

Check Valve Fig. 90G



The Fig. 90G Check Valve is designed for use with Gruvlok couplings, an ASC Engineered Solution, for fast and easy installation on grooved pipe.

Grooved ends conform to the requirements of AWWA C606.

The valve is fitted with a large bonnet closure for ease of field servicing

All Fig. 90G Check Valves are supplied with a ½" NPT pipe plug installed in the bonnet cap.

The valve is available with Bonnet Gaskets and Clapper Seals made from EPDM or Nitrile.

Performance

Pressure Rating: 300 psi (20.7 bar) maximum working pressure.

The Fig 90G must be installed with the arrow on the valve body point in the direction of flow through the pipeline. This valve must be installed on horizontal pipelines only.

Material Specifications

Body

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

Bonnet Cap

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

Bonnet Coupling Housing

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

Clapper

Type 316 Stainless Steel

Clapper Pin

Type 316 Stainless Steel

Bushing

PTFE

Clapper Seat/Bumper/Bonnet Gasket

Grade E (EPDM):

-40°F to 230°F (-40°C to 110°C) (Service Temperature Range)

Recommended for water service, dilute acids, alkaline, oil-free air and many chemical services.

Not For Use In Petroleum Services.

Grade T (Nitrile):

-20°F to 180°F (Service Temperature Range)
(-29°C to 82°C)

Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils.

Not For Use In Hot Water Services.

Plugs

Malleable iron conforming to ASTM A 47, galvanized.

Closure Bolts & Nuts

Heat treated, oval-neck track head bolts conforming to ASTM A-183 Grade 2 with a minimum tensile strength of 110,000 psi and heavy hex nuts of carbon steel conforming to ASTM A-563 Grade A or Grade B, or SAE J995 Grade 2. Bolts and nuts are provided zinc electroplated.

Check Valve Fig. 90G

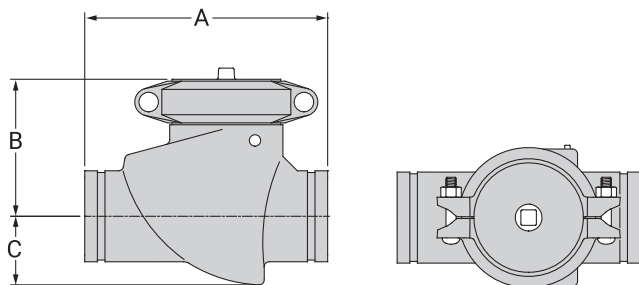


Fig. 90G Check Valve

Nominal Size	O.D.	Nominal Dimensions			Approx. Wt. Ea.
		A	B	C	
In./DN(mm)	In./mm	In./mm	In./mm	In./mm	Lbs./Kg.
2	2.375	9.02	5.12	1.85	11.4
50	60.3	229	30	47	5.2
2½	2.875	9.25	5.34	2.24	21.3
65	73.0	235	136	57	9.7
3	3.500	10.75	5.71	2.76	16.0
80	88.9	273	145	70	7.3
4	4.500	12.01	6.42	3.31	33.3
100	114.3	305	163	84	15.1

C_v Values

Size		Flow Coefficients – C _v Full Open Valve
Nominal Diameter	Actual Outside Diameter	
In./mm	In./mm	
2	2.375	80
50	60.3	–
2½	2.875	134
65	73.0	–
3	3.500	210
80	88.9	–
4	4.500	430
100	114.3	–

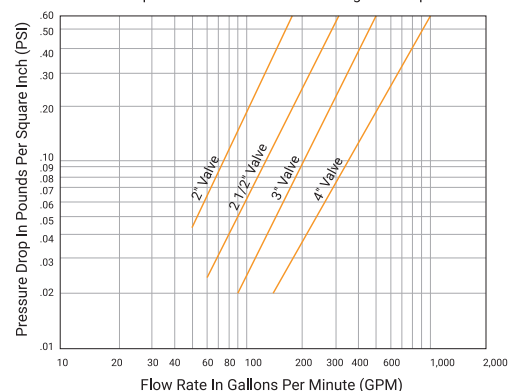
C_v values for flow of water are with a full open valve.

Important Note:

The Fig 90G check valve life may be shortened and system damage may occur if check valves are installed too close to a source of unstable flow. Check valves must be installed at a reasonable distance away from pumps, elbows, expanders, reducers or other similar devices. Sound piping practices dictate a minimum of five (5) times the pipe diameter for general use. Distances between three (3) and five (5) diameters are allowable provided the flow velocity is less than 8 feet per second. Distances less than 3 diameters are not recommended.

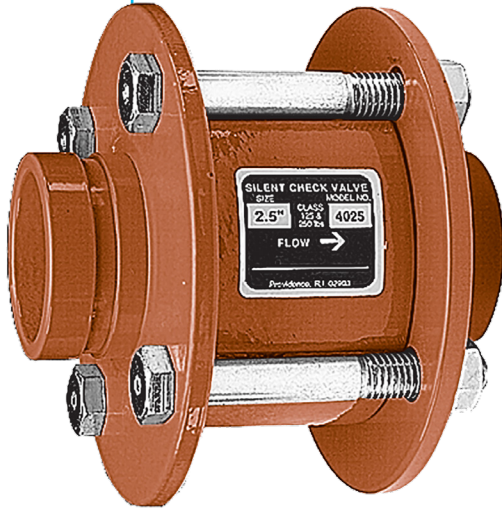
Flow Characteristics

The chart below expresses the flow of water through a full open valve.



Grooved-End Silent Check Valve Fig. 400G

Available in Sizes
2" thru 10"



The 400G is a center guided, spring loaded, silent check valve. Designed and engineered for silent operation with low head loss, the valve disc will close prior to the reversal of flow, thereby preventing or minimizing water hammer and damaging shock.

- The 400G can be used in any HVAC, industrial or commercial grooved piping systems.
- The valve is designed for liquid service with any pipe orientation, flow up or down.
- Bronze metal seats are standard, with Stainless Steel or resilient seats available as an option.
- Flow coefficients for this valve are some of the lowest in the industry and are listed for each size on the drawing.

Note: Valve is designed for liquid service only. Install 3 to 4 pipe diameters downstream from pump discharge or elbows to avoid flow turbulence.

Material Specifications

Standard Materials

Cast Iron body ASTM A 48, Class 35
Bronze Disc and Seat ASTM B 584 Alloy 838
Ductile Iron Grooved-Ends ASTM A 395

Optional Trim Materials

Bronze with Nitrile seats
Stainless Steel seats
Stainless with Nitrile seats

1. Body: Cast Iron ASTM A 48, Class 35

2. Seat: Bronze ASTM B 584, Copper Alloy 838

3. Plug: Bronze ASTM B 584, Copper Alloy 838

4. Spring: Stainless Steel T304, ASTM A 313

5. Bushing: Bronze ASTM B 584,
Copper Alloy 836

6. Screws: Stainless Steel T304, ASTM A 276

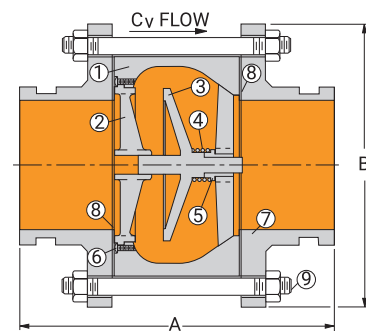
7. Grooved-End: Ductile Iron ASTM A 395

8. Gasket: Non Asbestos

For gasket grade recommendations see the Technical Data section

9. Bolts: Carbon Steel

Other materials and resilient seats are available. contact your Sales representative.



Grooved-End Silent Check Valve Fig. 400G

Available in Sizes 2" thru 10"

Fig. 400G Grooved-End Silent Check Valve

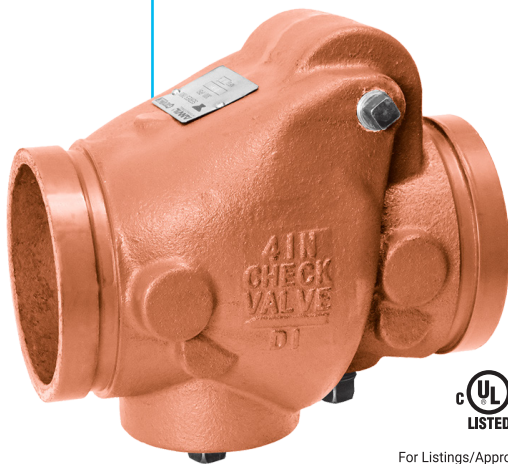
Valve Size	O.D.	Model	A	B	C _v Flow *	Approx Wt. Each
In./mm	In./mm	Number	In./mm	In./mm		Lbs./Kg
2 50	2.375 60.3	402G	6 152	6 152	66 1,676	12 5.4
2½ 65	2.875 73.0	4025G	6¼ 159	7 178	88 2,235	15 6.8
3 80	3.500 88.9	403G	6⅞ 164	7½ 191	130 3,302	20 9.1
4 100	4.500 114.3	404G	8⅞ 206	9 229	228 5,791	36 16.3
5 125	5.563 141.3	405G	11¼ 286	10 254	350 8,890	50 22.7
6 150	6.625 168.3	406G	12¼ 311	11 279	520 13,208	68 30.8
8 200	8.625 219.1	408G	13¾ 349	13½ 343	900 22,860	140 63.5
10 250	10.75 273.1	410G	16 406	16 406	1,450 36,830	198 89.8

*Flow coefficient is the number of U.S. gallons/minute of 60° F (16° C) water that will flow through a valve with 1 psi (0.069 bar) of pressure drop across the valve.

Max. Non-Shock Working PSI 125# ANSI B16.1 Flange Rating

Size	Temperature	
2" - 10"	150°F 65°C	200°F 90°C
	200 PSI	190 PSI
	13.8 bar	13.1 bar

Check Valves for use in Grooved-End Piping Systems Series 7800



For Listings/Approval Details and Limitations, visit our website at www.asc-es.com or contact an ASC Engineered Solutions Sales Representative.

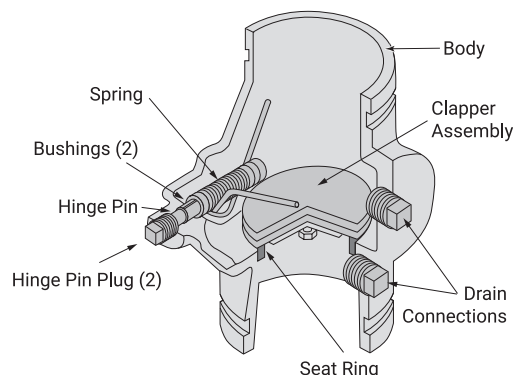
The Gruvlok Series 7800 Check Valve is a compact, cost effective valve offering low pressure-drop, non-slam performance. The Series 7800 Check Valve assembly is lighter and faster to install, and costs less than flanged and wafer valve assemblies.

In the fully open position the Series 7800 swing clapper is held tightly against the valve body, out of the flow stream, to provide maximum flow area and prevention of clapper flutter. The clapper design produces quick, non-slam closure before flow reversal can occur, while meeting FM requirements for an anti-water hammer valve rating.

Each valve is hydrostatically tested for leak tightness to 500 PSI. The clapperseat design permits leak free sealing of back pressures in service conditions ranging from 300 PSI (20.7 bar) to as low as 1 PSI (0.07 bar) (head pressure: 28").

Performance

Pressure Rating: Commercial Applications – Sizes 2" thru 12" inclusive, 300 psi (20.7 bar) maximum working pressure.



Material Specifications

Body

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

Coating

Rust inhibiting paint on exterior and interior – color: orange enamel

Clapper

2" – 5" Type 304 or 302 stainless steel to ASTM A 167

6" – 12" Ductile iron conforming to ASTM A 536, Grade 65-45-12

Clapper Facing

Grade E EPDM: -40° to 230°F (-40° to 110°C)

Service Temperature Range

Recommended for water service, dilute acids, alkaline, oil-free air and many chemical services.

Not For Use In Petroleum Services.

Grade T Nitrile: -20° to 180°F (-29° to 80°C)

Service Temperature Range

Recommended for petroleum products, air with oil vapors, vegetable oils and mineral oils.

Not For Use In Hot Water Services.

Seat Ring

Type 304 stainless steel to ASTM A 123, ASTM A 213, ASTM A 312 or ASTM A 269

Spring

Type 302 stainless steel to ASTM A 313

Hinge Pin

Type 304 or 302 stainless steel to ASTM A 580

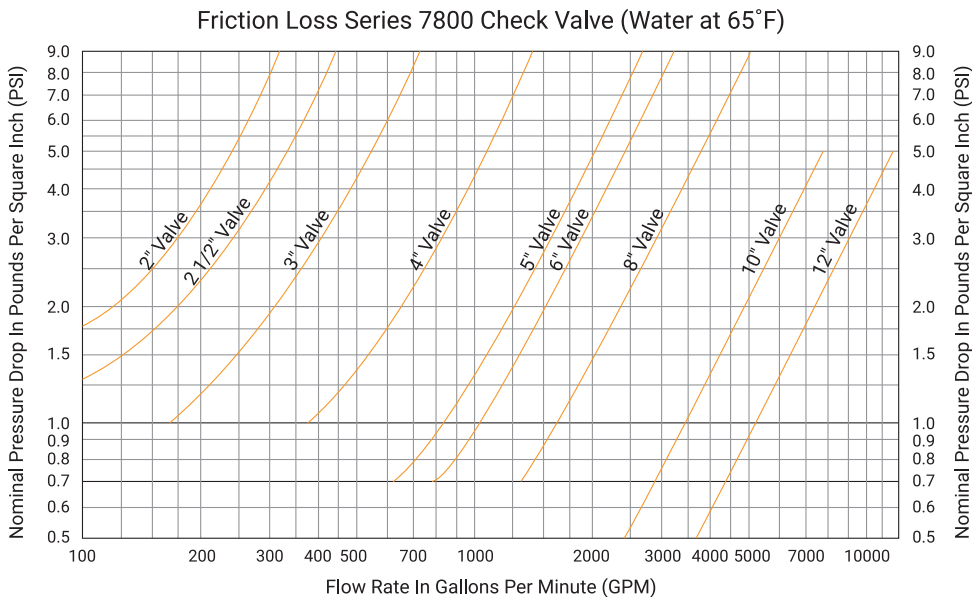
Hinge Pin Bushings

Sintered bronze to ASTM B 438

Hinge Pin Plugs & Drain Plugs

Cast iron to ASTM A 126 Class A

Check Valves for use in Grooved-End Piping Systems Series 7800



Flow Data - Friction Loss (Ft. of Pipe)

Valve Size	O.D.	C=100			C=120		
		Sch. 10	Sch. 30	Sch. 40	Sch. 10	Sch. 30	Sch. 40
In./mm	In./mm	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m
2	2.375	10	—	8	14	—	11
50	60.3	3.0	—	2.4	4.3	—	3.4
2½	2.875	14	—	10	20	—	15
65	73.0	4.3	—	3.0	6.1	—	4.6
3	3.500	17	—	12	23	—	17
80	88.9	5.2	—	3.7	7.0	—	5.2
4	4.500	17	—	13	23	—	18
100	114.3	5.2	—	4.0	7.0	—	5.5
5	5.563	14	—	11	20	—	15
125	141.3	4.3	—	3.4	6.1	—	4.6
6	6.625	23	—	19	33	—	26
150	168.3	7.0	—	5.8	10.1	—	7.9
8	8.625	35	32	30	50	45	43
200	219.1	10.7	9.8	9.1	15.2	13.7	13.1
10	10.750	28	25	24	40	36	34
250	273.1	8.5	7.6	7.3	12.2	11.0	10.4
12	12.750	31	28	26	44	39	37
300	323.9	9.4	8.5	7.9	13.4	11.9	11.3

Flow Data

The approximate friction losses, based on the Hazen and Williams formula, expressed in equivalent length of pipe is given below.

The friction losses have been calculated on the basis of flow rates typically used with each size valve.

Important Note:

Check valve life may be shortened and system damage may occur if check valves are installed too close to a source of unstable flow. Check valves must be installed at a reasonable distance away from pumps, elbows, expanders, reducers or other similar devices. Sound piping practices dictate a minimum of five (5) times the pipe diameter for general use. Distances between three (3) and five (5) diameters are allowable provided the flow velocity is less than 8 feet per second. Distances less than 3 diameters are not recommended.

This valve may be installed vertically or horizontally. In a horizontal installation, the hinge pin is to be located on top.

Not for use in copper systems.

Check Valves for use in Grooved-End Piping Systems Series 7800

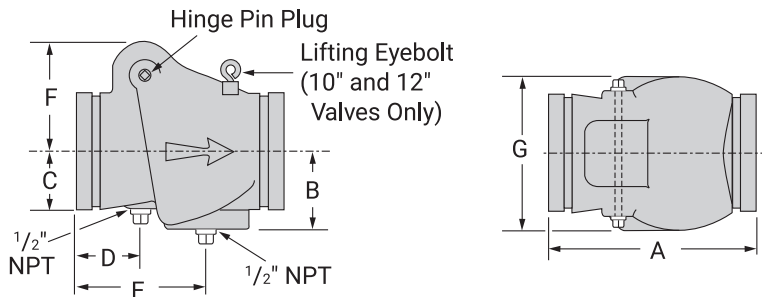


Fig. 7800 Check Valve

Valve Size	O.D.	Nominal Dimensions							Approx. Wt. Ea.
		A	B	C	D	E	F	G	
In./mm	In./mm	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m	Ft./m
2	2.375	6 ³ / ₄	2 ³ / ₈	1 ⁷ / ₁₆	1 ³ / ₄	4 ¹ / ₂	3 ³ / ₁₆	4 ³ / ₈	7.5
50	60.3	171	60	36	44	114	81	111	3.4
2½	2.875	7¼	2 ⁷ / ₁₆	1 ⁹ / ₁₆	1 ³ / ₄	3 ¹³ / ₁₆	3 ⁵ / ₈	4½	10.5
65	73.0	184	61	39	44	96	92	114	4.8
3	3.500	7¾	2 ⁵ / ₈	2	1 ⁹ / ₁₆	4 ¹ / ₁₆	3 ¹¹ / ₁₆	4 ¹⁵ / ₁₆	11.5
80	88.9	197	67	51	46	103	93	125	5.2
4	4.500	8⅞	3⅞	2¼	2½	5 ¹ / ₁₆	4¼	6	13.5
100	114.3	206	79	57	64	128	108	152	6.1
5	5.563	9¾	3½	2¾	2 ⁷ / ₁₆	5 ¹³ / ₁₆	4 ⁵ / ₈	6¾	19.0
125	141.3	248	89	70	61	147	117	171	8.6
6	6.625	12¾	4¼	3 ⁵ / ₁₆	3⅞	6¼	6¾	8½	33.5
150	168.3	324	108	84	79	159	171	216	15.2
8	8.625	14¾	5⅞	3 ¹⁵ / ₁₆	4	5 ¹⁵ / ₁₆	8	10¼	59.0
200	219.1	365	128	100	102	150	203	260	26.8
10	10.750	18	6 ⁵ / ₁₆	4 ¹⁵ / ₁₆	4 ⁹ / ₁₆	6 ⁷ / ₈	9 ³ / ₁₆	12 ¹¹ / ₁₆	130.0
250	273.1	457	160	125	115	175	233	322	59.0
12	12.750	21	7 ⁵ / ₁₆	6	5 ¹ / ₁₆	7¼	10 ³ / ₈	14¾	183.0
300	323.9	533	185	152	128	184	264	375	83.0

Series 7800 Check Valves (Ordering Information)

Sample Part Number 4" 7811-->	4"	78	1	1	X
	Size	Series	Clapper Facing Material	Body Finish	Special Configuration
	2" - 12"	78 - 7800	1 - EPDM (Std) 2 - Nitrile (Std)	1 - Painted (Std)	2 - Other *

*Contact an ASC Engineered Solutions representative for more information.

Dual Disc Check Valve Fig. CV890



The Fig. CV890 Dual Disc Check Valve is a grooved end, dual disc check valve used for pipelines to convey water and other fluids with a rated working pressure up to 300 psi (20.7 bar). This Dual Disc Check Valve is available in sizes from 14 inches (350 mm) to 24 inches (600 mm).

The Fig. CV890 Dual Disc Check Valve features a fully lined rubber body, spring-loaded 304 stainless steel disc and shafts. The Dual Disc Check Valve can be installed in a horizontal or vertical position (upward flow only). A lifting lug is provided with the assembly for ease of handling. The face to face dimensions conforms to API 594 Class 150 and grooved end dimensions to ANSI/AWWA C606. The seat and shell pressure tests conform to MSS SP-136 or higher.

The Fig. CV890 Dual Disc Check Valve is lighter than conventional swing check valves and is easier to install, utilizing only two grooved couplings. It is more economical than wafer or lugged valves. The Dual Disc Check Valve design produces less water hammer than a single disc valve. The spring-loaded disc design provides for positive closing. The fully lined rubber body and soft seat reduces noise and maintenance.

Maximum Working Pressure: 300 psi (20.7 bar) @ 100°F (38°C)

Material Specifications

Body

Ductile iron conforming to ASTM A536, Gr. 65-45-12

Body Lining

- Grade Nitrile – For service temperatures from -20°F to 230°F (-29°C to 110°C). Recommended for petroleum products, mineral oils, vegetable oils, aromatic hydrocarbons, acids and water <150°F (+65°C).

Note: Not recommended for use in hot water services.

- Grade EPDM – For service temperatures from -30°F to 230°F (-34°C to 110°C). For general service. Recommended for water service, dilute acids, alkalies, oil-free air and many chemical services.

Note: Not recommended for use in petroleum services.

Disc

Stainless Steel Type 304

Disc Shafts

Stainless Steel Type 304

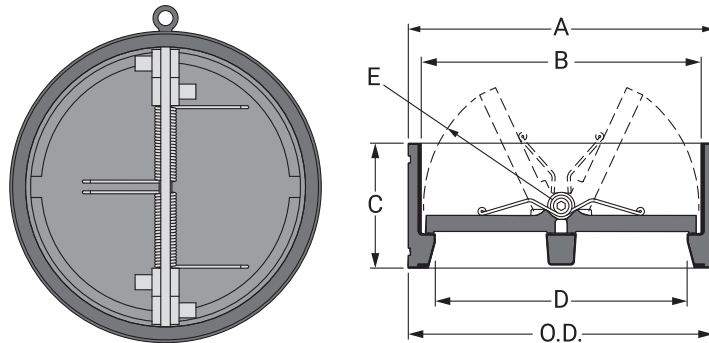
Spring

Stainless Steel Type 304



GRUVLOK
An ASC Engineered Solution

Dual Disc Check Valve Fig. CV890



Valve Size	O.D.	Dimensions					Approx. Wt. Ea.
		A	B	C	D	E	
In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	In./mm	Lbs./Kg
14	14.00	14.49	12.96	7.25	11.14	6.06	101
350	355.6	368	329	184	283	154	46
16	16.00	16.14	14.13	7.50	12.20	6.81	119
400	406.4	410	359	191	310	173	54
18	18.00	18.15	16.42	8.000	14.33	8.00	169
450	457.2	461	417	203	364	203	77
20	20.00	20.04	18.11	8.625	16.06	8.80	211
500	508.0	509	460	219	408	226	96
24	24.00	24.00	22.13	8.750	18.00	9.80	131
600	609.6	610	562	222	457	249	288

