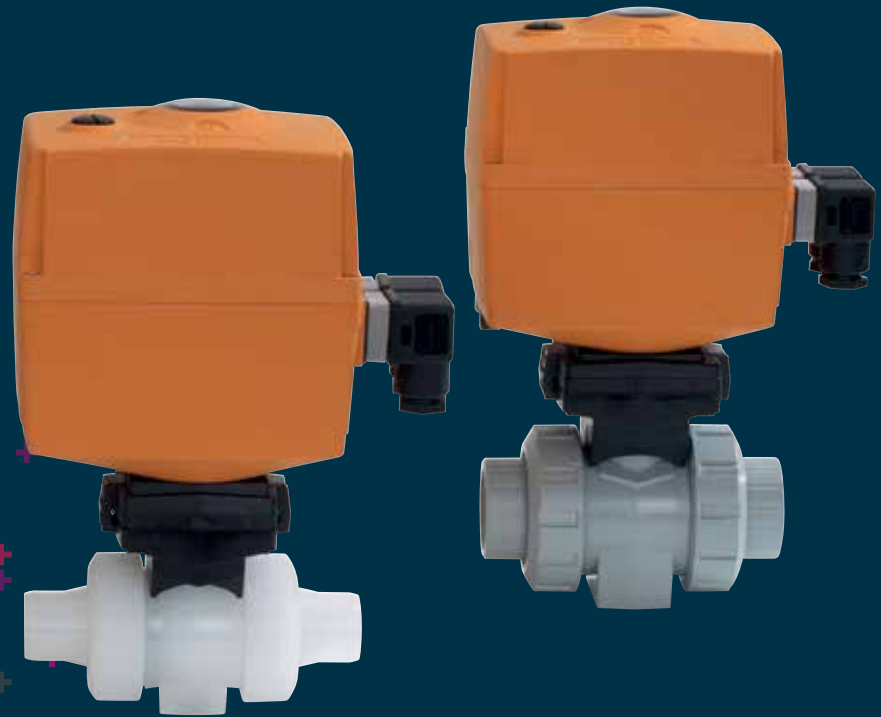


# Electrically Actuated Ball Valve Type 179-184



## General

- **Size:** 3/8"–4"
- **Material:** PVC, CPVC, PROGEF® Standard PP, ABS, SYGEF® Standard PVDF
- **Seat:** PTFE
- **Seals:** EPDM, FPM
- **End Connection:** Solvent cement socket, threaded, flanged, fusion spigot, fusion socket
- **Actuator Housing:** Glass-filled PP
- **Voltage:** 100-230VAC, 24VAC/DC
- **Mounting:** Stainless steel threaded inserts
- **Manual Override:** Integrated
- **End Stops:** Open, close, programmable middle position
- **Position Indicator:** LED, optical, integrated
- **Position Feedback:** Open, close, middle
- **Heater:** 10 position adjustable

## Sample Specification

The Type 179-184 Ball Valve shall be used in either open/close or modulating applications. The actuator shall be either a Type EA25, EA45 or EA120 depending on valve size. The ball valve shall be true union and utilize a floating ball design. The ball shall be fully molded and full port with two way blocking capability. The stem shall be blowout proof, utilizing a double o-ring seal and a predetermined break point opposite the media side of the stem seals. The seat carrier shall be adjustable and reverse threaded. The valve nut threads shall be of buttress type. Ball seats shall have an elastomeric backing o-ring and 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 manual assembly, every valve shall be tested and certified bubble tight exceeding Class VI standards. Following actuated assembly, every valve shall be tested to confirm functionality.

## Material Specification

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.

## Definition of Valve Type

- **Type 179:** PVC/CPVC/ABS body, metric connection
- **Type 180:** PP body, all connections
- **Type 181:** PVDF body, all connections
- **Type 182:** PVC/CPVC body, ASTM connection
- **Type 183:** PVC/CPVC body, BS connection
- **Type 184:** PVC/CPVC body, JIS connection

## Components



## Optional Features

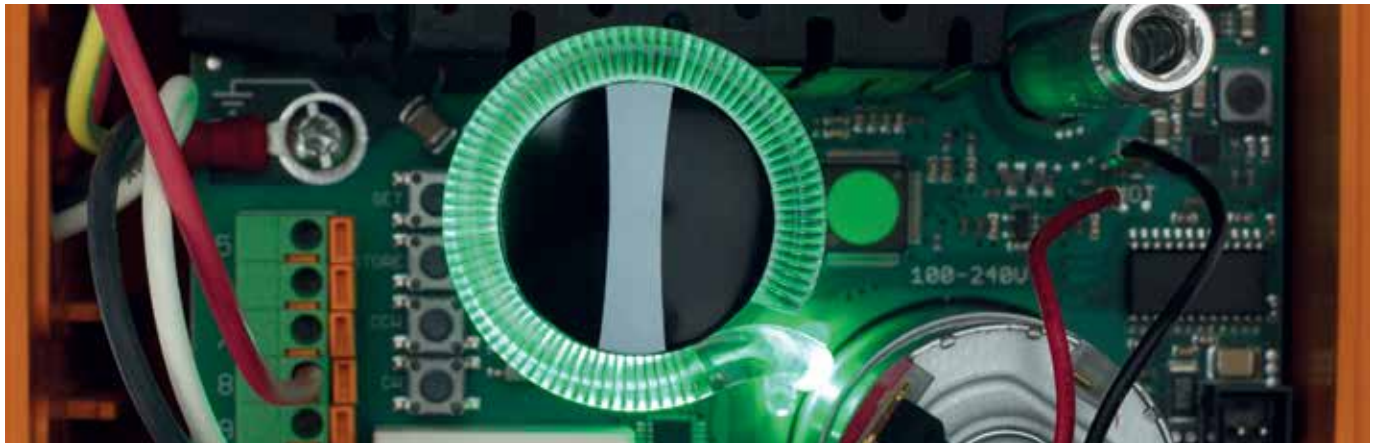
- **Positioner:** Current, voltage
- **Network:** Profibus DP
- **Fail Safe Return:** Battery back up, externally powered board
- **Smart Module:** Cycle monitoring, cycle counter, cycle extension, motor current monitoring
- **Manual Loading Station:** Local control box
- **Seals:** Alternative materials available upon request
- **Seat:** PVDF
- **End Connection:** Alternatives available upon request
- **Control Ball:** For throttling applications available 3/8"-2"
- **Vented Ball:** For sodium hypochlorite use
- **Cleaned:** Silicone free/oil free

## Key Valve Certifications

- **NSF 61:** PVC and CPVC
- **FDA CFR 21 177.1520:** PP and PVDF
- **FDA CFR 21 177.2600:** EPDM and FPM
- **FDA CFR 21 177.1550:** PTFE
- **ABS:** All materials
- **USP Class VI (physiological non-toxic):** EPDM, FPM, PTFE, PP and PVDF

## Key Actuator Compliance

- **Machinery Directive 2006/42/EC, Annex II B**
- **EMV Directive CE 2004/108/CE**
- **EMV VDE 0843 Section 20**
- **Low Voltage Directive CE 2006/95/CE**
- **Vibration Testing EN 60068-2-6**
- **Interface ISO 5211**
- **Actuators for Industrial Valves EN 15714-2**



## Actuator Technical Data

	EA 25	EA 45	EA 120
<b>Valve Size</b>	¾"-2"	2½"	3" - 4"
<b>Cycle Time</b>	5s/90°	6s/90°	15s/90°
<b>Rated Cycles at 70°F</b>	250,000	100,000	100,000
<b>Actuating Angle</b>	Standard set at 90°, max. 355°		
<b>Housing Material</b>	Glass-filled PP		
<b>Position Feedback</b>	230V, 6 Amp		
<b>Emergency Manual Override</b>	Integrated		
<b>Rated Voltage</b>	100- 230V, 50/60 Hz 24V, AC/DC, 50/60Hz		
<b>Rated Voltage Tolerance</b>	+/- 15%		
<b>Rated Output</b>	35VA @ 100-230VAC 40VA @ 24VAC/DC	55VA @ 100-230VAC 60VA @ 24VAC/DC	50VA @ 100-230VAC 55VA @ 24VAC/DC
<b>Calculated Current Draw</b>	0.35A @ 100VAC 0.15A @ 230VAC 1.7A @ 24VDC	0.55A @ 100VAC 0.24A @ 230VAC 2.5A @ 24VDC	0.5A @ 100VAC 0.22A @ 230VAC 2.3A @ 24VDC
<b>Duty Cycle</b>	100%	50%	50%
<b>Protection Class</b>	IP 67 per EN 60529 UL/CSA Nema 4X		
<b>Overload Protection</b>	Resetting, current-time dependant (1)		
<b>Overvoltage Category</b>	Category II according to DIN EN 61010-1		
<b>Power Connection</b>	Connector plug 3 P+ E per DIN EN 175301-03		
<b>Pollution Grade</b>	Grade 2 according to DIN EN 61010-1		
<b>Maximum Elevation</b>	6561 feet		
<b>Ambient Temperature</b>	14° to 122°F (2)		
<b>Allowable Humidity</b>	90% relative humidity, non condensing		

(1) Overload protection of the motor is dimensioned so that the motor and the power supply board are protected. As soon as the load is within the torque range, the actuator will begin operating again.

(2) At temperatures below 14°F and if there is condensation, the heating element should be activated.

## Technical Data

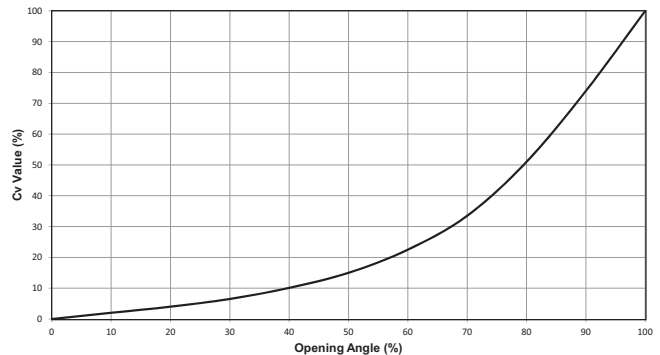
### Flow

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

#### Cv Value

Size (inch)	d (mm)	Cv (gal/min)
¾	16	4.9
½	20	12.9
¾	25	24.5
1	32	49.0
1¼	40	70.0
1½	50	112.0
2	63	217.1
2½	75	350.0
3	90	490.0
4	110	770.0

#### Flow Characteristics

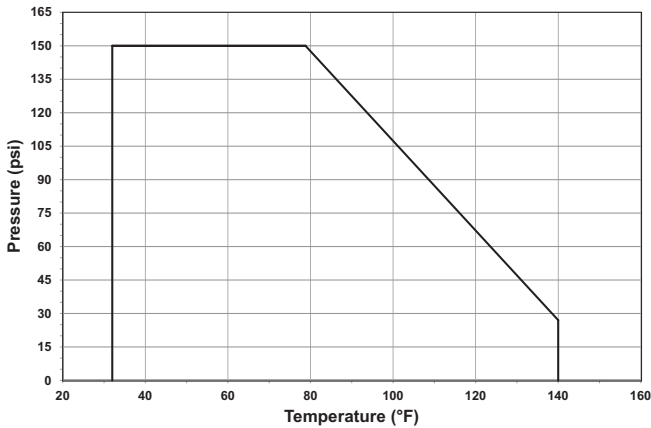


# Technical Data

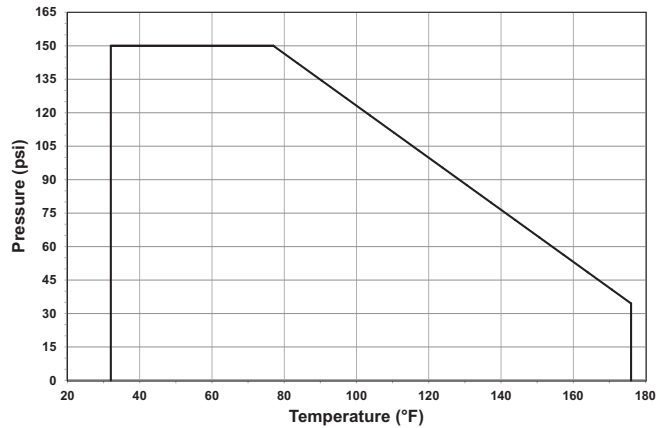
## Pressure Temperature Curves

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

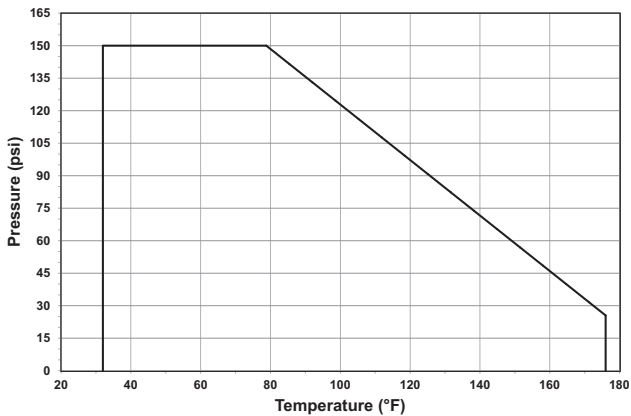
### PVC



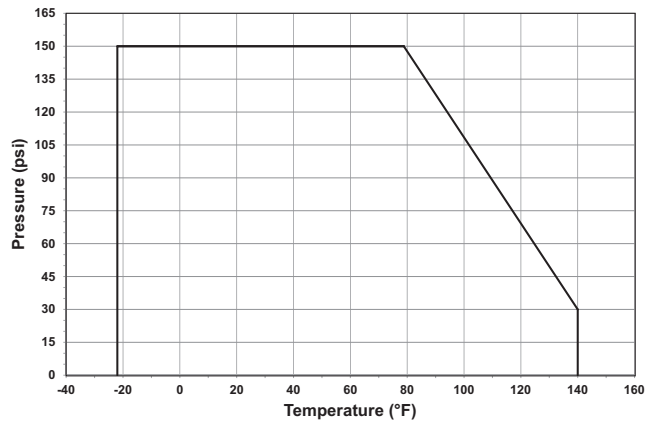
### CPVC



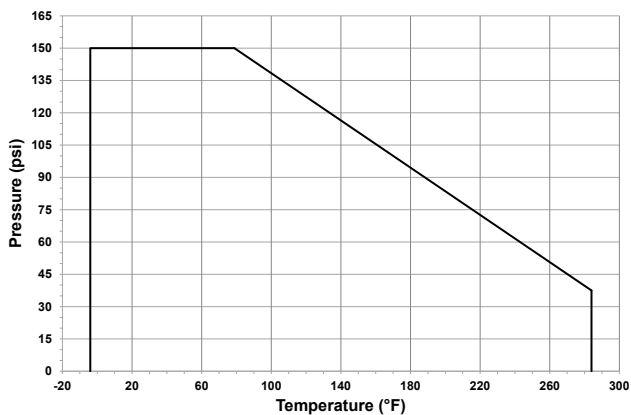
### PP



### ABS



### PVDF



### Pressure-Temperature

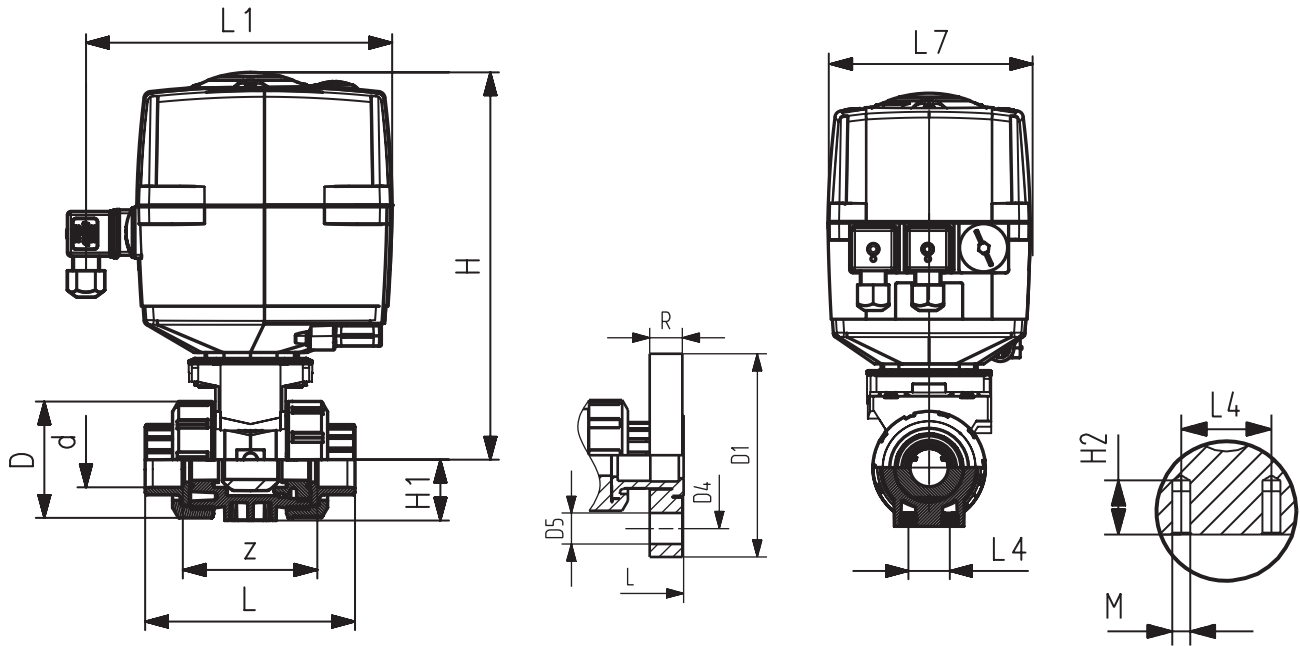
Material	Temperature Range (°F)	Max Pressure (psi)
PVC	32 to 140	150
CPVC	32 to 176	150
PP	32 to 176	150
ABS	-40 to 140	150
PVDF	-4 to 284	150

### Vacuum Service

The Type 179-184 is rated for full vacuum service. Maximum differential pressure of 15psi at 122°F.

# Dimensions

The following tables are shown in millimeters unless otherwise specified



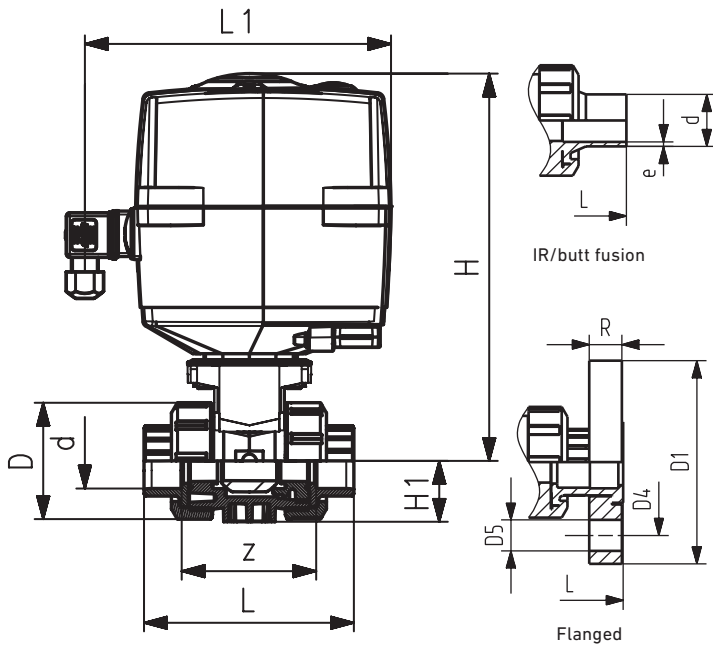
## All Materials

Size (inch)	d (mm)	D	H	H1	H2	L1	L4	L7	M
3/8	16	50	231	27	12	180	25	122	M6
1/2	20	50	231	27	12	180	25	122	M6
3/4	25	58	240	30	12	180	25	122	M6
1	32	68	240	36	12	180	25	122	M6
1 1/4	40	84	251	44	15	180	45	122	M8
1 1/2	50	97	251	51	15	180	45	122	M8
2	63	124	273	64	15	180	45	122	M8
2 1/2	75	166	346	85	15	180	70	122	M8
3	90	200	358	105	15	180	70	122	M8
4	110	238	365	123	22	180	120	122	M12

## 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	0.63	0.57
3/4	121	70	111	74	165	3.88	2.75	0.63	0.58
1	133	76	127	82	184	4.25	3.13	0.63	0.66
1 1/4	154	90	147	98	206	4.63	3.5	0.63	0.69
1 1/2	164	94	157	110	221	5	3.88	0.63	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

The following tables are shown in millimeters unless otherwise specified



**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

**PP**

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	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	0.63	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

**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	0.63	0.94
75	233	167	266	3.6	-	-	426	7.28	5.51	0.75	1.02
90	254	180	264	4.3	-	-	426	7.87	5.98	0.75	1.06
110	301	215	301	5.3	-	-	487	9.02	7.48	0.75	1.1