

# Cone Check Valves Type 561/562



## General

- **Size:** 3/8"–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
- **ABS:** All materials

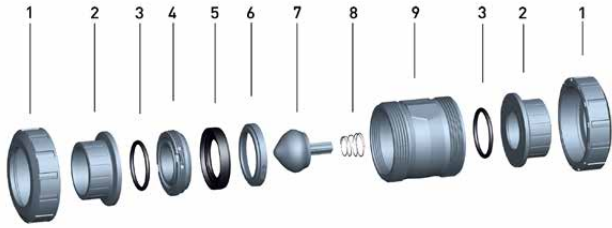
## Optional Features

- **Strainer:** Foot valve applications, PVC only
- **Spring:** Nimonic 90, Halar coated SS 304
- **End Connection:** Alternatives available upon request
- **Cleaned:** Silicone free/oil free

## Sample 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 ISO16137 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



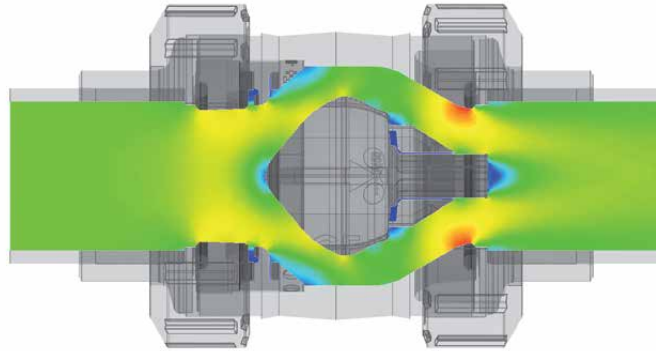
## Key Design Features

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.



## 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



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)
3/8	16	0.04	0.41	2.9	1.45	2.11
1/2	20	0.04	0.41	2.9	1.45	2.38
3/4	25	0.04	0.44	2.9	1.45	3.43
1	32	0.07	0.44	2.9	1.45	4.76
1 1/4	40	0.07	0.51	2.9	1.45	9.25
1 1/2	50	0.15	0.58	2.9	1.45	18.49
2	63	0.29	0.73	2.9	1.45	26.42
2 1/2	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

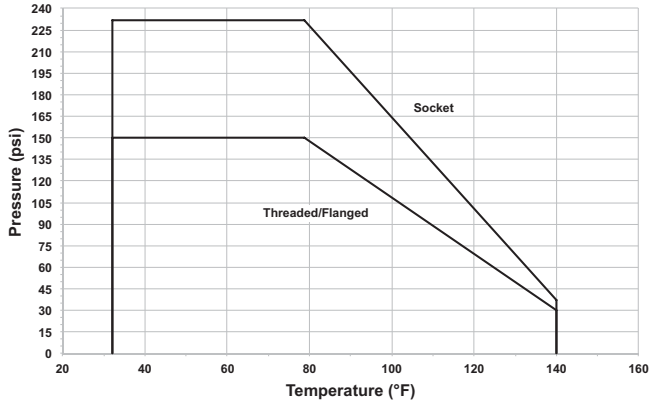
Material	Density (g/cm <sup>3</sup> )
PVC	1.38
CPVC	1.50
PP-TV20 (PPh with 20% Talc)	1.05
ABS	1.03
PVDF	1.78

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.

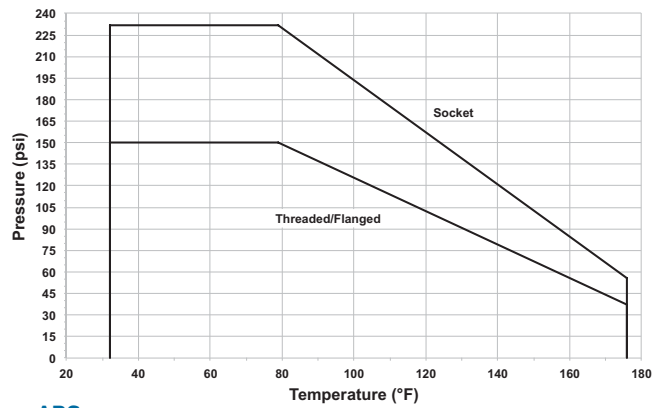
# Pressure Temperature Curves

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

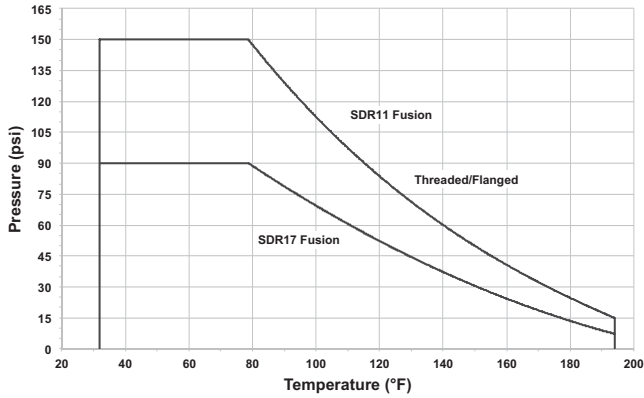
## PVC



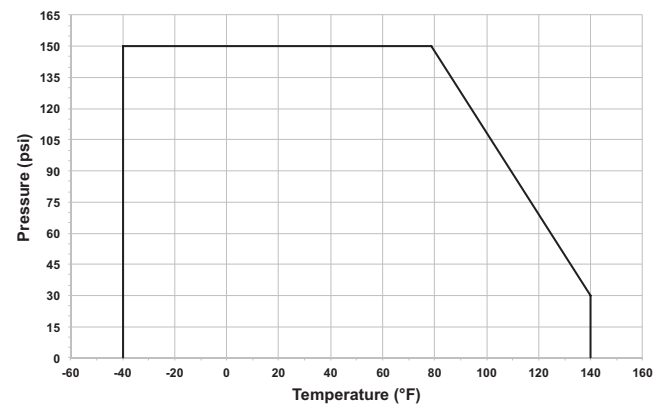
## CPVC



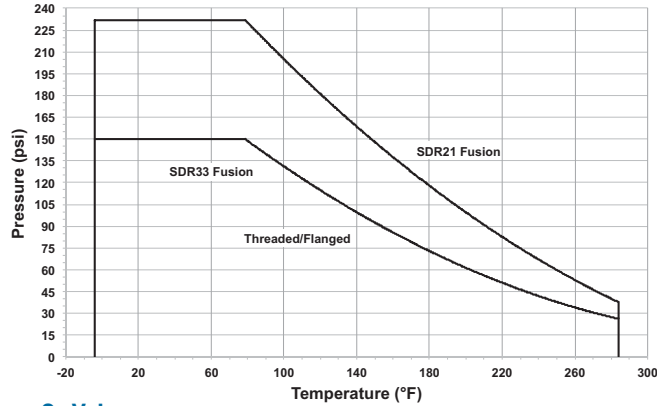
## PP



## 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*

\*Dependant on end connection as shown in P-T curves

## Cv Value

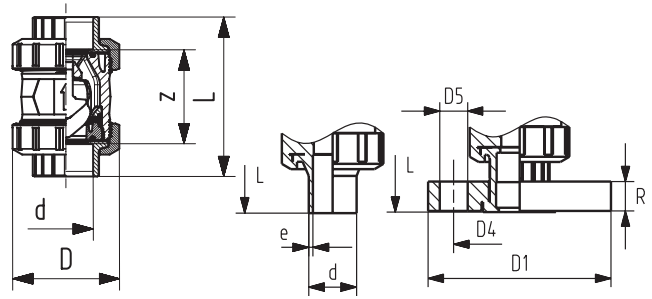
Size (inch)	d (mm)	Cv (gal/min)
3/8	16	13
1/2	20	13
3/4	25	26
1	32	32
1 1/4	40	59
1 1/2	50	75
2	63	115
2 1/2	75	204
3	90	248
4	110	286

## Vacuum Service

Type 561/562 Cone Check Valves are conditionally rated for vacuum service. Please consult GF with application details before commissioning.

# Dimensions

The following tables are shown in millimeters unless otherwise specified



## All Materials

Size (inch)	d (mm)	D
3/8	16	50
1/2	20	50
3/4	25	58
1	32	68
1 1/4	40	84
1 1/2	50	97
2	63	124
2 1/2	75	166
3	90	200
4	110	238

## PVC/CPVC

Size (inch)	IPS Socket		Threaded NPT		ANSI Flanged					
	L	z	L	z	L	D1 (inch)	D4 (inch)	D5 (inch)	R (inch)	
3/8	105	67	98	69	-	-	-	-	-	
1/2	105	61	98	65	149	3.5	2.38	0.5	0.57	
3/4	121	70	111	74	165	3.88	2.75	0.5	0.58	
1	133	76	127	82	184	4.25	3.13	0.5	0.66	
1 1/4	154	90	147	98	206	4.63	3.5	0.5	0.69	
1 1/2	164	94	157	110	221	5	3.88	0.5	0.76	
2	183	107	183	135	251	6	4.75	0.63	0.82	
2 1/2	233	144	234	166	311	7	5.5	0.63	0.98	
3	254	151	255	175	343	7.5	6	0.63	1.02	
4	301	174	302	214	397	9	7.5	0.63	1.11	

## PP

d (mm)	Metric Socket		Metric IR/Butt		Threaded NPT		ANSI Flanged				
	L	z	L	e	L	z	L (inch)	D1 (inch)	D4 (inch)	D5 (inch)	R (inch)
16	93	67	-	-	96	71	-	-	-	-	-
20	95	66	130	1.9	99	64	166	3.74	2.36	0.63	0.63
25	109	77	143	2.3	111	76	177	4.13	2.76	0.63	0.67
32	119	83	150	2.9	127	83	191	4.53	3.11	0.63	0.71
40	135	99	171	3.7	146	100	209	5.51	3.5	0.63	0.79
50	147	105	191	4.6	157	111	229	5.91	3.86	0.63	0.87
63	168	117	220	5.8	183	134	253	6.5	4.76	0.75	0.94
75	233	167	266	6.8	-	-	416	7.28	5.51	0.75	1.02
90	254	180	264	8.2	-	-	414	7.87	5.98	0.75	1.06
110	301	215	301	10.0	-	-	451	9.02	7.48	0.75	1.1

## ABS

d (mm)	Metric Socket	
	L	z
16	92	64
20	95	64
25	110	72
32	123	79
40	146	94
50	157	95
63	183	107
75	233	144
90	254	151
110	301	174

## PVDF

d (mm)	Metric Socket		Metric IR/Butt		Threaded NPT		ANSI Flanged				
	L	z	L	e	L	z	L	D1 (inch)	D4 (inch)	D5 (inch)	R (inch)
16	93	67	-	-	96	69	-	-	-	-	-
20	95	66	130	1.9	99	64	174	3.74	2.36	0.63	0.63
25	109	77	143	1.9	111	76	189	4.13	2.76	0.63	0.67
32	119	83	150	2.4	127	83	199	4.53	3.11	0.63	0.71
40	135	99	171	2.4	146	101	235	5.51	3.5	0.63	0.79
50	147	105	191	3.0	157	111	243	5.91	3.86	0.63	0.87
63	168	117	220	3.0	183	135	261	6.5	4.76	0.75	0.94
75	233	167	270	3.6	-	-	426	7.28	5.51	0.75	1.02
90	254	180	265	4.3	-	-	426	7.87	5.98	0.75	1.06
110	301	215	305	5.3	-	-	487	9.02	7.48	0.75	1.1