

# CHECK VALVES

## Model 590 Grooved End Check Valve

Grinnell® Model 590 Check Valves are capable of pressures up to 300 psi (20.7 Bar) and are designed as 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, nickel seat and a stainless steel clapper assembly for sizes 2"-8" (60.3mm - 219.1 mm), and a ductile iron clapper assembly for sizes 10"-12" (273.0mm - 323.9 mm). A resilient elastomer seal facing on the spring loaded clapper ensures a leak tight seal and a non-sticking operation. All Model 590 Check Valves are designed to minimize water hammer caused by flow reversal.

The valves are furnished with grooved ends and can be installed using grooved couplings. The Model 590 can be installed with ANSI class 150 Flanges utilizing our Figure 71 flange adapters and also ANSI class 300 Flange Adapters. All Model 590 Check Valves have been designed with a removable cover for ease of field maintenance. They may be installed in either horizontal or vertical piping systems with the flow in the upward or downward direction.



Tech Data: G350

## MATERIAL SPECIFICATIONS

### Ductile Iron Body & Cap Specifications

- ASTM A-536 - Standard Specification for Ductile Iron Castings Grade 65-45-12
- Tensile Strength, minimum psi-65,000 (MPa-448)
- Yield Strength, minimum psi-45,000 (MPa-310)
- Elongation in 2" (50mm), minimum 12%

### Seat

Nickel

### Coating

Non-lead paint

### Seal Specifications

Grade "E" EPDM seals have a green color code identification and conform to ASTM D-2000 for service temperatures from -30°F (-34°C) to 230°F (110°C). They are recommended for hot water not to exceed 230°F (110°C), plus a variety of dilute acids, oil free air and many chemical services. They are not recommended for petroleum services.

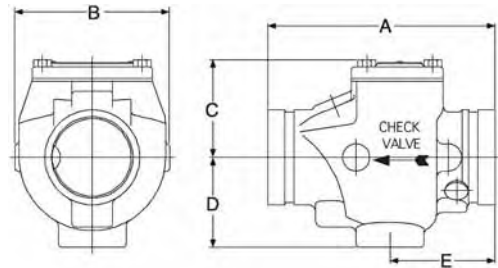
Grade "T" Nitrile seals have an orange color code identification and conform to ASTM D-2000 for service temperatures from -20°F (-29°C) to 180°F (82°C). They are recommended for petroleum products, vegetable oils, mineral oils, and air with oil vapors.

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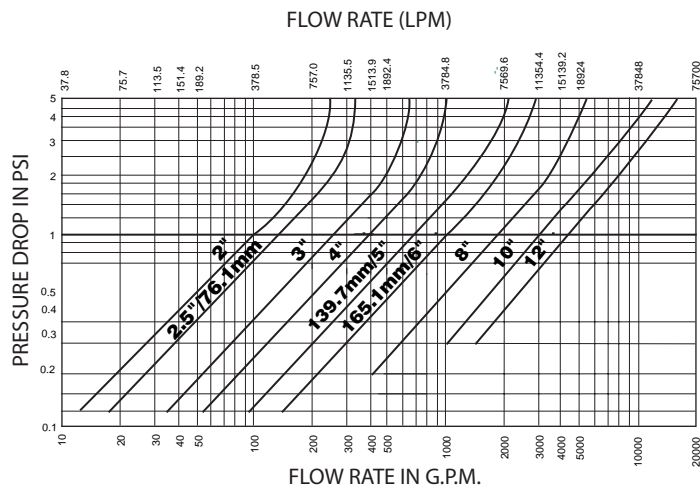
Nominal Size	Nominal Dimensions					Cover Bolt Torque	Approx. Weight
	A	B	C	D	E		
Inches mm	Inches mm	Inches mm	Inches mm	Inches mm	Inches mm	Lb.-ft/mm	Lbs. Kg
2	6.75	4.38	2.55	2.57	3.25	15	9.0
50	171.5	111.3	64.8	65.3	82.3	21	4.5
2½	8.00	5.42	3.41	3.09	3.88	39	10.0
65	203.2	136.7	86.6	78.5	98.6	54	4.5
76.1mm	8.00	5.42	3.41	3.09	3.88	39	10.0
	203.2	136.7	86.6	78.5	98.6	54	4.5
3	8.38	5.76	3.60	3.31	3.88	39	11.0
80	212.9	146.3	91.4	84.1	98.6	54	5.0
4	9.63	6.74	4.61	3.63	4.53	39	25.0
100	245.6	171.2	117.1	92.2	115.4	54	11.3
139.7mm	10.50	7.50	5.29	4.13	4.90	39	29.0
	266.7	190.5	134.4	104.9	124.5	54	13.2
5	10.50	7.50	5.29	4.13	4.90	39	29.0
125	266.7	190.5	134.4	104.9	124.5	54	13.2
165.1mm	11.50	8.05	5.75	4.50	5.00	60	47.0
	292.1	204.4	146.1	114.3	127.0	82	21.3
6	11.50	8.05	5.75	4.50	5.00	60	47.0
150	292.1	204.4	146.1	114.3	127.0	82	21.3
8	14.00	10.25	7.75	5.62	5.45	120	66.0
200	355.6	260.4	196.9	142.7	138.4	164	30.0
10	18.00	13.00	10.21	6.38	7.50	120	109.7
250	457.2	330.2	259.3	162.1	190.5	164	49.4
12	21.0	14.28	11.31	7.26	7.62	120	151.0
300	533.4	362.7	287.2	184.4	193.5	164	68.0



Please refer to General Notes on page 14.

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## PERFORMANCE



Note: It is good piping practice to apply a safety factor of 15% to 20% to the values in the above table.