Needle Valve

Double Block and Bleed

20DBNV

Pressure to 20,000 psi (1379 bar)

Principle of Operation:

Parker Autoclave Engineers series DBNV double block and bleed valve is a three system manifold valve providing an economical and convenient method of blocking and bleeding in applications such as pressure monitoring and test, chemical injection and drain line isolation. The valve utilizes our standard valve packing and stem design to make it compact and easy to use. Manifold style valves reduce the number of fittings and space required for installation.

Double Block and Bleed 20DBMV Valve Features:

- 20DBNV Series valve design provides large valve performance in a small package
- Tubing sizes: 1/4” and 1”
- 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
- 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
- Temperatures from -100°F (-73°C) to 600°F (316°C)

Parker Autoclave Engineers’ valves are complemented by a complete line of fittings, tubings and accessories. The 20DBNV Series uses Parker Autoclave Engineers’ 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.

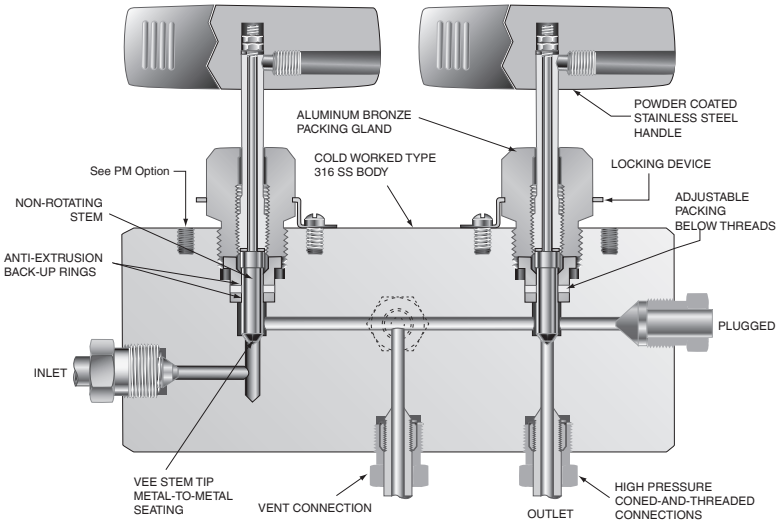
Double Block & Bleed 20DBNV Series:

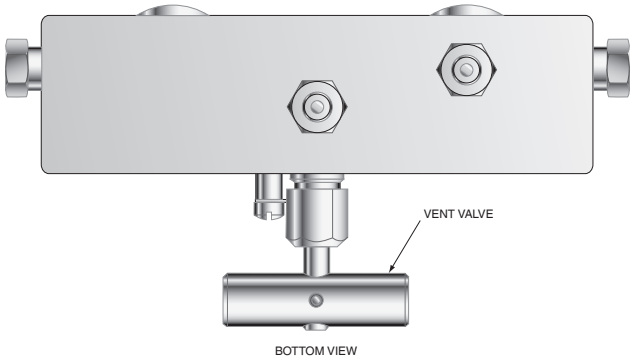
Pressures to 20,000 psi (1379 bar)

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)	0.10	20,000 (1379)
3/8	SF375CX	0.093 (2.36)	0.27	20,000 (1379)
9/16	SF562CX	0.312 (7.92)	0.65	20,000 (1379)
9/16	F562C	0.093 (2.36)	0.27	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)

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 end connections, see end connections options below. 20DBNV valves are urnished complete with tube connections.

Building a Part Number: ***Example: 20DBNVM4M4XX***

Example Part Number:	**20DBNV**	**M4**	**M4**	**XX**
Ordering Parameters/Options:	Valve Series	Tube Connection	Vent Connection	Options
Table Reference: (see below)	A	B	C	D

A - Valve Series	
20DBNV	Double Block and Bleed Series Needle Valve

B - Tube Connection (see chart below)	
M4	SF250CX20
M6	SF375CX20
M9	SF562CX
H9	F256C

C - Vent Connection (see chart below)	
M4	SF250CX20
M6	SF375CX20

D - Options	
For extreme temperatures and other options, see Valve Options.	
TB	PTFE glass packing
B	Cryogenic Trim, -100°F (-73°C)
PM	Panel Mount, additional screw is supplied
K	Anti-Vibe Collet and Gland Assembly

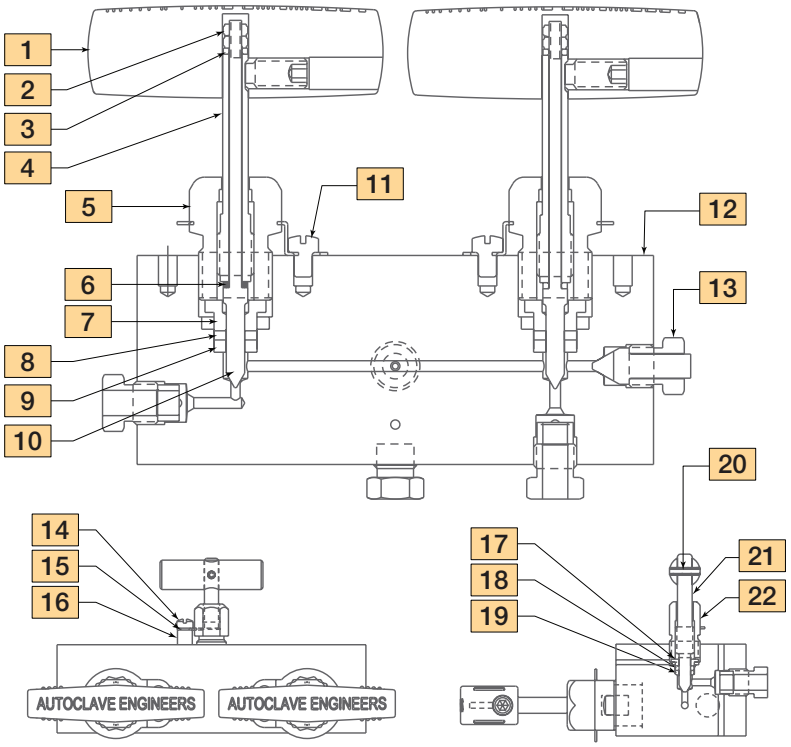
Connection Options:

Catalog Number	Tube Connection Number	Connection	MAWP @ Room temperature	Vent Connection Number	Vent Connection
20DBNVM4M4	M4	SF250CX20	20, 000 psi (1379 bar)	M4	SF250CX20
20DBNVM6M4	M6	SF375CX20	20, 000 psi (1379 bar)	M4	SF250CX20
20DBNVM6M6	M6	SF375CX20	20, 000 psi (1379 bar)	M6	SF375CX20
20DBNVM9M4	M9	SF562CX	20, 000 psi (1379 bar)	M4	SF250CX20
20DBNVH9M4	H9	SF562C	20, 000 psi (1379 bar)	M4	SF250CX20

MAWP: Maximum Allowable Working Pressure

Material of Construction:

Item #	Description	Material
1	Handle	316 SS
2	Hex Nut, #5-40	300 Series SS
3	Thrust Washer	17-4 PH
4	Stem Sleeve	304 SS
5	Packing Gland	316 SS
6	Thrust Washer	17-4 PH
7	Packing Washer	AMPCO 45
8	Packing	PTFE
9	Bottom Washer	316 SS
10	Vee Stem	316 SS
11	Screw, #10	18-8 SS
12	Body	316 SS
13	Plug	316 SS
14	Screw, 3.55mm	300 Series SS
15	Locking Device	316 SS
16	Spacer	316 SS
17	Packing Washer	316 SS
18	Packing	PTFE
19	Bottom Washer	316 SS
20	Spring Pin	18-8 SS
21	Stem	316 SS
22	Packing Gland	316 SS



Basic Repair Kits for 316 SS Material:

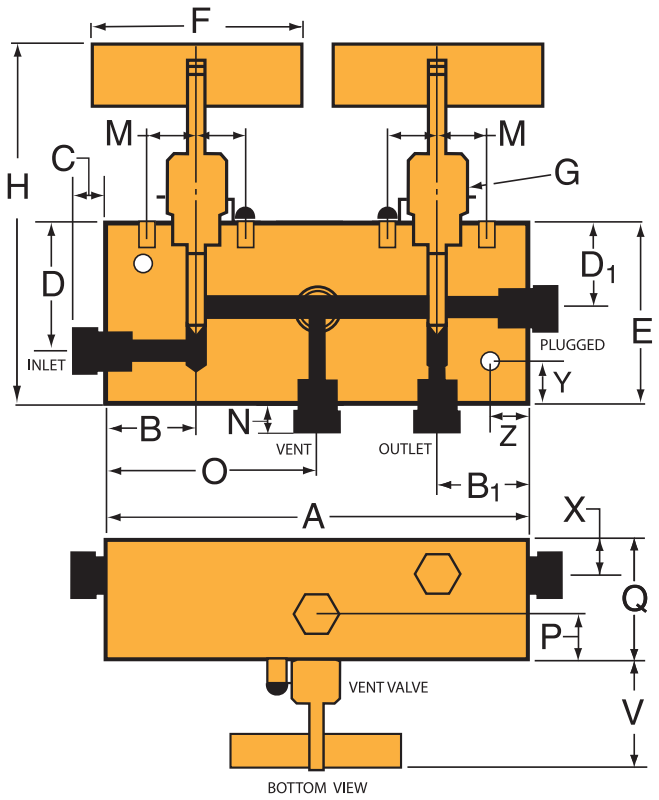
Consult your Parker Autoclave Engineers representative for other kit numbers, body part numbers, and pricing.

Visit www.autoclave.com for product Operation manuals.

Double Block and Bleed 20DBNV Series Dimensions:

Double Block and Bleed - 20DBNV

			Catalog Number			
Stem Type	VEE		20DBNVM4M4	20DBNVM6M4 20DBNVM6M6	20DBNVM9M4	20DBNVH9M4
Pipe Size			**1/4 (6.35)**	**3/8 (9.53)**	**9/16 (14.29)**	**9/16 (14.29)**
Orifice Diameter			0.094 (2.39)	0.125 (3.18)	0.312 (7.92)	0.094 (2.39)
Dimensions: inches (mm)		A	5.25 (133.35)	5.50 (139.70)	7.50 (190.50)	5.88 (149.35)
		B	1.00 (25.40)	1.12 (31.75)	1.69 (42.88)	1.31 (33.32)
		B1	1.00 (25.40)	1.12 (31.75)	1.50 (38.10)	1.31 (33.32)
		C	0.38 (9.65)	0.44 (11.18)	0.53 (13.46)	0.53 (13.46)
		D	1.50 (38.10)	1.50 (38.10)	2.38 (60.45)	1.50 (38.10)
		D1	1.13 (28.70)	1.13 (28.70)	1.75 (44.45)	1.13 (28.70)
		E	2.13 (54.10)	2.38 (60.45)	3.38 (85.85)	3.00 (76.20)
		F	3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	3.00 (76.20)
		G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)
		H*	4.65 (118.11)	4.91 (124.71)	6.43 (163.32)	5.53 (140.46)
		M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)
		N	0.50 (12.70)	0.50 (12.70)	0.50 (12.70)	0.50 (12.70)
		O	2.65 (67.31)	2.75 (69.85)	3.75 (96.25)	2.63 (66.80)
		P	0.63 (16.00)	0.63 (16.00)	0.63 (16.00)	0.63 (16.00)
		Q	1.50 (38.10)	1.50 (38.10)	1.50 (38.10)	1.75 (44.45)
		V	1.43 (36.32)	1.43 (36.32)	1.43 (36.32)	1.43 (36.32)
		X	0.50 (12.70)	0.50 (12.70)	0.63 (16.00)	0.75 (19.05)
		Y	0.50 (12.70)	0.50 (12.70)	0.75 (19.05)	0.63 (16.00)
		Z	0.31 (7.87)	0.31 (7.87)	0.50 (12.70)	0.31 (7.87)
Mounting Hole Diameter			.28 (7.11)	.28 (7.11)	.40 (10.16)	.40 (10.16)



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.

For complete information on available options, contact your Sales representative. 20DBNV Series valves are furnished with connection components unless otherwise specified.

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.

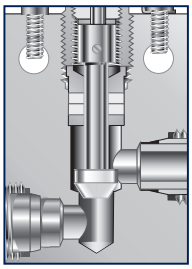
The Electrically Actuated Shut-off/Flow Regulating Actuator (FRC Series) is available for most of our Needle Valves through 9/16" tubing size and up to 60,000 psi maximum pressure. They are available in all body patterns except 3-Way / 2-Stem Manifold, and can withstand wide process temperature ranges.

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

Stem Options:

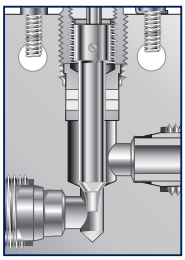
Most Parker Autoclave Engineers' valves are available with either Vee (on-off) or Regulating (Flow Control) Stems in our standard valve body seat or with our optional replaceable seat as shown below:

VEE Stem



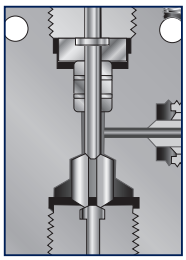
The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.

Regulating Stem



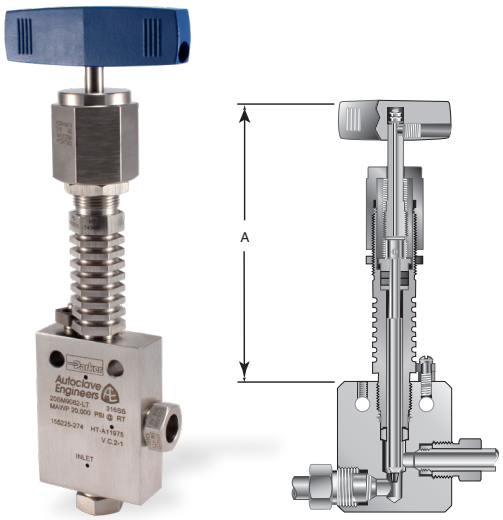
In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, Autoclave offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off. While it is not as precise as the control associated with the MicroMetering stem,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



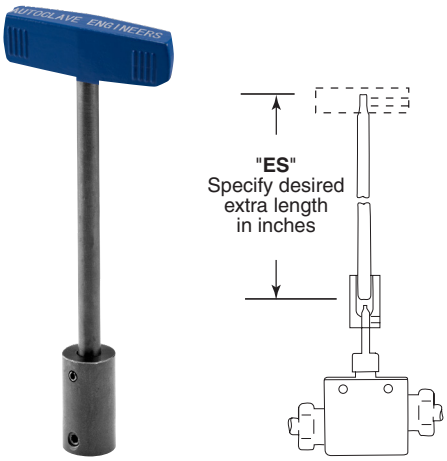
High/Low Temperature Extension:

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.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

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