

CV20 Control Valve

The CV20 is a rugged, compact, freezeless dump valve. The body can be installed so that the valve cage and plug are submerged into the process media giving the valve its freezeless characteristic. Typical installations include separators, scrubbers, and other production vessels.

The CV20's hammer union makes maintenance easy by allowing the topworks to be removed without taking the valve out of line.

Using the same trim set as the CV10 valve, the CV20 offers the versatility of multiple trim sizes and material options. A short body option, high pressure body option and a NACE option for sour service are also available.

Specifications

Connections:

2" Male NPT x 1" Female NPT (CV20, CV20HP, CV20S)

1" Female NPT x 1" Female NPT (CV20)

1" Male NPT x 1" Female NPT (CV20N)

Body Type: Freezeless Angle Body Design

Trim Characteristic: Quick Open, Modified Percent (Throttling)

Trim Size: 0.25", 0.375" (3/8"), 0.50"

Pressure Rating: 3000 psi (CV20 and CV20S), 1480 psi (CV20N), 5000 psi (CV20HP)

Temperature Range:

-20° F to 200° F (-29° C to 93° C) Standard

-50° F to 200° F (-46° C to 93° C) Low Temp

Shutoff: ANSI Class IV

Actuator Sizes: No. 35 (35 in² area), No. 70 (70 in² area)

Input Signal Ranges: 3-15 psi, 6-30 psi

Materials:

Body: A105 Steel, A350 LF2 (Low Temp Option)

Packing Plug: 304 Stainless Steel

Hammer Nut: A105 Steel, A350 LF2 (Low Temp Option)

Trim: 17-4 Stainless, Carbide (Optional)

Stem: 303 Stainless, 316 (Optional)

Actuator Housing: Carbon Steel

Approximate Weight:

With #35 Actuator: 25 lbs. (CV20), 23.5 lbs. (CV20N), 22 lbs. (CV20HP)

With #70 Actuator: 35 lbs. (CV20), 33.5 lbs. (CV20N and CV20S), 32 lbs. (CV20HP)



CV20 Reverse Acting

CV20 Non-Adjustable

Cv Values

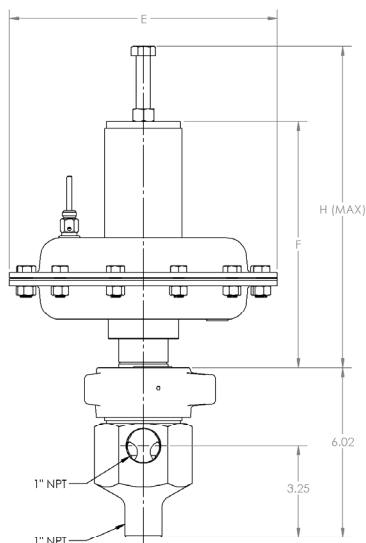
Cv Values at 100% Open		
Trim Size (in.)	Trim Type	
	Quick Open	Throttling
0.25	1.4	1.3
0.375	2.0	1.9
0.50	2.3	2.2

Dimensions

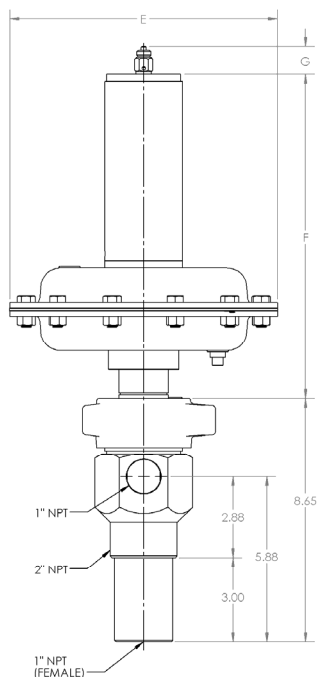
Actuator Assembly Dimensions (in.)						
Actuator Size	Direct Acting			Reverse Acting		
	E	F	G	E	F	H
No. 35, 3-15	9.50	11.51	5.50	9.50	8.76	10.91
No. 35, 6-30	9.50	13.13	7.00	9.50	10.63	11.91
No. 70, 3-15	12.50	13.10	7.00	12.50	10.63	13.24
No. 70, 6-30	12.50	16.42	10.00	12.50	12.38	15.00

Dimensions Continued

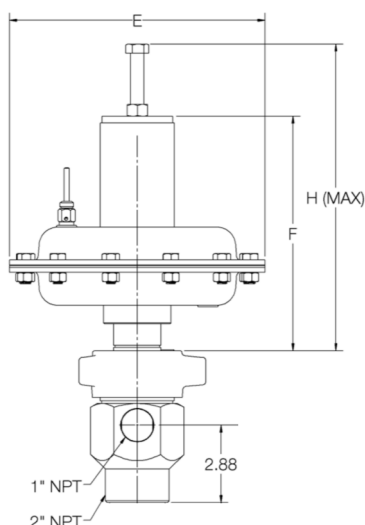
CV20N Reverse Acting



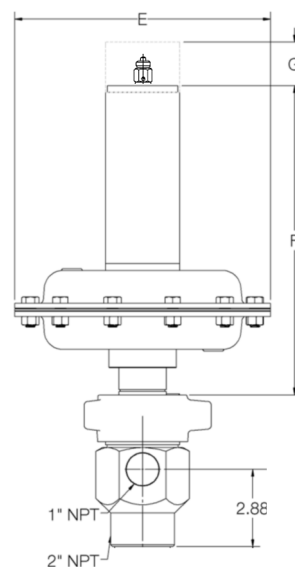
CV20 Direct Acting



CV20HP Reverse Acting



CV20HP Direct Acting



Shut-Off Pressures - CV20 Body (Non-HP)

Maximum Shut-Off Pressures For Direct Acting (Fail Open) Actuators

Trim Size (in.)	Flow Direction	Signal to No. 35 Act. ¹		Signal to No. 70 Act. ¹		Flow Direction	Signal to No. 35 Act. ¹		Signal to No. 70 Act. ¹	
		3 -15 Spring	6 -30 Spring	3 -15 Spring	6 -30 Spring		3 -15 Spring	6 -30 Spring	3 -15 Spring	6 -30 Spring
0.25	Up	4000	4000	4000	4000	Down	4000	4000	4000	4000
0.375		2700	4000	4000	4000		4000	4000	4000	4000
0.50		1370	2880	2540	4000		3800	4000	4000	4000

1. Controller supply must have at least 5 psi beyond the signal pressure required.

Maximum Shut-Off Pressures For Reverse Acting (Fail Closed) Actuators

Trim Size (in.)	Flow Direction	Signal to No. 35 Actuator				Signal to No. 70 Actuator			
		3 - 15 Spring		6 - 30 Spring		3 - 15 Spring		6 - 30 Spring	
		3-15 psig	0-20 psig	6 - 30 psig	0 - 35 psig	3 - 15 psig	0 - 20 psig	6 - 30 psig	0 - 35 psig
0.25	Up	3800	4000	4000	4000	4000	4000	4000	4000
0.375		2050	3280	3410	4000	3210	4000	4000	4000
0.50		1100	1680	1830	2300	1650	3190	4000	4000
0.25	Down	4000	4000	4000	4000	4000	4000	4000	4000
0.375		4000	4000	4000	4000	4000	4000	4000	4000
0.50		3350	4000	4000	4000	4000	4000	4000	4000

Shut-Off Pressures - CV20HP

Maximum Shut-Off Pressures For Direct Acting (Fail Open) Actuators

Trim Size (in.)	Flow Direction	Signal to No. 35 Act. ¹		Signal to No. 70 Act. ¹		Flow Direction	Signal to No. 35 Act. ¹		Signal to No. 70 Act. ¹	
		3 -15 Spring	6 -30 Spring	3 -15 Spring	6 -30 Spring		3 -15 Spring	6 -30 Spring	3 -15 Spring	6 -30 Spring
0.25	Up	4000	5000	5000	5000	Down	5000	5000	5000	5000
0.375		2700	4000	4000	5000		5000	5000	5000	5000
0.50		1370	2880	2540	5000		5000	5000	5000	5000

1. Controller supply must have at least 5 psi beyond the signal pressure required.

Maximum Shut-Off Pressures For Reverse Acting (Fail Closed) Actuators

Trim Size (in.)	Flow Direction	Signal to No. 35 Actuator				Signal to No. 70 Actuator			
		3 - 15 Spring		6 - 30 Spring		3 - 15 Spring		6 - 30 Spring	
		3-15 psig	0-20 psig	6 - 30 psig	0 - 35 psig	3 - 15 psig	0 - 20 psig	6 - 30 psig	0 - 35 psig
0.25	Up	3800	4750	5000	5000	5000	5000	5000	5000
0.375		2050	3280	3410	4000	3210	4000	5000	5000
0.50		1100	1680	1830	2300	1650	3190	4000	4000
0.25	Down	5000	5000	5000	5000	5000	5000	5000	5000
0.375		5000	5000	5000	5000	5000	5000	5000	5000
0.50		3350	5000	5000	5000	5000	5000	5000	5000

How to Order

Example Model No. **CV20-R33-CB-2Q**

CV20 Series Dump Valve, No. 35 Reverse Act, 3-15 Spring, Carbon Steel with Buna Seals, 0.25" Quick Open SST Trim

Style CV20 - Standard Body CV20N - 1" Male NPT Body CV20HP -5000 psi Body CV20S - Short Body	CV20- R 3 3 - C B - 2 Q
Actuator D - Direct (Fail Open) R - Reverse (Fail Close)	
Actuator Size 3 - #35 (9") 7 - #70 (12")	
Spring 3 - 3-15 psi 6 - 6-30 psi 0 - Non-Adjustable (#35 Actuator Only)	
Materials C - Carbon Steel N - Carbon Steel (NACE) T - Stainless Steel L - Low Temp Carbon Steel	
Seals B - Buna V - Viton® L - Low Temp Buna	
Trim Size 2 - 0.25" 3 - 0.375" (3/8") 4 - 0.50"	
Trim Type Q - Quick Open Stainless T - Throttling Stainless R - Quick Open Tungsten Carbide U - Throttling Tungsten Carbide	

Repair Kits Available

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10/2024