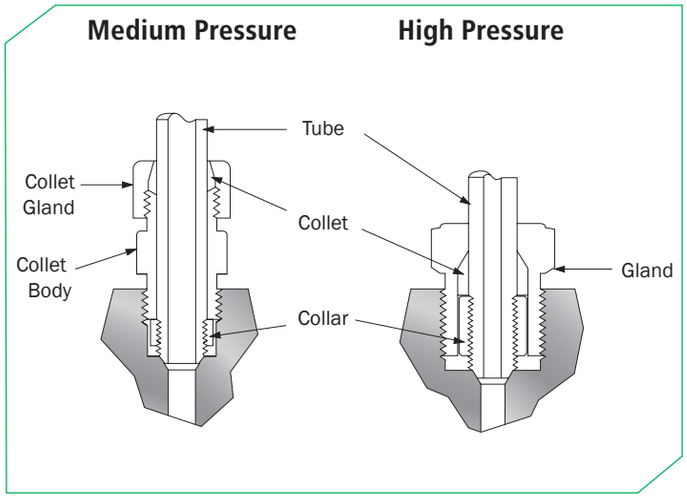
Assembly of Standard Coned & Threaded Connections



Assembly Instructions:

1. Insert the gland onto the tubing. Thread the left handed collar onto the tube until at least one or two threads are exposed from the tapered coned end.
2. Apply a compatible lubricant to the gland threads and the back side of the collar where it comes in contact with the gland. Also lubricate the tapered cone portion of the tube. This will help protect the sealing surfaces from galling during the assembly process.
3. Insert the tubing into the connection and tighten the assembly hand tight. Then use a torque wrench to tighten the connection to the appropriate value in the table below. It is good practice to use an additional wrench to preventthe opposite connection from turning.

Assembly of Anti-Vibration Collet Gland Connections



Assembly Instructions

1. The High Pressure Anti-Vibration Collet Gland Assembly can be installed using the same procedure as the standard coned and threaded connection. (see above steps 1 through 3) The high pressure collet grips the tube when the connection gland is tightened.
2. When using the Medium Pressure Anti-Vibration Collet Assembly, the procedure is the same as that of the standard coned and threaded connection (see above steps 1 through 3) with the additional step below.
3. Once the Collet Body has been tightened to the approriate torque value in the table below, the Collet Gland can be turned 1 - 1/4 turns past hand tight. This will compress the collet against the tube. After the initial compression of the collet, any additional retightening would only require 3/4 of a turn past hand tight.

Torque Values

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Connection Type	Tube Gland Hex Size in. **(mm)**	Required Torque ft-lbs. (Nm)
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	**4M**	1/2 **(12.7)**	20 **(30)**
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	**6M**	5/8 **(15.9)**	30 **(40)**
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	**9M**	15/16 **(23.8)**	55 **(75)**
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	**9M**	15/16 **(23.8)**	55 **(75)**
3/4 x .438 **(19.05 x 11.12)**	21,000 **(1,500)**	**12M**	1-3/16 **(30.2)**	90 **(120)**
3/4 x .516 **(19.05 x 13.1)**	15,200 **(1,050)**	**12M**	1-3/16 **(30.2)**	90 **(120)**
1 x .562 **(25.4 x 14.27)**	21,000 **(1,500)**	**16M**	1-3/8 **(34.9)**	150 **(200)**
1 x .688 **(25.4 x 17.47)**	15,200 **(1,050)**	**16M**	1-3/8 **(34.9)**	150 **(200)**
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	**4H**	5/8 **(15.9)**	25 **(35)**
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	**6H**	13/16 **(20.6)**	50 **(70)**
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	**9H**	1-3/16 **(30.2)**	110 **(150)**
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	**5U**	3/4 **(19.05)**	70 **(95)**

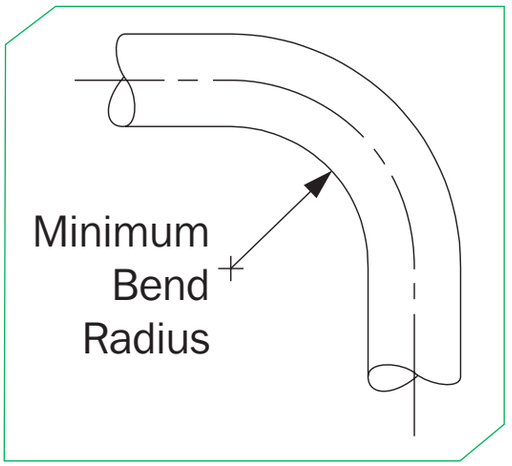
All dimensions are for references only and are subject to change.

Tools & Installation

Tubing Minimum Bend Radius & Valve Torque Values

Minimum Bend Radius for 316SS & 304SS Tubing

Tubing Size O.D. x I.D. in. **(mm)**	Tubing Pressure psi **(bar)** @ R.T.	Recommended Minimum Bend Radius in. **(mm)**
1/4 x .109 **(6.35 x 2.77)**	21,000 **(1,500)**	1.25 **(31.8)**
3/8 x .203 **(9.53 x 5.17)**	21,000 **(1,500)**	1.75 **(44.5)**
9/16 x .312 **(14.29 x 7.93)**	21,000 **(1,500)**	2.63 **(66.8)**
9/16 x .359 **(14.29 x 9.13)**	15,200 **(1,050)**	2.63 **(66.8)**
3/4 x .438 **(19.05 x 11.12)**	21,000 **(1,500)**	3.50 **(88.9)**
3/4 x .516 **(19.05 x 13.1)**	15,200 **(1,050)**	3.50 **(88.9)**
1 x .562 **(25.4 x 14.27)**	21,000 **(1,500)**	4.63 **(117.6)**
1 x .688 **(25.4 x 17.47)**	15,200 **(1,050)**	4.63 **(117.6)**
1/4 x .083 **(6.35 x 2.11)**	65,000 **(4,500)**	1.25 **(31.8)**
3/8 x .125 **(9.53 x 3.17)**	65,000 **(4,500)**	1.75 **(44.5)**
9/16 x .188 **(14.29 x 4.77)**	65,000 **(4,500)**	2.63 **(66.8)**
5/16 x .062 **(7.94 x 1.58)**	152,000 **(10,500)**	6.00 **(152.4)**



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

Needle Valve Torque Values

Valve Series	Tubing Size in. **(mm)**	Packing Gland Hex in. **(mm)** Size	Packing Gland Torque ft.-lbs. (Nm)	Running Torque in.-lbs. (Nm)	Seating Torque in.-lbs. (Nm)
Medium Pressure 21,000 psig @ RT 21V	1/4 **(6.35)**	5/8 **(15.9)**	30 **(40)**	40 **(4.5)**	55 **(6.2)**
	3/8 **(9.53)**	5/8 **(15.9)**	30 **(40)**	40 **(4.5)**	55 **(6.2)**
	9/16 **(14.29)**	13/16 **(20.6)**	60 **(80)**	60 **(6.8)**	90 **(10.2)**
	3/4 **(19.05)**	15/16 **(23.8)**	3/4 turn	300 **(33.9)**	360 **(40.7)**
	1 **(25.4)**	1 3/8 **(34.9)**	3/4 turn	360 **(40.7)**	600 **(67.8)**
High Pressure 36,000 psig @ RT 36V	1/4 **(6.35)**	13/16 **(20.6)**	45 **(60)**	50 **(5.6)**	60 **(6.8)**
	3/8 **(9.53)**				
	9/16 **(14.29)**				
High Pressure 65,000 psig @ RT 65V	1/4 **(6.35)**	13/16 **(20.6)**	40 **(55)**	65 **(7.3)**	75 **(8.5)**
	3/8 **(9.53)**				
	9/16 **(14.29)**				
Ultra High Pressure 101,000 psig @ RT 101V	5/16 **(7.94)**	15/16 **(23.8)**	60 **(80)**	100 **(11.3)**	120 **(13.6)**

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

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MAXIMATOR®

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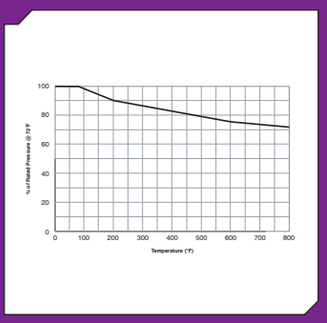
ISO-9001:2000



Technical Information

MAXIMATOR has been designing and manufacturing high pressure equipment for more than thirty years and has a worldwide reputation for quality and reliability. Their work is based on a certified quality management system (DIN EN ISO 9001:2000) - the fundamental asset for successfully implementing technical knowledge and experience in the field of complex systems.

Product features:

- Maximator's Quality Management System meets all requirements of DIN EN ISO 9001:2000, TÜV Certification to 11-15-2009.
- All valves, fittings and tubing are designed in accordance with the European Pressure Equipment Directive 97/23/EC.
- Pressure vs. Temperature chart for 316 cold worked stainless steel.

MAXIMATOR GmbH is the exclusive European distributor for Maximator products. At Maximator our industry experience is unparalleled. Whether General Industrial, Oil & Gas, Water Jet, Chemical or Petrochemical applications, our teams of experienced engineers and highly trained professionals have worked in the high pressure industry for decades and are prepared to support your needs. Our guiding principles are safety, quality, and dependability. Our comprehensive inventory will ensure quick delivery that is unmatched in today's environment.

Note: When selecting multiple items, the pressure rating would be that of the lowest rated component.

Technical Information Index

Factory **MAXIMATOR GmbH**
Walkenrieder Str. 15
D-37449 Zorge / Germany
Telephon: ++49 5586 / 80 30
Facsimile: ++49 5586 / 8 03 30 40
Internet www.maximator.de
eMail: info@maximator.de

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Technical Information

The information in this section is presented as general data for assisting a user in the selection of valves, fittings and tubing for elevated pressure and/or temperature applications in liquid or gas plumbing systems.

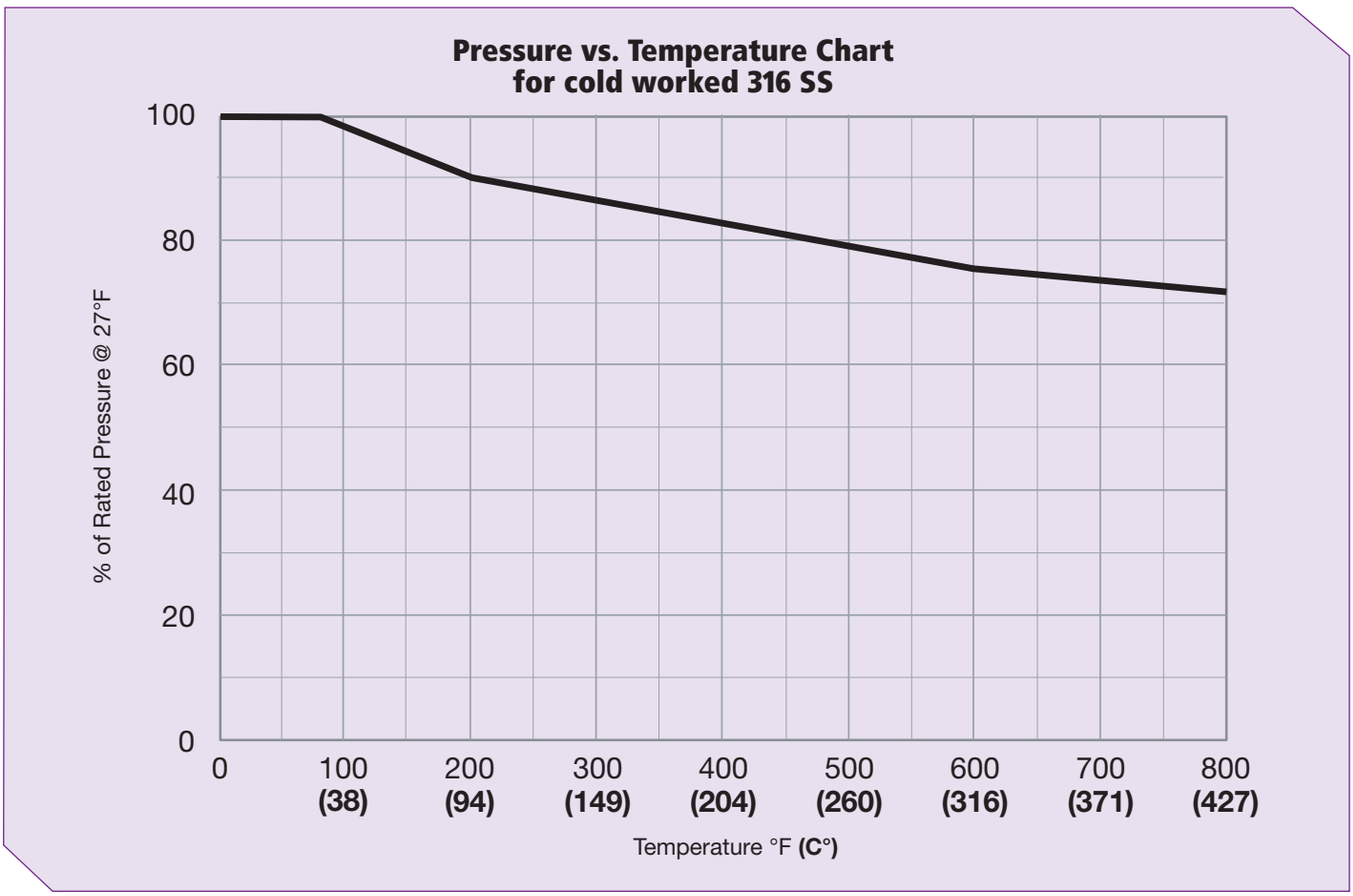
Maximator's medium, high and ultra-high pressure valves, fittings and tubing are good for most services from light vacuum up to 152,000 psi, depending on the pressure series selected. Coned and threaded type tube fittings, standard on all Maximator valves and fittings, can be used for most liquids and gases including lighter gases such as Hydrogen and Helium.

Compatibility of the valve, fitting and tubing materials with the actual process fluid is ultimately the responsibility of the user. Maxpro Technologies can assist in applications but is not an authority on all process fluids.

Some special applications such as Oxygen service require special cleaning and that option is available from Maxpro Technologies.

Below is a reference chart showing the effects of pressure versus temperature of cold worked 316 stainless steel material. When operating temperatures are above 800°F, a phenomenon called intergranular corrosion can occur. This condition can permanently change the material properties of the cold worked stainless material. Once the material has seen this elevated temperature, the material is considered to be permanently altered and a lower allowable pressure applies.

Other factors such as creep resistance, packing design and materials, corrosion resistance, cyclic conditions, and other process variables may affect the use of components at elevated temperatures. Consult factory when operating above 800°F.



Note: The above pressure temperature chart is for 316 cold worked materials, this chart does not account for the temperature rating of packing or o-ring material which could be the limiting factor. Contact factory for other material limitations.

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TÜV CERT

CERTIFICATE

The TÜV CERT Certification Body of TÜV Thüringen e.V.

certifies in accordance with TÜV CERT procedure that

MAXIMATOR GmbH

Walkenrieder Straße 15
37449 Zorge / Germany

Uferstraße 11
99734 Nordhausen / Germany

has established and applies a quality management system for

Design, manufacturing and sale of high pressure technics, hydraulics, pneumatics and test technology

An audit was performed, Report No. **3330 20WJ G0**

Proof has been furnished that the requirements according to

EN ISO 9001:2000

are fulfilled. The certificate is valid until **2009-11-15**
First certification 1994

Certificate Registration No. **15 100 4011**

Deutscher Akkreditierungsrat DAR TGA-ZM-19-96-00

Jena, 2006-11-16

TÜV THÜRINGEN

TÜV CERT Certification Body of TÜV Thüringen e. V.