

## GRINNELL Model CV-1 Grooved End Swing Check Valves, Eastern Hemisphere Only 2 Inch to 12 Inch (DN50 to DN300)

### General Description

The GRINNELL Model CV-1 Grooved End Swing Check Valves are compact and rugged swing-type units that allow water flow in one direction and prevent flow in the opposite direction. They are manufactured with a ductile iron body and a nickel-plated seat.

- Sizes 2 in. to 8 in. (DN50 to DN200) have a stainless steel clapper assembly.
- Sizes 10 in. to 12 in. (DN250 to DN300) have a ductile iron clapper assembly.

A resilient elastomer seal facing on the spring-loaded clapper ensures a leak-tight seal and a non-sticking operation. The Model CV-1 Check Valves are designed to minimize water hammer caused by flow reversal.

The Model CV-1 Check Valve is furnished with grooved ends and can be installed using GRINNELL Grooved Couplings or Flanged Adapters. The Model CV-1 Check Valves have been designed with a removable cover for ease of field maintenance. These valves can be installed horizontally (with cover in the upward position) or vertically with the flow in the upward direction. Refer to Figure 4.

#### NOTICE

*The GRINNELL Model CV-1 Check Valves described herein must be installed and maintained in compliance with this document, in addition to the standards of any other authorities having jurisdiction. Failure to do so may result in serious personal injury or impair the performance of these devices.*

#### IMPORTANT

Refer to Technical Data Sheet G1100 for warnings pertaining to regulatory and health information.

*Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do so may result in serious personal injury, property damage, and/or impaired device performance.*

*It is the designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data are not exceeded. Material and gasket selection should be verified for compatibility with the specific application. Always read and understand the installation instructions.*

*The owner is responsible for maintaining their mechanical system and devices in proper operating condition. The installing contractor or device manufacturer should be contacted with any questions.*

### Technical Data

#### Approvals

Compliance with CE Pressure Equipment Directive (PED), Construction Products Directive (CPD), and Standards of Engineering Practice

- 2 in. to 12 in. (DN50 to DN300):  
UL and C-UL Listed  
FM Approved
- 2-1/2 in. to 10 in. (DN65 to DN250):  
VdS Approved Certificate No. G4060018

#### Sizes

2 in. to 12 in. (DN50 to DN300)

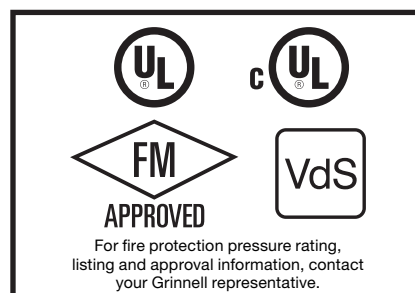
**Maximum Working Pressure**  
300 psi (20,7 bar)

#### Factory Hydro Test

100% at 600 psi (41,4 bar)  
The seat and shell comply with test requirements of MSS SP-71, 2005.

#### Body and Cover

Ductile iron conforming to  
ASTM A 536, Grade 65-45-12



For warranty terms and conditions, visit  
www.grinnell.com

#### Clapper

- 2 in. to 8 in. (DN50 - DN200)  
Stainless Steel
- 10 in. to 12 in. (DN250 - DN300)  
Ductile Iron

#### Clapper Facing

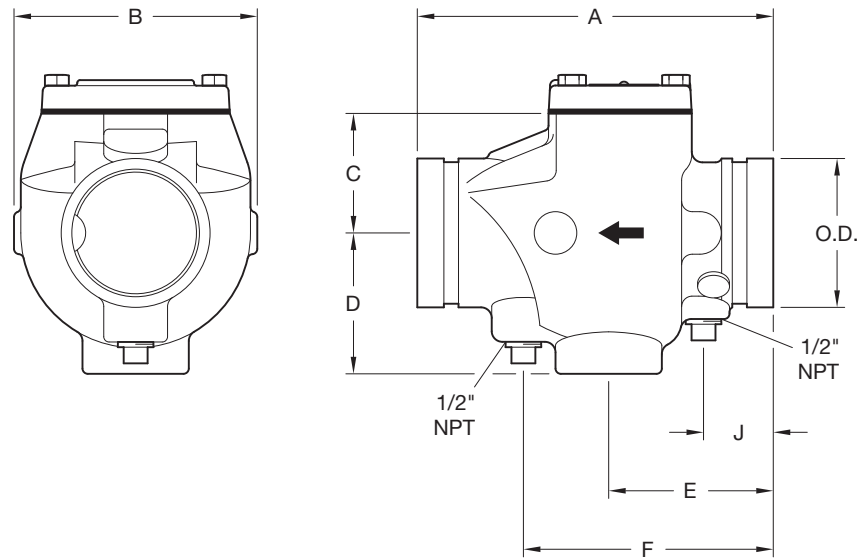
Grade "E" EPDM

#### Seat

Tin-Plated

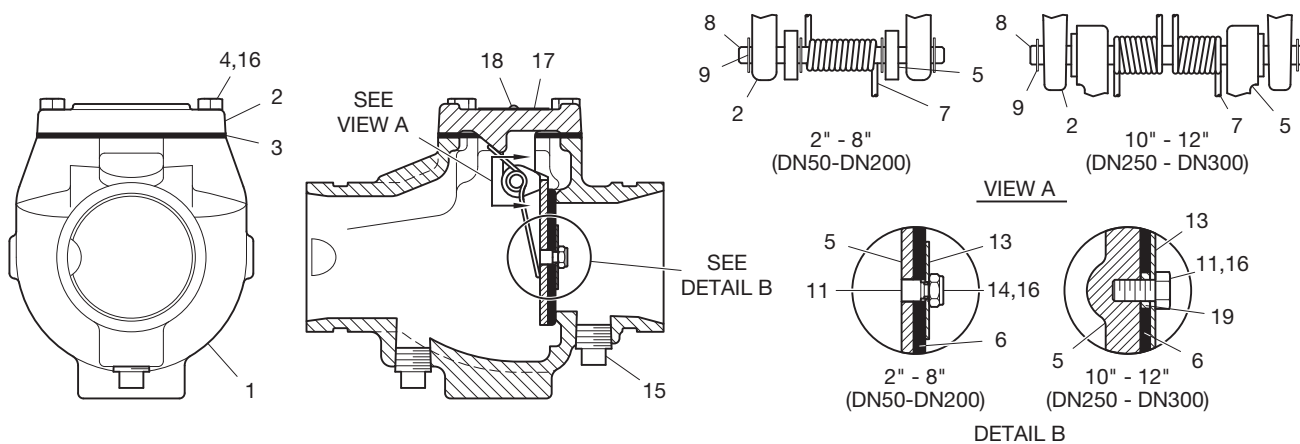
#### Valve Assembly Finish

Red, non-lead paint



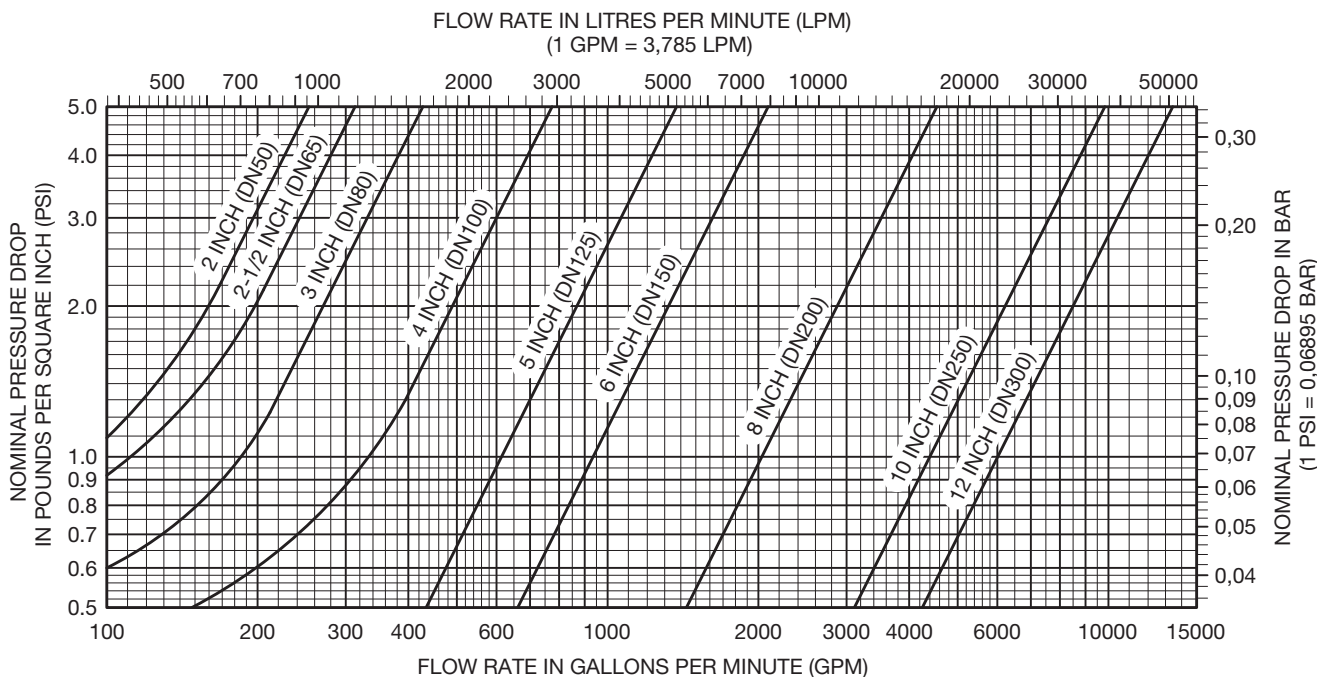
Nominal Pipe Size		Nominal Dimensions Inches mm							Cover Bolt Torq. Lbs-ft Nm	Approx. Weight Lbs. kg
ANSI Inches DN	O.D. Inches mm	A	B	C	D	E	F	J		
2 50	2.375 60,3	6.75 171,5	4.38 111,3	1.96 49,8	2.57 65,3	3.25 82,3	4.75 120,7	1.62 41,5	18 25	9.0 4,5
2-1/2 65	2.875 73,0	8.00 203,2	5.38 136,7	2.63 66,8	3.40 86,4	3.87 98,3	5.87 149,1	1.64 41,7	39 54	10.0 4,5
76,1 65	— 76,1	8.00 203,2	5.38 136,7	2.63 66,8	3.40 86,4	3.87 98,3	5.87 149,1	1.64 41,7	39 54	10.0 4,5
3 80	3.500 88,9	8.37 212,6	5.72 145,3	2.81 71,4	3.40 86,4	3.87 98,3	5.87 149,1	1.64 41,7	39 54	11.0 5,0
4 100	4.500 114,3	9.63 244,6	6.68 169,7	3.80 96,5	3.63 92,2	4.56 115,1	7.13 181,1	1.84 46,7	50 69	25.0 11,3
139,7 125	— 139,7	10.50 266,7	7.40 188,0	4.46 113,2	4.20 106,7	4.90 124,5	7.50 190,5	1.75 44,5	39 54	29.0 13,2
5 125	5.563 141,3	10.50 266,7	7.40 188,0	4.46 113,2	4.20 106,7	4.90 124,5	7.50 190,5	1.75 44,5	39 54	29.0 13,2
165,1 150	— 165,1	11.50 292,1	8.00 203,2	4.62 117,4	4.50 114,3	5.00 127,0	7.60 193,0	1.85 47,0	60 82	47.0 21,3
6 150	6.625 168,3	11.50 292,1	8.00 203,2	4.62 117,4	4.50 114,3	5.00 127,0	7.60 193,0	1.85 47,0	60 82	47.0 21,3
8 200	8.625 219,1	14.00 355,6	10.14 257,6	6.67 169,4	5.52 140,2	5.46 138,7	8.46 214,9	2.13 54,1	120 164	66.0 29,9
10 250	10.750 273,1	18.00 457,2	12.38 314,5	8.62 218,9	6.41 162,8	7.50 190,5	10.50 266,7	3.00 76,2	130 178	109.7 49,4
12 300	12.750 323,9	21.00 533,4	14.28 362,7	9.93 252,2	7.27 184,7	7.62 193,5	10.62 269,7	2.75 69,9	130 178	151.0 68,0

**FIGURE 1**  
**MODEL CV-1 GROOVED END SWING CHECK VALVES**  
**NOMINAL DIMENSIONS**

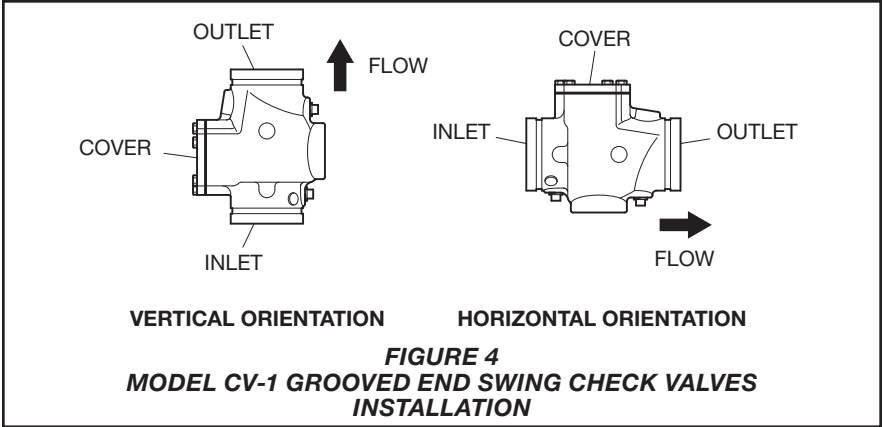


Detail	Part	Material	Qty.	Detail	Part	Material	Qty.	Detail	Part	Material	Qty.
1	Body	Ductile Iron	1	6	Clapper Facing	EPDM Grade "E"	1	14	Locknut	Stainless Steel	1
2	Cover	Ductile Iron	1	7	Spring	Stainless Steel	1	15	Plug-1/2"-14 NPT	Cast Iron	2
3	Cover Gasket	Nitrile Rubber	1	8	Hinge Shaft	Stainless Steel	1	16	Adhesive	Thread Sealer	AR
4	Hex Cap Screw	Steel, Zinc Plated	AR	9	Retaining Ring	Stainless Steel	AR	17	Nameplate	Aluminum	1
5	Clapper 2" - 8" (DN50-200)	Stainless Steel	1	11	Retention Bolt	Stainless Steel	1	18	Rivet	Steel	2
	Clapper 10"-12" (DN250-300)	Ductile Iron		13	Retaining Disc	Stainless Steel	1	19	Spacer	Stainless Steel	1

**FIGURE 2**  
**MODEL CV-1 GROOVED END SWING CHECK VALVES**  
**ASSEMBLY**



**FIGURE 3**  
**MODEL CV-1 GROOVED END SWING CHECK VALVES**  
**PRESSURE LOSS DATA**



## Installation

GRINNELL Model CV-1 Check Valves are to be installed in accordance with this section.

1. The arrow cast on the Body must point in the direction of the flow.
2. Valves installed vertically may be positioned with the flow in the upward direction.
3. Valves installed horizontally must be positioned with the Cap facing up. Refer to Figure 4.
4. Grooved end pipe couplings used with the Model CV-1 Check Valve must be installed in accordance with manufacturer's instructions.

**Note:** It is good practice to install valves a reasonable distance downstream from pumps, elbows, expanders, reducers, or other similar devices to extend the valve life.

## Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their system and devices in accordance with the applicable standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairment must be immediately corrected.

## Ordering Procedure

GRINNELL Products are available globally through a network of distribution centers. For the nearest distributor, visit [www.grinnell.com](http://www.grinnell.com). When placing an order, indicate the full product name and part number (P/N).

### Model CV-1 Check Valves

Specify: Size and P/N (below).

2 in. (DN50)	P/N 59-590-0-020
2-1/2 in. (DN65)	P/N 59-590-0-025
76,1 mm (DN65)	P/N 59-590-0-076
3 in. (DN80)	P/N 59-590-0-030
4 in. (DN100)	P/N 59-590-0-040
139,7 mm (DN125)	P/N 59-590-0-139
5 in. (DN125)	P/N 59-590-0-050
165,1 mm (DN150)	P/N 59-590-0-165
6 in. (DN150)	P/N 59-590-0-060
8 in. (DN200)	P/N 59-590-0-080
10 in. (DN250)	P/N 59-590-0-100
12 in. (DN300)	P/N 59-590-0-120