

Needle Valve Block and Bleed

MVBB

Pressure to 20,000 psi (1379 bar)



Principle of Operation:

Parker Autoclave Engineers series MVBB block and bleed valve is a two stem manifold valve providing an economical and convenient method of blocking, bleeding and calibrating pressure transmitters and gauges. The valve utilizes the mini valve packing and stem design making it compact and easy to use. The valve can be surface or panel mounted for safe operation. In addition, manifold style valves reduce the number of fittings and space required for installation.

Block and Bleed MVBB Valve Features:

- MVBB Series valve design provides large valve performance in a small package
- Tubing sizes: 1/4" and 3/8"
- Rising stem/barstock body design
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem/seat life in abrasive flow, greater durability for repeated on/off cycles and excellent corrosion resistance
- Cold-worked type 316 stainless steel body with stainless steel packing gland. Stem and seat are cold-worked type 316 stainless steel
- PTFE encapsulated packing provides dependable stem and body sealing
- Stem and packing gland design have been selected to achieve extended thread cycle life and reduced handle torque

Parker Autoclave Engineers valves are complemented by a complete line of fittings, tubings and accessories. The MVBB Series uses Parker Autoclave Engineers' medium pressure connections. This coned and threaded connection provides a reliable bubble-tight seal for dependable performance in gas or liquid service.

All Parker Autoclave Engineers products are designed in accordance with ASME B31.3 Chapter IX High Pressure Piping standards.



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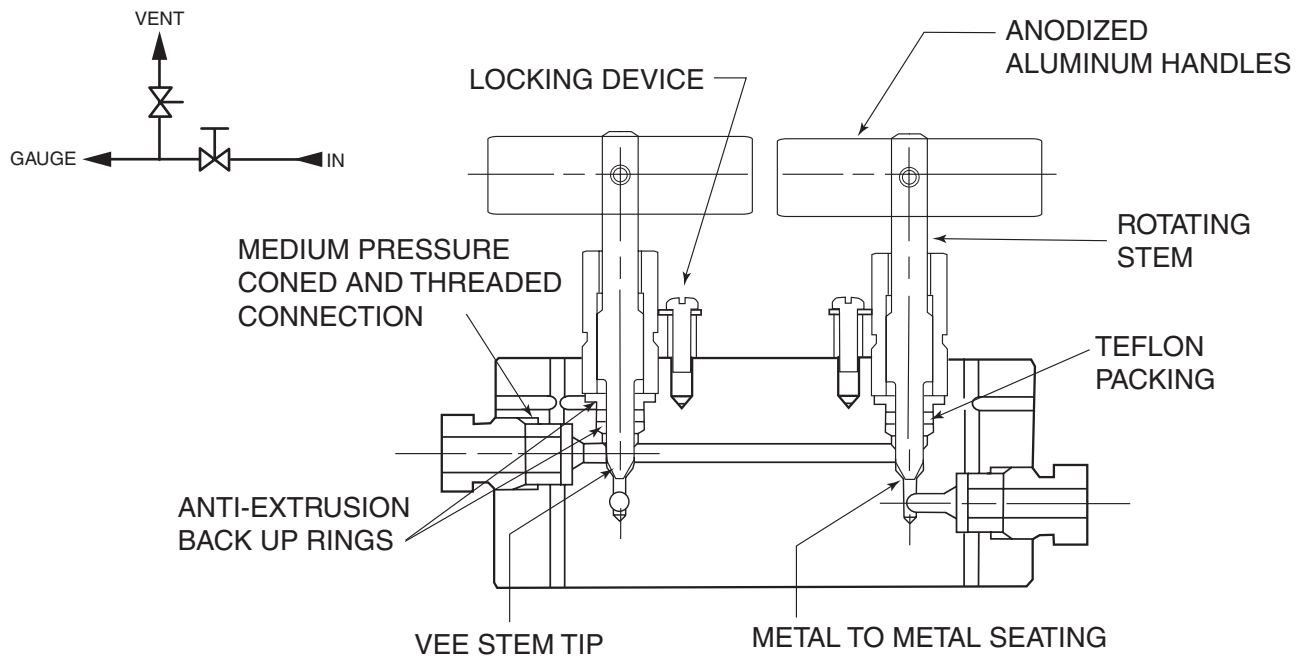
Block & Bleed MVBB Series: Pressures to 20,000 psi (1379 bar)



Tube Outside Diameter Size (inches)	Connection Type	Orifice Size Inches (mm)	Rated C_v^*	Pressure Rating psi (bar) @Room Temperature**
1/4	SF250CX	0.093 (2.36)	0.20	20,000 (1379)
3/8	SF375CX	0.093 (2.36)	0.20	20,000 (1379)

Notes

** For complete temperature ratings see pressure/temperature rating guide in Technical Information section.



To ensure proper fit use Parker Autoclave tubing

Valve Options:

Extreme Temperatures

Standard Parker Autoclave Engineers valves with PTFE packing may be operated to 450°F (232°C). High temperature packing is available for service from 0°F (-17.8°C) to 800°F (427°C) by adding the following suffixes to catalog order number.

- TG** Standard valve with PTFE glass packing to 600°F (316°C)
- GY** Standard valve with graphite braided yarn packing to 800°F (427°C)
- B** Standard valve with cryogenic trim materials and PTFE packing to -100°F (-73°C)

For additional valve options, contact your Sales Representative.

Note: Refer to the Tools, Installation, Operation and Maintenance section for proper maintenance procedures.

Ordering Guide:

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative. MVBB Series valves are furnished complete with connection components, unless otherwise specified.

Building a Part Number: Example: 20VMBB4

Example Part Number:	20VMBB	4	XX
Ordering Parameters/Options:	Valve Series	Outside Diameter Tube Size	Options
Table Reference: (see below)	A	B	C

A - Valve Series	
20VMBB	Block and Bleed VMBB Series Needle Valve

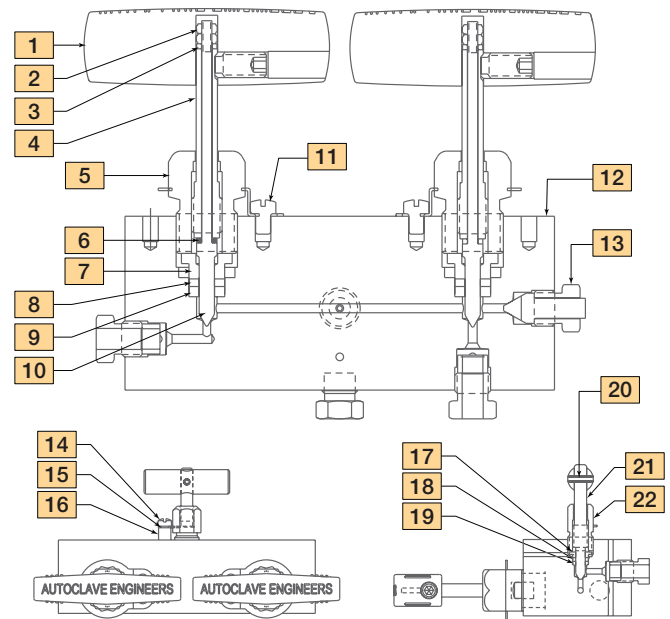
B - Outside Diameter Tube Size	
4	1/4"
6	3/8"

E - Options	
For extreme temperatures and other options, see Valve Options.	
TG	Standard Valve with PTFE glass packing
GY	Standard valve with Graphite braided yarn packing

Material of Construction:

Item #	Description	Material
1	Hex Nut	300 Series SS
2	Stem Sleeve	K-Monel
3	Thrust Washer	17-4 PH
4	Packing Washer	AMPCO 45
5	Bottom Washer	316 SS
6	Stem Head	MP35N
7	Thrust Washer	17-4 PH
8	Upper Stem (1" 20DV shown)	MP35N
9	Groove Pin	300 Series SS
10	Packing	PTFE
11	Lower Stem	MP35N
12		
13		
14		
15		
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17		
18		
19		
20		
21		
22		

Typical spare parts found in Repair Kits



Basic Repair Kits for 316 SS Material:

Basic Repair Kit for 316 SS Material			
Stem Type		1/4"	3/8"
MVBB Vee Strem	VEE	R20MVBB	R20MVBB
Consult your Parker Autoclave Engineers representative for other kit numbers, body part numbers, and pricing. Visit www.autoclave.com for product Operation manuals.			

Block and Bleed MVBB Series Dimensions:

Block and Bleed - MVBB		Catalog Number	Catalog Number
Stem Type	VEE	20MVBB4	20MVBB6
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)
Orifice Diameter		0.094 (2.39)	0.094 (2.39)
Dimensions: inches (mm)		A	3.50 (88.90)
		B	0.813 (20.65)
		C	0.38 (9.65)
		D	0.625 (15.88)
		D1	0.938 (23.83)
		E	1.50 (38.10)
		F	1.75 (44.45)
		G	0.63 (15.88)
		G1	0.281 (7.14)
		H*	2.94 (74.68)
		M	2.50 (63.50)
		N	0.485 (12.32)
		O	1.63 (41.40)
		P	.500 (12.70)
		Q	2.625 (66.68)
Block Thickness		0.75 (19.05)	0.75 (19.05)

G - Packing Gland mounting hole drill size • G1 - Bracket mounting hole size • H* - Dimension is with stem in closed position
 Panel mounting drill size: 0.22" all valves • All dimensions for reference only and subject to change • For prompt service, Parker Autoclave stocks select products. Consult factory.

Valve Options: (For Actuator Options please reference specific Actuator brochure)



Pneumatic Valve Actuators:

The need to control process and vent valves from a remote location makes air operated valves a vital component to many processing operations. All Parker Autoclave Engineers' valves are available with piston type actuators. Five sizes of air actuators (light, mini-light, medium, heavy duty or extra heavy, single and double stage) are offered to meet the service requirements of Parker Autoclave Engineers' Low, Medium and High Pressure needle valves. Both air-to-open (normally closed) and air-to-close (normally open) designs are included in the product line. Optional air to open AND close actuators available upon request. Please see our Pneumatic Valve Actuator Brochure to help size the proper actuator for your application.



Electric Valve Actuators:

Remotely controlling process flow at high pressure enhances safety and lowers labor costs. Parker Autoclave Engineers developed a flow control valve available in several models including weatherproof and explosionproof options.

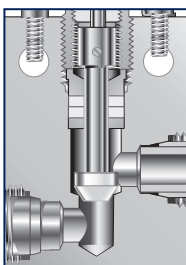
The Electrically Actuated Shut-off/Flow Regulating Actuator (FRC Series) is available for most of our Needle Valves through 9/16" tubing size and up to 60,000 psi maximum pressure. They are available in all body patterns except 3-Way / 2-Stem Manifold, and can withstand wide process temperature ranges.

Please consult the appropriate needle valve brochure for information on valve options, ratings, flow coefficient, body dimensions, and other specifications.

Stem Options:

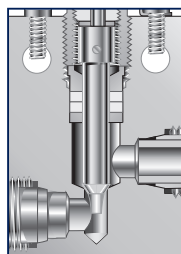
Most Parker Autoclave Engineers' valves are available with either Vee (on-off) or Regulating (Flow Control) Stems in our standard valve body seat or with our optional replaceable seat as shown below:

VEE Stem



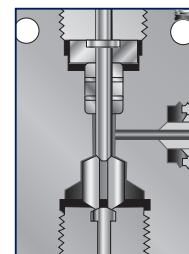
The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.

Regulating Stem



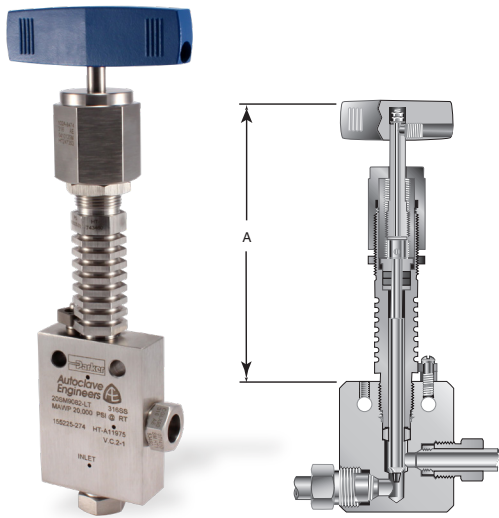
In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, Autoclave offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off. While it is not as precise as the control associated with the MicroMetering stem, especially with smaller flows, it does offer substantially better control than the Vee stem.

Replaceable Seat (with Vee Stem)



Replaceable seat option is only available with Right-Angle Style body. Replaceable seat is supplied as standard with an additional seat - rotate to use second side. Can be used with either stem type. Options include Stellite material or N-Dura coating to increase service life.

Valve Options: (For Actuator Options please reference specific Actuator brochure)



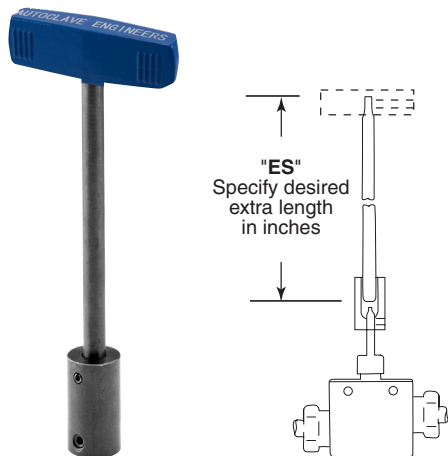
High/Low Temperature Extension:

Not typically needed for 10V/SW Series valves as temperature range does not exceed the barriers below, but option is shown for consideration.

- HT High Temperature (over 800°F (427°C))
- LT Low Temperature (under -100°F (-73°C))

Valve Series	Outside Diameter Tube Size (inches)	Dimensions "A" inches (mm)
10V & SW (this option not typically needed)	1/8"	5.38 (137)
	1/4"	5.50 (140)
	3/8"	5.50 (140)
	9/16"	6.31 (160)

HT option code includes Graphite (-GY) packing
LT option code includes 316 SS Trim material and PTFE packing



ES Stem Extender:

Stem extenders are offered for High and Low temperature operation or to extend through panel or barricade.

To order valve with Stem Extender, add "ES-" and length (6", 12", 18", 24") to beginning of valve part number e.g. ES12-20SM6071. Other lengths to special order.

To order Stem Extender only, provide valve model prefix e.g. ES12-20SM6. Handle not included – use same provided with original valve.



Needle Valve Clam Shell Handle Lockout:

(order separately using part numbers shown below, padlock not included)

Clam Shell Handle locks are provided to lockout valves in open or closed position preventing unauthorized personnel from actuating valve during shutdown or emergency situations. This clamshell design is available in four (4) sizes dependent on handle length:

- P/N AE004855 – 1" to 2.5" handle length
- P/N 90088 – 2.5" to 5.0" handle length
- P/N 90194 – 6.5" to 10" handle length
- P/N AE004350 – 8" to 13" handle length

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! CAUTION !

Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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