



## **GRINNELL Model 590 Grooved End Swing Check Valves 2 thru 12 Inch (DN50 thru DN300)**

### **General Description**

The GRINNELL Model 590 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 thru 8 Inch (DN50 thru DN200) have a stainless steel clapper assembly.
- Sizes 10 thru 12 Inch (DN250 thru 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 590 Check Valves are designed to minimize water hammer caused by flow reversal.

The Model 590 Check Valve is furnished with grooved ends and can be installed using GRINNELL Grooved Couplings or Flanged Adapters. The Model 590 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 (Ref. Figure 4).

#### **NOTICE**

*The GRINNELL Model 590 Check Valve 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.*

*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. Contact the installing contractor or product manufacturer with any questions.*



### **Technical Data**

#### **Sizes**

2 thru 12 Inch (DN50 thru 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 A536, Grade 65-45-12

#### **Clapper**

- 2 thru 8 Inch (DN50 thru DN200)  
Stainless Steel
- 10 thru 12 Inch (DN250 thru DN300)  
Ductile Iron

#### **Clapper Facing**

Grade "E" EPDM or  
Grade "T" Nitrile

#### **Seat**

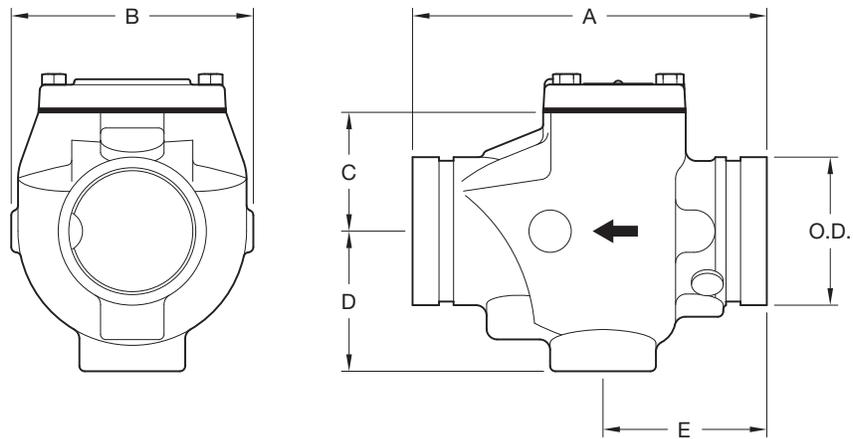
Nickel Plated

#### **Valve Assembly Finish**

Black, non-lead paint

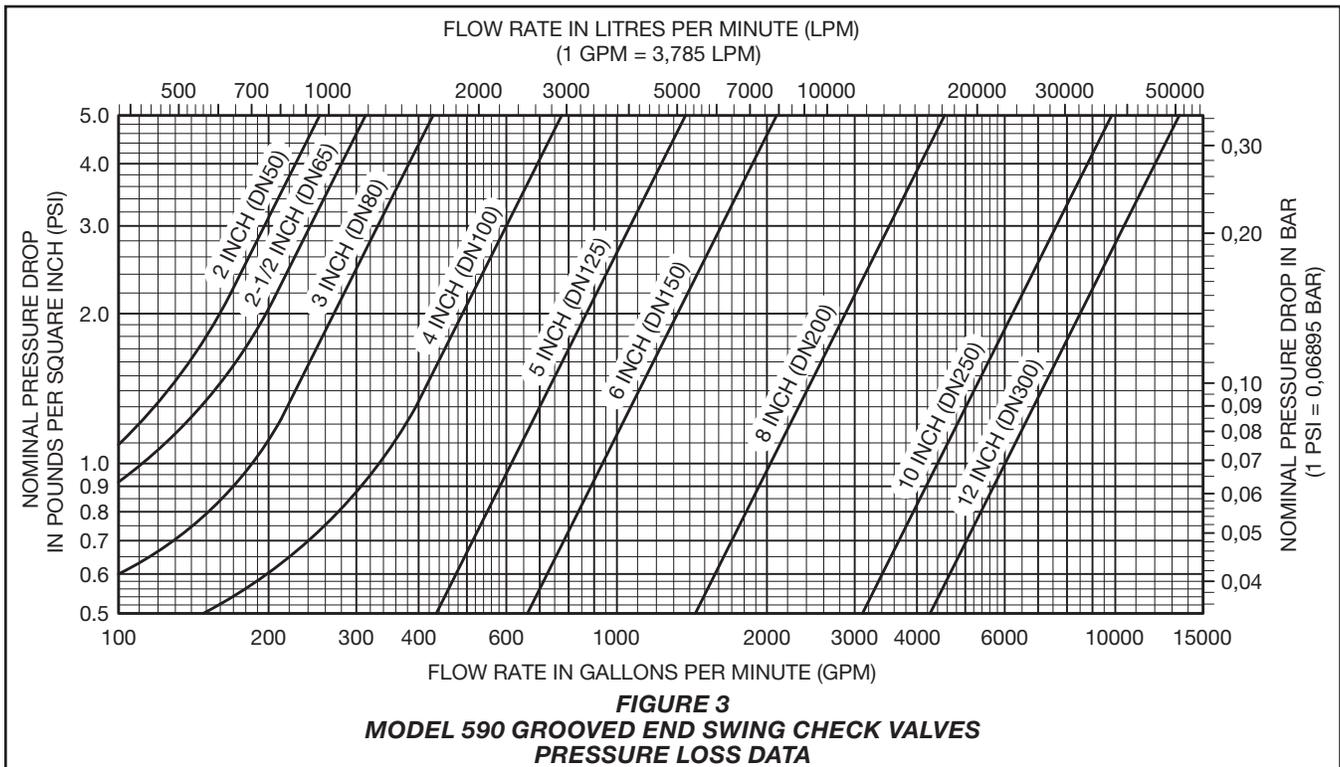
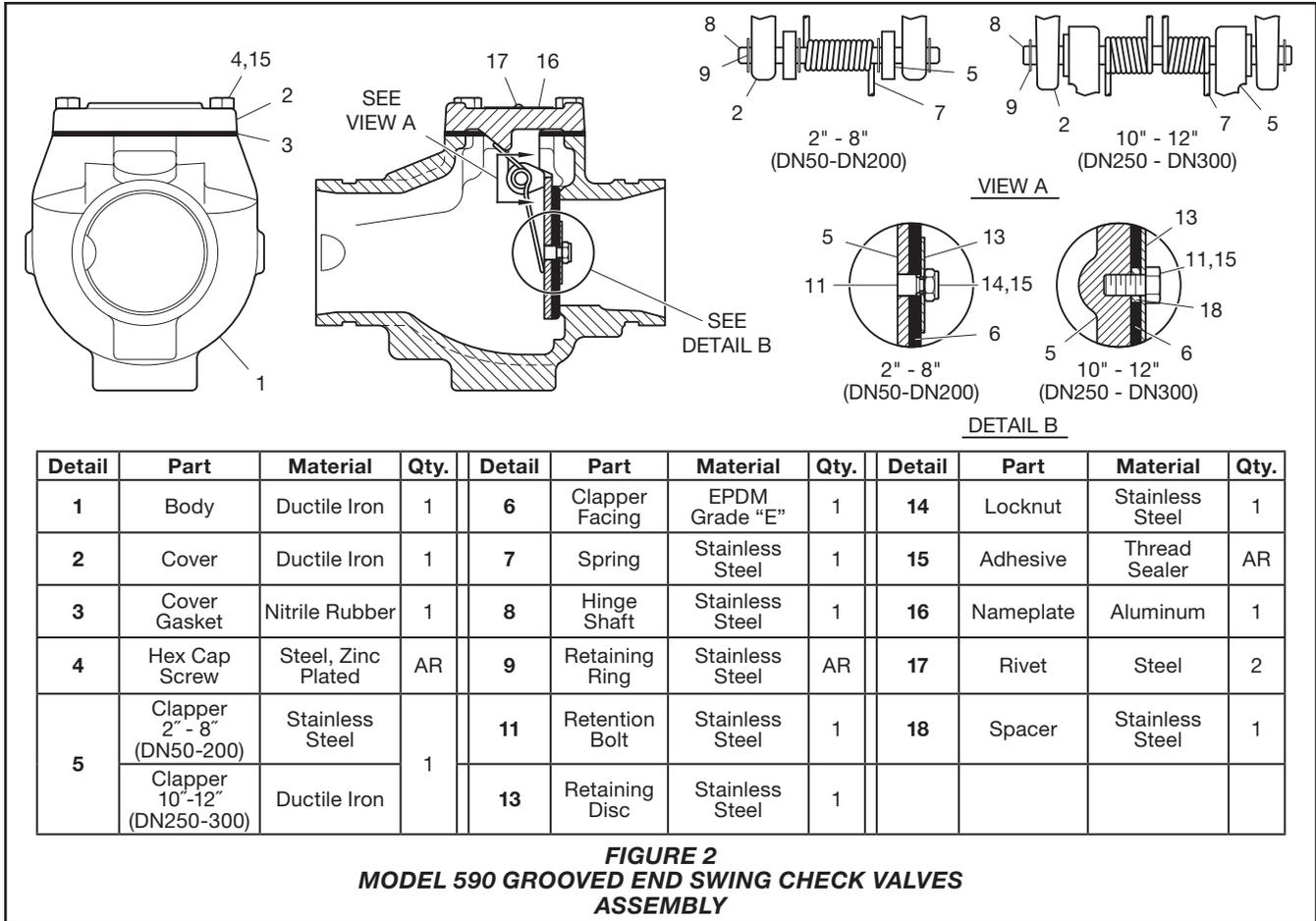
**10  
YEAR  
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WARRANTY**

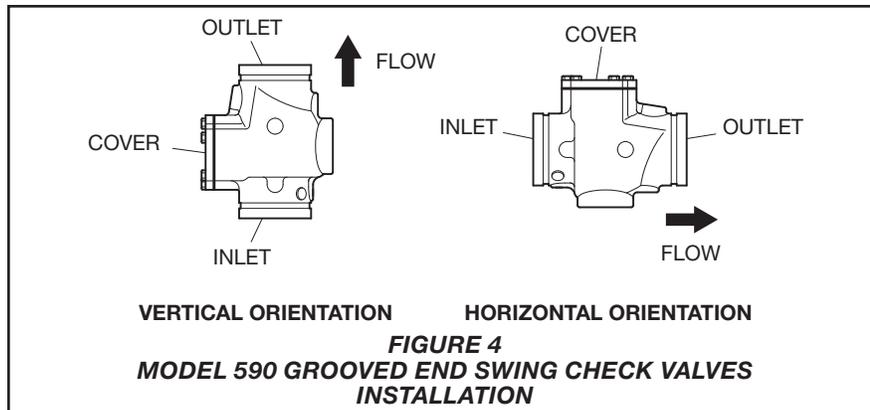
For warranty terms  
and conditions, visit  
[www.grinnell.com](http://www.grinnell.com)



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		
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	18 25	9.0 4,5
2-1/2 65	2.875 73,0	8.00 203,2	5.38 136,7	2.63 66,7	3.09 78,5	3.87 98,3	39 54	10.0 4,5
76,1 65	- 76,1	8.00 203,2	5.38 136,7	2.63 66,7	3.09 78,5	3.87 98,3	39 54	10.0 4,5
3 80	3.500 88,9	8.37 212,6	5.72 145,3	2.81 71,4	3.31 84,1	3.87 98,3	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	4.53 115,4	50 69	25.0 11,3
5 125	5.563 141,3	10.50 266,7	7.40 188,0	4.46 113,3	4.13 104,9	4.90 124,5	39 54	29.0 13,2
139,7 125	- 139,7	10.50 266,7	7.40 188,0	4.46 113,3	4.13 104,9	4.90 124,5	39 54	29.0 13,2
6 150	6.625 168,3	11.50 292,1	8.00 203,2	4.62 117,3	4.50 114,3	5.00 127,0	60 82	47.0 21,3
165,1 150	- 165,1	11.50 292,1	8.00 203,2	4.62 117,3	4.50 114,3	5.00 127,0	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	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	130 178	109.7 49,4
12 300	12.750 323,9	21.0 533,4	14.28 362,7	9.93 252,2	7.27 184,7	7.62 193,5	130 178	151.0 68,0

**FIGURE 1**  
**MODEL 590 GROOVED END SWING CHECK VALVES**  
**NOMINAL DIMENSIONS**





## Installation

GRINNELL Model 590 Check Valves are to be installed in accordance with this section.

**Step 1.** The arrow cast on the Body must point in the direction of the flow.

**Step 2.** Valves installed vertically may be positioned with the flow in the upward direction.

**Step 3.** Valves installed horizontally must be positioned with the Cap facing up. Refer to Figure 4.

**Step 4.** Grooved end pipe couplings used with the Model 590 Check Valve must be installed in accordance with manufacturer's instructions.

**Note:** Valves should be installed a reasonable distance downstream from pumps, elbows, expanders, reducers, or other similar devices to extend the valve life. Standard piping practices call for a minimum of five (5) times the pipe diameter for general use.

## 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. Contact the installing contractor or product manufacturer with any questions. Any impairment must be immediately corrected.

## Ordering Procedure

GRINNELL products are available globally through a network of distribution centers. Visit [www.grinnell.com](http://www.grinnell.com) for the nearest distributor.

When placing an order, indicate the full product name.

### Model 590 Grooved End Swing Check Valves

Specify the following:

- Quantity
- Size (Inch or DN)
- Clapper Facing:  
Grade "E" EPDM or  
Grade "T" Nitrile