GF Piping Systems

Cone Check Valves
Type 561/562

General

- **Size**: ⅜"–4"
- **Material**: PVC, CPVC, PROGEF® Standard PP, ABS, SYGEF® Standard PVDF
- **Seals**: EPDM, FPM
- **Spring:** 304 stainless steel
- **End Connection**: Solvent cement socket, threaded, flanged, fusion spigot, fusion socket

Key Certifications

- **FDA CFR 21 177.1520**: PP
- **FDA CFR 21 177.2600**: EPDM and FPM
- **FDA CFR 21 177.1550**: PTFE
- **USP 25 Class VI (physiological non-toxic)**: PP

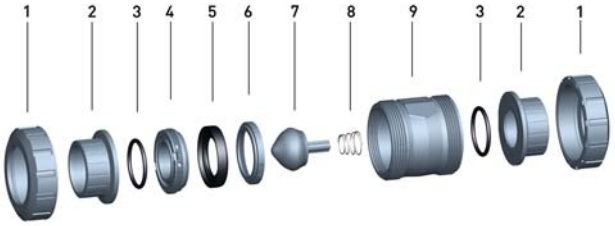
Optional Features

- **Strainer**: Foot valve applications, PVC only
- **Spring**: Nimonic 90, Halar coated Nimonic 90
- **End Connection**: Alternatives available upon request
- **Cleaned**: Silicone free/oil free

Specification

The Type 561/562 Cone Check Valve shall be true union and fully serviceable. The Type 561 shall be used in vertical applications only. The Type 562 shall be used in both horizontal and vertical applications. The cone shall be stabilized by a guide rod. The carrier shall be adjustable and reverse threaded. The valve nut threads shall be of buttress type. All elastomeric seals shall be of like material. ANSI flanged versions shall meet ANSI B16.5 150lb standards. All valves shall be tested in accordance to ISO9393 and designed to ISO16136 standards. All valves shall be manufactured under ISO9001 for Quality and ISO14001 for Environmental Management. Following assembly, every valve shall be tested and certified bubble tight exceeding Class VI standards. PVC valves shall meet ASTM D1784 cell classification 12454 standards. CPVC valves shall meet ASTM D1784 cell classification 23447-B standards. PP valves shall meet ASTM D5847-14 cell classification PP0510B66851 standards. ABS valves shall meet ASTM D3965 cell classification 42222 standards. PVDF valves shall be type 1, grade 2 according to ASTM D3222 standards. Valves of all materials shall be RoHS compliant.

Components

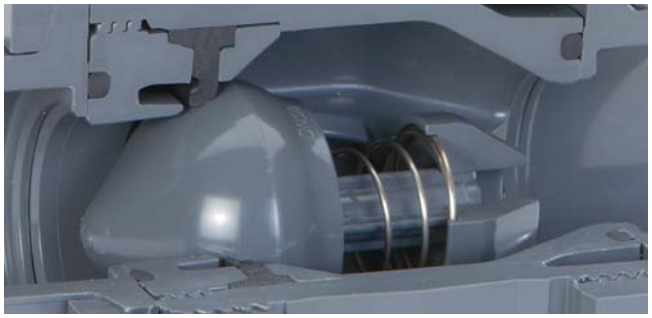


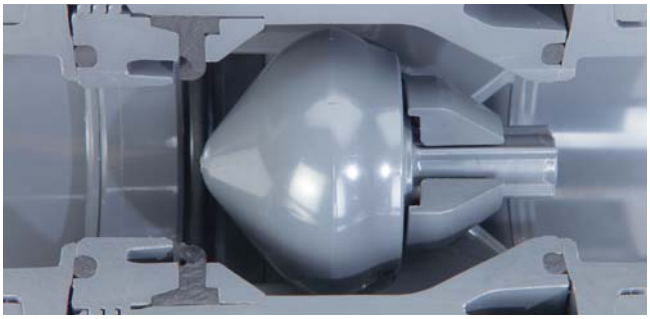
Valve Components

Part	Description	Material
1	Valve nut	PVC, CPVC, PP, ABS or PVDF
2	Valve end	PVC, CPVC, PP, PPn, ABS, PE or PVDF
3	Face seal	EPDM or FPM
4	Carrier	PVC, CPVC, PP, ABS or PVDF
5	Cone seal	EPDM or FPM
6	Backup ring	PVC, CPVC, PP, ABS or PVDF
7	Cone	PVC, CPVC, PP-TV20, ABS or PVDF
8	Spring	304 Stainless steel
9	Valve body	PVC, CPVC, PP, ABS or PVDF

Key Design Features

The Type 561/562 Cone Check Valves are designed to optimize the flow path through the valve. The streamlined cone decreases resistance and significantly improves Cv when compared to traditional ball check valves. The internal geometry of the valve body features smooth transitions and radii, the contour is designed to direct media around the cone in order decrease pressure loss.





The Type 562 Cone Check Valves are designed for both vertical and horizontal applications. A spring is seated between the cone and the guide to allow the valve to properly seal in applications where a traditional ball check valve would not.

The cone is stabilized by a guide rod, which maintains a cone's position at full stroke, preventing rattling and decreasing the potential for damage.

Technical Data

System Conditions

The following information is based on water applications at 68° F

Size (inch)	d (mm)	561 Cracking (psi)	562 Cracking (psi)	561 Sealing (psi)	562 Sealing (psi)	Full Stroke (gpm)
⅜	16	0.04	0.41	2.9	1.45	2.11
½	20	0.04	0.41	2.9	1.45	2.38
¾	25	0.04	0.44	2.9	1.45	3.43
1	32	0.07	0.44	2.9	1.45	4.76
1¼	40	0.07	0.51	2.9	1.45	9.25
1½	50	0.15	0.58	2.9	1.45	18.49
2	63	0.29	0.73	2.9	1.45	26.42
2½	75	0.36	0.87	2.9	1.45	31.70
3	90	0.44	0.87	2.9	1.45	44.91
4	110	0.44	0.87	2.9	1.45	66.05

Cracking pressure is amount of pressure on the inlet side of the valve required to unseat a closed valve and allow media to begin to pass through the valve. Sealing pressure is the amount of pressure on the outlet side of the valve required to seat an open valve and seal it so no media can pass through. The full stroke flowrate is the volume of media required to maintain the ideal position of the cone in order to optimize the valve's performance.

Cone Density

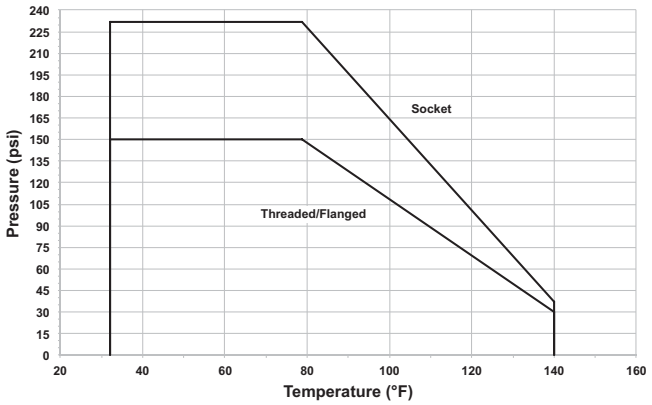
Material	Density (g/cm³)
PVC	1.38
CPVC	1.50
PP-TV20 (PPh with 20% Talc)	1.05
ABS	1.03
PVDF	1.78

It is not recommended to use Type 561/562 Cone Check Valves in applications in which the media is of greater density than the cone. This will cause the cone to float, thus interfering with the valve's ability to seal properly. PP-TV20 cone used in PP valves.

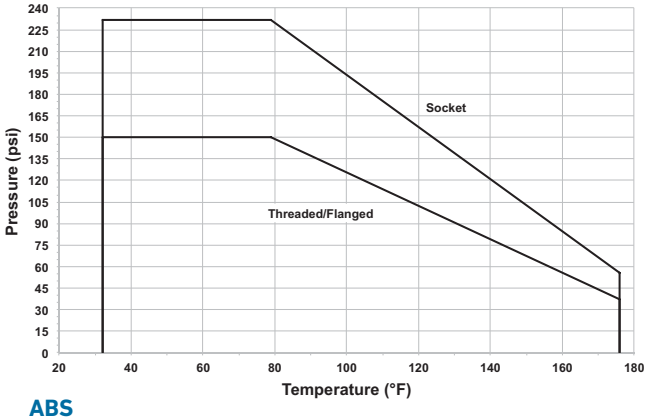
Pressure Temperature Curves

The following graphs are based on a 25 year lifetime water or similar media application

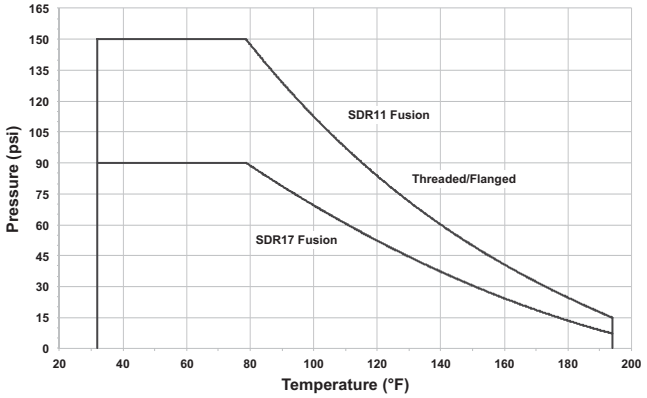
PVC



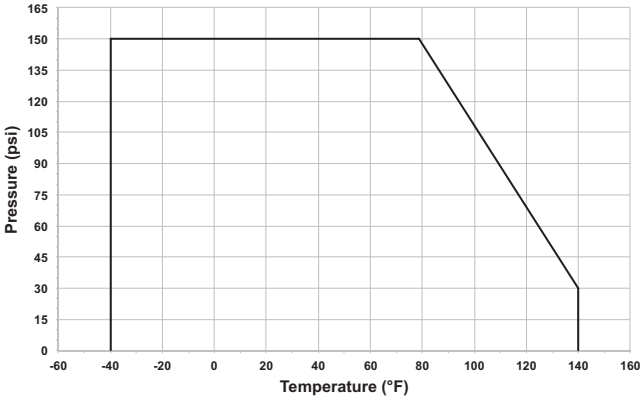
CPVC



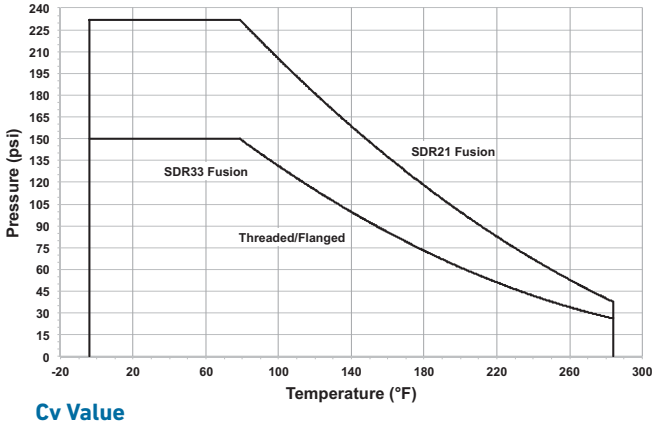
PP



ABS



PVDF



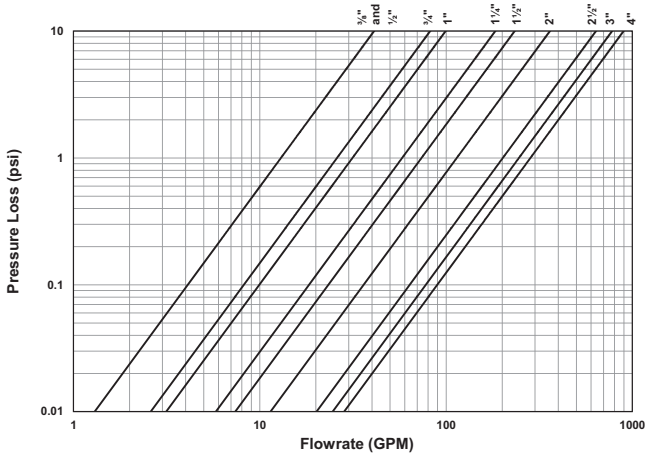
Pressure-Temperature

Material	Temperature Range (°F)	Max Pressure (psi)
PVC	32 to 140	232
CPVC	32 to 176	232
PP	32 to 176	150
ABS	-40 to 140	150
PVDF	-4 to 284	232

Cv Value

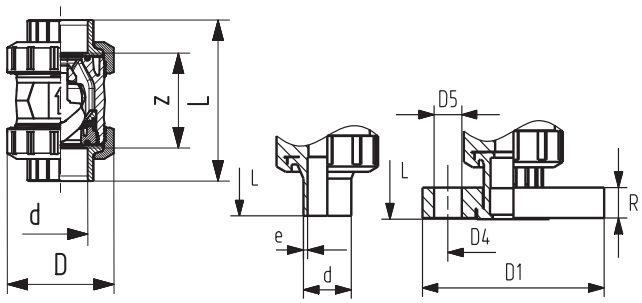
Size (inch)	d (mm)	Cv (gal/min)
⅜	16	13
½	20	13
¾	25	26
1	32	32
1¼	40	59
1½	50	75
2	63	115
2½	75	204
3	90	248
4	110	286

Pressure Loss



Dimensions

The following tables are shown in inches unless otherwise specified



All Materials

PVC/CPVC

Size	d (mm)	D	Size	Socket L	Socket z	Threaded L	Threaded z	Flanged L	Flanged D1	Flanged D4	Flanged D5	Flanged R
⅜	16	1.97	⅜	4.13	2.64	3.86	2.72	-	-	-	-	-
½	20	1.97	½	4.13	2.4	3.86	2.56	5.87	3.5	2.38	0.5	0.57
¾	25	2.28	¾	4.76	2.76	4.37	2.92	6.5	3.88	2.75	0.5	0.58
1	32	2.68	1	5.24	2.99	5	3.23	7.24	4.25	3.13	0.5	0.66
1¼	40	3.31	1¼	6.06	3.54	5.79	3.85	8.11	4.63	3.5	0.5	0.69
1½	50	3.82	1½	6.46	3.7	6.18	4.33	8.7	5	3.88	0.5	0.76
2	63	4.88	2	7.2	4.21	7.2	5.31	9.88	6	4.75	0.63	0.82
2½	75	6.54	2½	9.17	5.67	9.21	6.54	12.24	7	5.5	0.63	0.98
3	90	7.87	3	10	5.94	10.04	6.88	13.5	7.5	6	0.63	1.02
4	110	9.37	4	11.85	6.85	11.89	8.42	15.63	9	7.5	0.63	1.11

PP

d	Socket		IR/Butt		Threaded		Flanged				
(mm)	L	z	L	e	L	z	L	D1	D4	D5	R
16	3.66	2.64	-	-	3.78	2.8	-	-	-	-	-
20	3.74	2.6	5.12	0.07	3.9	2.52	6.54	3.74	2.36	0.63	0.63
25	4.29	3.03	5.63	0.09	4.37	2.99	6.97	4.13	2.76	0.63	0.67
32	4.69	3.27	5.91	0.12	5	3.27	7.52	4.53	3.11	0.63	0.71
40	5.31	3.9	6.73	0.15	5.75	3.94	8.23	5.51	3.5	0.63	0.79
50	5.79	4.13	7.52	0.18	6.18	4.37	9.02	5.91	3.86	0.63	0.87
63	6.61	4.61	8.66	0.23	7.2	5.28	9.96	6.5	4.76	0.75	0.94
75	9.17	6.57	10.47	0.32	-	-	16.38	7.28	5.51	0.75	1.02
90	10	7.09	10.39	0.39	-	-	16.3	7.87	5.98	0.75	1.06
110	11.85	8.46	11.85	0.47	-	-	17.76	9.02	7.48	0.75	1.1

ABS

d (mm)	Socket L	Socket z
16	3.62	2.52
20	3.74	2.52
25	4.33	2.83
32	4.84	3.11
40	5.57	3.7
50	6.18	3.74
63	7.2	4.21
75	9.17	5.67
90	10	5.94
110	11.85	6.85

PVDF

d (mm)	Socket L	Socket z	IR/Butt L	IR/Butt e	Threaded L	Threaded z	Flanged L	Flanged D1	Flanged D4	Flanged D5	Flanged R
16	3.66	2.64	-	-	3.78	2.72	-	-	-	-	-
20	3.74	2.6	5.12	0.07	3.9	2.52	6.85	3.74	2.36	0.63	0.63
25	4.29	3.03	5.63	0.07	4.37	2.99	7.44	4.13	2.76	0.63	0.67
32	4.69	3.27	5.91	0.09	5	3.27	7.83	4.53	3.11	0.63	0.71
40	5.31	3.9	6.73	0.09	5.75	3.98	9.25	5.51	3.5	0.63	0.79
50	5.79	4.13	7.52	0.12	6.18	4.37	9.57	5.91	3.86	0.63	0.87
63	6.61	4.61	8.66	0.12	7.2	5.31	10.28	6.5	4.76	0.75	0.94
75	9.17	6.57	10.47	0.14	-	-	16.77	7.28	5.51	0.75	1.02
90	10	7.09	10.39	0.17	-	-	16.77	7.87	5.98	0.75	1.06
110	11.85	8.46	11.85	0.21	-	-	19.17	9.02	7.48	0.75	1.1

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