

## 300 and 350 Series

BALL VALVES



Ball valves offer great economy and durability for a wide range of applications that do not require hygienic, cleanable-in-place (CIP) service. They are easy to install and maintain.

The full ported, straight-through design of ball valves frees the flow path from obstructions. As a result, pressure drops across the valves are reduced, and there is no change in elevation for piping through the valve. This allows efficient and safe production or cleaning processes in the food, beverage, dairy, industrial, and chemical industries.

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit [www.spxflow.com](http://www.spxflow.com).

## Ball Valves 300 (2-way) and 350 (3-way)

### PRODUCT FEATURES AND BENEFITS

- All stainless construction: forged body and ball
- Full port opening for unrestricted flow in the open position
- Available in "Normally Closed", "Normally Open" and "Double Acting" Actuation
- Maintenance-free pneumatic actuator with 1/4" (6 mm) polytube air connections
- Standard ISO pattern mounting pad for easy retrofit from manual handle to pneumatic actuator
- Three piece design with floating seals
- FDA approved materials: reinforced PTFE seats
- Cavity filled
- Lockable manual handle option
- Complete line of control top options available including standard control tops and electropneumatic positioners for throttle/flow control applications
- 100% leakage tested at 100 psi (7 bar) - 350 series only
- L-Port and T-Port options available - 350 series only

### PRODUCT SPECIFICATIONS:

#### Materials:

##### Ball and Body:

- 316L Stainless Steel Ball and Body

##### Seat:

- PTFE Cavity Filled

##### Internal Surface Finish:

- $\leq 32$  Ra ( $\leq 0.8\mu$ ) - Other finishes available upon request

##### Sizes:

- .25" (12 mm) - 4" (101 mm) O.D. Tube

### PRESSURE RATINGS:

#### 300 Series

##### Operating Pressure:

- .5" - .75" up to 150 psi (10 bar)
- 1" - 1.5" up to 150 psi (10 bar)
- 2" - 4" up to 150 psi (10 bar)

#### 350 Series

##### Operating Pressure:

- .5" - 2" up to 150 psi (10 bar)
- 2.5" - 4" up to 150 psi (10 bar)

##### Temperature Ratings:

#### 300 Series

- 0° to 300°F (-17° to 148°C)

#### 350 Series

- 0° to 350°F (-17° to 175°C)

## Typical product applications



### Food & Beverage

Beverage  
Clean in Place  
Personal Care

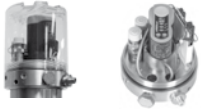


### Industrial

Chemical  
Utilities

## OPTIONS AND ACCESSORIES\*

### WAUKESHA CHERRY-BURRELL CONTROL TOP



#### Connector Options

- S/O Cord Grip for hard wire (std)
- Quick Disconnect Pin Connectors

#### Interface Options

- AS-i Field Bus Card
- DeviceNet™ Field Bus Network Card

#### Position Indication

- Set and Forget programmable linear switch
- Inductive Proximity Switches - 20-140V AC/DC, 2-Wire (Std)
- Microswitches 24VDC, 110VAC
- Intrinsically safe options 5-24VDC
- Externally mounted options

#### Solenoid Valves

- 24VDC or 110VAC
- Select 1, 2 or 3 Solenoids
- Intrinsically safe option 24VDC

#### Features And Benefits

- **Visibility** - transparent control top keeps all electrical components visible.
- **User-Friendly** - designed with the user in mind, making assembly and troubleshooting worry free and easy
- **Common Parts** - utilizes the industry's most widely recognized electrical components, so access to off the shelf replacement parts is easy, ensuring quick delivery and less down time
- **Standardization** - same control top used on various WCB valve lines, offers common look and controls interface
- NEMA 4x (IP56)
- Stainless Steel Control Top Option



### 8681 CONTROL TOP



#### Connector Options

- S/O Cord Grip for hard wire (std)
- Quick Disconnect Pin Connectors

#### Interface Options

- AS-i Field Bus Card
- DeviceNet™ Field Bus Network Card

#### Position Indication

- (3) programmable position sensors in control top

#### Solenoid Valves

- 24V DC or 110V AC
- Manual override and air throttle adjustment
- Up to (3) available in control top

#### Features And Benefits

- Contact free position sensor including (3) programmable feedback signals
- Positions easily taught via intuitive push buttons or Autotune feature to ensure quick & easy set-up
- Ultra-bright 360° visual LED position indication with adjustable red, yellow, & green color assignments provide clarity from all points of view and avoid confusion
- Manual override and air throttle adjustable solenoids to assist start-up, maintenance, and troubleshooting
- Up to IP69K washdown rating available (IP65/67 as standard) for high washdown environments
- Built-in microcontroller tracks cycles and alerts operator when preventive maintenance is required
- Simple and robust stainless steel adapter & chemically resistant polycarbonate head
- Similar price as WCB control tops
- Supplied by industry leading Burkert Fluid Controls

### CU4 Control Top



#### Connector Options

- S/O Cord Grip for hard wire (std)
- Quick Disconnect Pin Connectors

#### Interface Options

- AS-i Field Bus Card
- Profibus and DeviceNet™ (CU3)

#### Position Indication

- 2 internal or 2 external feedback sensor switches for valve open/valve closed position detection

#### Solenoid Valves

- 24VDC or 110VAC
- Select 1 or 3 Solenoids

#### Features And Benefits

- **Reliability and long service life** - robust clamp connection, reinforced Stainless Steel air coupling threads to avoid air leakages, and watertight seals
- **Reduced costs** - few parts and simple design
- **Ease of Operation** - contains manual override solenoids and adjustment screw to throttle air flow to actuator to ensure optimal opening and closing
- **Clarity** - clear and bright indication of valve position - 5 diodes in LED panel and convenient location
- **Standardization** - same control top used on various APV valve lines, offers common look and controls interface
- NEMA 6 (167)

#### ADDITIONAL OPTIONS

##### Proximity Switch Only

- Available with manual handle and pneumatic actuators
- 24VDC prox sensors with LED
- Feedback for valve open/valve closed position detection

##### Electropneumatic Positioner

- 4-20mA feedback signal
- Throttle/Control flow
- LCD display and simple set-up
- Optional DeviceNet™, Profibus or AS-i Communication

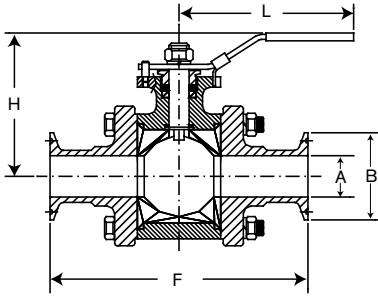


\* Control top and positioner options only available on 300 series with linear actuator not 350 series

## DIMENSIONAL DATA:

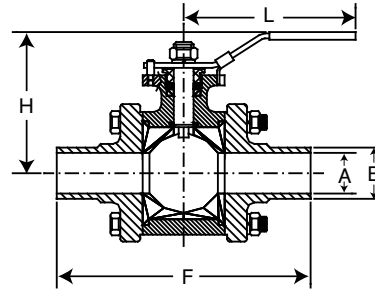
### 300 Series Ball Valves

#### Clamp Connections



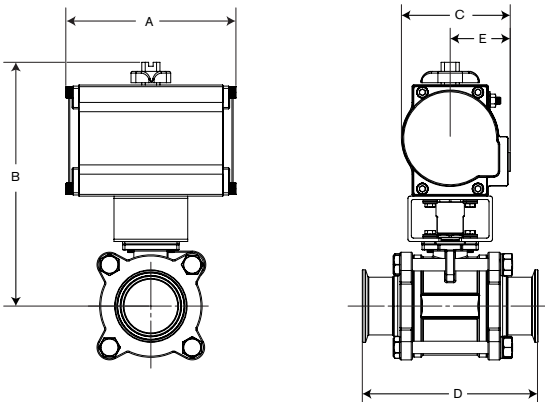
VALVE SIZE IN (mm)	H	F	L	A	B
0.50 (12)	2.17 (55)	3.50 (88)	5.20 (132)	0.37 (9)	1.00 (25)
0.75 (19)	2.36 (59)	3.98 (101)	5.20 (132)	0.63 (16)	1.00 (25)
1.00 (25)	2.72 (69)	4.49 (114)	6.50 (165)	0.87 (22)	1.98 (50)
1.50 (38)	3.31 (84)	5.51 (139)	7.64 (194)	1.38 (35)	1.98 (50)
2.00 (50)	3.62 (91)	6.14 (155)	7.64 (194)	1.87 (47)	2.52 (64)
2.50 (63)	5.00 (127)	7.76 (197)	9.92 (251)	2.37 (60)	3.05 (77)
3.00 (76)	5.35 (135)	9.02 (229)	9.92 (251)	2.87 (72)	3.58 (90)
4.00 (101)	6.26 (159)	9.57 (243)	13.11 (332)	3.83 (97)	4.68 (93)

#### Weld Connections



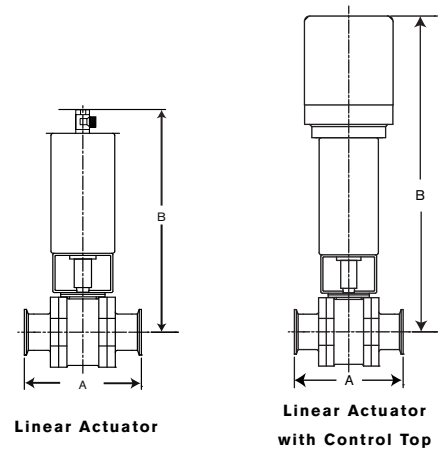
VALVE SIZE IN (mm)	H	F	L	A	B
0.50 (12)	2.36 (59)	3.50 (88)	5.20 (132)	0.37 (9)	1.00 (25)
0.75 (19)	2.56 (65)	3.98 (101)	5.20 (132)	0.63 (16)	1.00 (25)
1.00 (25)	2.72 (69)	4.49 (114)	6.50 (165)	0.87 (22)	1.98 (50)
1.50 (38)	3.50 (88)	5.51 (139)	7.64 (194)	1.38 (35)	1.98 (50)
2.00 (50)	3.82 (97)	6.14 (155)	7.64 (194)	1.87 (47)	2.52 (64)
2.50 (63)	5.00 (127)	7.76 (197)	9.92 (251)	2.37 (60)	3.05 (77)
3.00 (76)	5.31 (134)	9.02 (229)	9.92 (251)	2.87 (72)	3.58 (90)
4.00 (101)	6.26 (159)	9.57 (243)	13.11 (332)	3.83 (97)	4.68 (93)

#### Rack and Pinion Actuator



VALVE SIZE IN (mm)	A	B	C	D	E
0.50 (12)	4.72 (119)	5.93 (150)	2.45 (62)	3.50 (88)	1.33 (33)
0.75 (19)	4.72 (119)	6.11 (155)	2.45 (62)	3.98 (101)	1.33 (33)
1.00 (25)	5.68 (144)	9.21 (234)	3.21 (81)	4.49 (114)	1.88 (47)
1.50 (38)	5.87 (149)	11.34 (288)	3.74 (95)	5.51 (140)	2.03 (51)
2.00 (50)	5.87 (149)	11.65 (296)	3.74 (95)	6.14 (156)	2.03 (51)
2.50 (63)	7.21 (183)	13.90 (353)	4.69 (119)	7.76 (197)	2.54 (64)
3.00 (76)	7.21 (183)	14.27 (362)	4.69 (119)	9.02 (229)	2.54 (64)
4.00 (101)	10.22 (259)	18.07 (459)	5.54 (140)	9.56 (242)	2.97 (75)

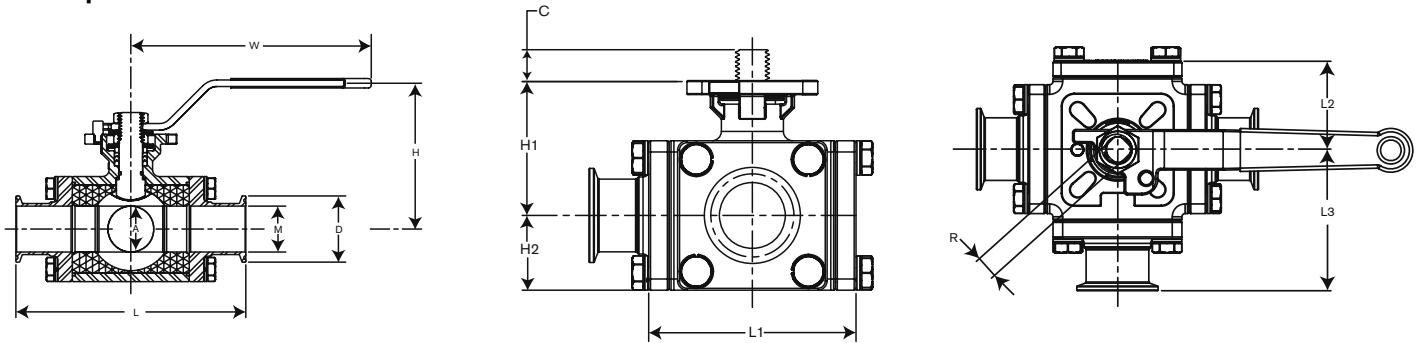
#### Linear Actuator and Control Top Options



VALVE SIZE IN (mm)	A	B			
		LINEAR ACTUATOR	WCB CONTROL TOP	CU4 CONTROL TOP	BÜRKERT 8681 CONTROL TOP
0.50 (12)	3.50 (88)	10.83 (275)	16.63 (422)	16.63 (422)	19.63 (499)
0.75 (19)	3.98 (101)	11.00 (280)	16.80 (427)	16.80 (427)	19.80 (503)
1.00 (25)	4.49 (114)	11.22 (285)	17.02 (432)	17.02 (432)	20.02 (509)
1.50 (38)	5.51 (140)	11.77 (299)	17.57 (446)	17.57 (446)	20.57 (522)
2.00 (50)	6.14 (156)	12.09 (307)	17.78 (452)	17.78 (452)	20.78 (528)
2.50 (63)	7.76 (197)	16.17 (411)	21.97 (558)	21.97 (558)	24.97 (634)
3.00 (76)	9.02 (229)	16.54 (420)	22.34 (567)	22.34 (567)	25.34 (644)
4.00 (101)	9.56 (242)	17.32 (440)	23.12 (587)	23.12 (587)	26.12 (663)

## 350 Series Ball Valves

### Clamp Connections



VALVE SIZE IN (mm)	A	W	H	H1	C	L	M	D	L1	L2	L3	H2	R	
0.50 (12)	0.37 (9)	4.76 (120)	3.07 (77)	1.75 (44)	0.71 (18)	4.64 (117)	0.37 (9)	1.00 (25)	2.75 (69)	1.37 (34)	2.32 (58)	0.94 (23)	0.35 (8)	M12 x 1.75
0.75 (19)	0.62 (15)	4.76 (120)	3.22 (81)	1.89 (48)	0.73 (19)	5.00 (127)	0.62 (15)	1.00 (25)	2.87 (72)	1.51 (38)	2.52 (64)	1.02 (25)	0.35 (8)	M12 x 1.75
1.00 (25)	0.87 (22)	5.39 (136)	3.54 (89)	2.32 (58)	0.89 (23)	5.39 (136)	0.87 (22)	1.98 (50)	3.38 (85)	1.69 (42)	2.99 (75)	1.22 (30)	0.43 (10)	M14 x 2.00
1.50 (38)	1.37 (34)	7.16 (181)	4.09 (103)	2.83 (71)	1.17 (30)	6.89 (175)	1.37 (34)	1.98 (50)	4.37 (110)	2.20 (55)	3.46 (87)	1.57 (39)	0.55 (13)	M18 x 2.50
2.00 (50)	1.87 (47)	7.16 (181)	4.52 (114)	3.22 (81)	1.17 (30)	7.48 (189)	1.87 (47)	2.51 (63)	4.88 (123)	2.44 (61)	3.74 (94)	1.96 (49)	0.55 (13)	M18 x 2.50
2.50 (63)	2.37 (60)	14.56 (369)	4.25 (107)	3.97 (100)	1.75 (45)	8.97 (227)	2.37 (60)	3.05 (77)	8.97 (227)	2.46 (62)	4.21 (106)	2.40 (60)	0.66 (16)	M22 x 2.50
3.00 (76)	2.87 (72)	15.74 (399)	5.27 (108)	4.96 (125)	1.75 (45)	10.23 (259)	2.87 (72)	3.57 (90)	11.37 (288)	2.97 (75)	4.80 (121)	2.91 (73)	0.86 (21)	1.12 x 12UNF
4.00 (101)	3.83 (97)	15.74 (399)	6.14 (155)	5.35 (135)	1.92 (49)	11.37 (288)	3.83 (97)	4.68 (118)	3.83 (97)	3.16 (80)	5.68 (144)	3.30 (83)	0.86 (21)	1.12 x 12UNF

### Rack and Pinion Actuator



### Normally Open/Closed

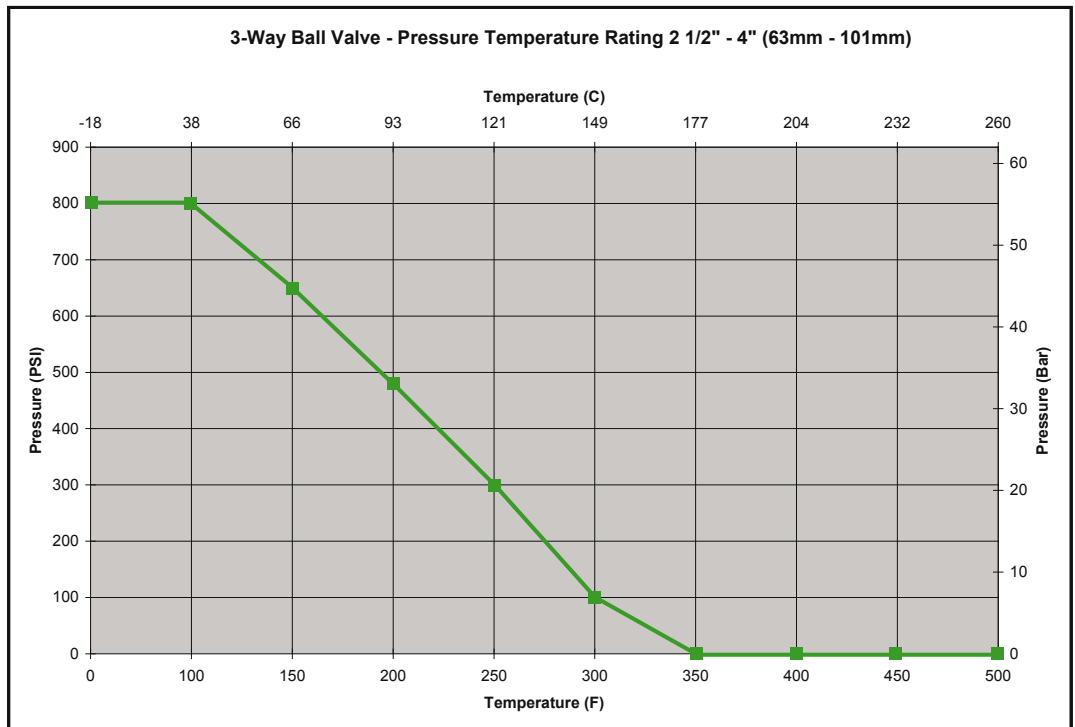
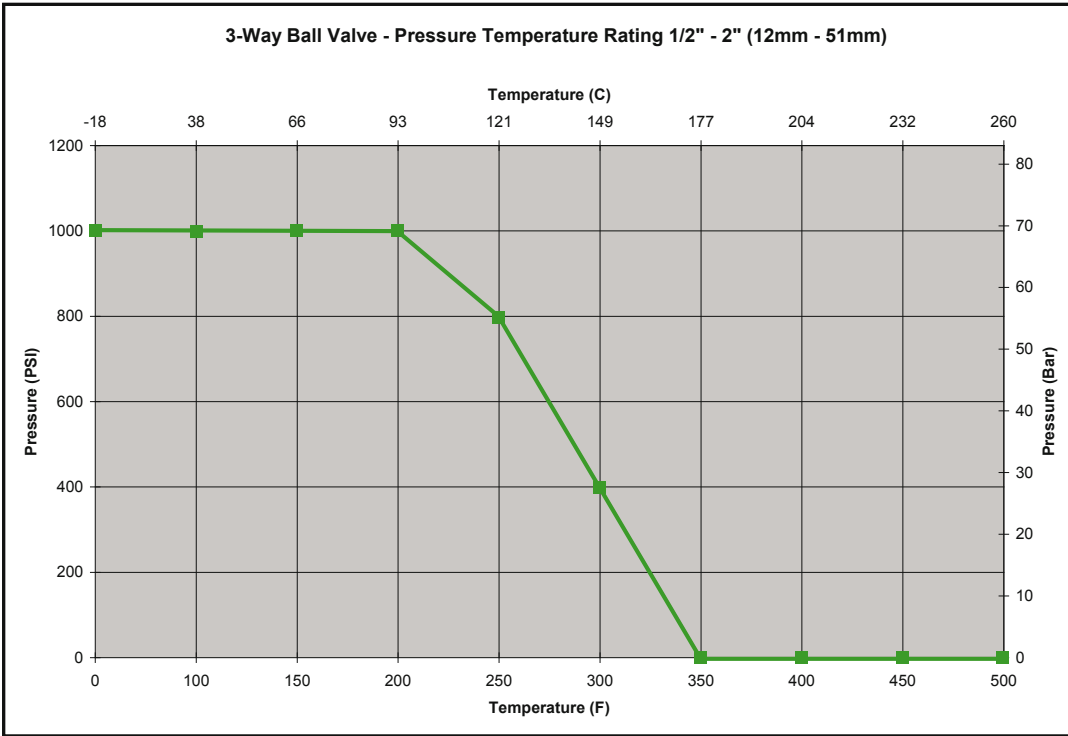
VALVE SIZE IN (mm)	A	B	C
0.50 (12)	5.68 (144)	5.80 (147)	3.20 (81)
0.75 (19)	5.68 (144)	6.02 (153)	3.20 (81)
1.00 (25)	5.68 (144)	6.65 (169)	3.20 (81)
1.50 (38)	7.20 (178)	9.17 (233)	4.68 (118)
2.00 (50)	7.20 (178)	9.96 (253)	4.68 (118)
2.50 (63)	2.37 (60)	11.10 (282)	4.68 (118)
3.00 (76)	10.22 (259)	13.42 (340)	5.53 (140)
4.00 (101)	10.22 (259)	14.21 (360)	5.53 (140)

### Air to Air Double Acting

VALVE SIZE IN (mm)	A	B	C
0.50 (12)	4.72 (119)	5.21 (132)	2.44 (62)
0.75 (19)	4.72 (119)	5.43 (138)	2.44 (62)
1.00 (25)	5.68 (144)	6.65 (169)	3.20 (81)
1.50 (38)	5.87 (149)	8.26 (209)	3.74 (95)
2.00 (50)	5.87 (149)	9.05 (229)	3.74 (95)
2.50 (63)	7.20 (178)	11.10 (282)	4.68 (118)
3.00 (76)	10.22 (259)	13.42 (340)	5.53 (140)
4.00 (101)	10.22 (259)	14.21 (360)	5.53 (140)

**ADDITIONAL TECHNICAL DATA:**

**Temperature Ratings - 350 Series**



### Ball Valve Torque vs. Rack and Pinion Actuator Torque Ratings - 300 and 350 Series

#### Imperial Units

VALVE SIZE IN (mm)	MIN. TORQUE TO ROTATE VALVE (DRY CONDITION)		OPERATING AIR PRESSURE TO ROTATE VALVE		TORQUE OUTPUT AIR TO SPRING IN-LBS				TORQUE OUTPUT AIR TO AIR IN-LBS	
	IN-LBS		psi (bar)		SPRING TORQUE START/END		AIR TORQUE START/END		AIR TORQUE AT OPERATING AIR PRESSURE	
	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES
0.50 (12)	40	70.8	80 (5.5)		140/90	140/90	151/93	151/93	125	125
0.75 (19)	58	88.5	80 (5.5)		140/90	140/90	151/93	151/93	125	125
1.00 (25)	80	146.0	80 (5.5)		254/162	140/90	271/167	151/93	250	250
1.50 (38)	155	265.5	80 (5.5)		559/360	559/360	599/371	599/371	450	450
2.00 (50)	208	398.2	80 (5.5)		559/360	559/360	599/371	599/371	450	450
2.50 (63)	500	1048.8	80 (5.5)		1320/787	559/360	1379/788	599/371	1000	1000
3.00 (76)	655	1349.7	80 (5.5)		2091/1217	1320/787	2300/1335	2300/1335	1000	2250
4.00 (101)	930	1447.0	80 (5.5)		3130/1570	1320/787	3180/1600	2300/1335	2250	2250

### Ball Valve Torque vs. Rack and Pinion Actuator Torque Ratings - 300 and 350 Series

#### Metric Units

VALVE SIZE IN (mm)	MIN. TORQUE TO ROTATE VALVE (DRY CONDITION)		OPERATING AIR PRESSURE TO ROTATE VALVE		TORQUE OUTPUT AIR TO SPRING N-M				TORQUE OUTPUT AIR TO AIR N-M	
	N-M		psi (bar)		SPRING TORQUE START/END		AIR TORQUE START/END		AIR TORQUE AT OPERATING AIR PRESSURE	
	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES	300 SERIES	350 SERIES
0.50 (12)	4.5	8.0	73 (5)		15.8/10.1	15.8/10.1	17.0/10.5	17.0/10.5	14.1	14.1
0.75 (19)	6.5	10.0	73 (5)		15.8/10.1	15.8/10.1	17.0/10.5	17.0/10.5	14.1	14.1
1.00 (25)	9.0	16.5	73 (5)		28.7/18.3	15.8/10.1	30.6/18.8	17.0/10.5	28.2	28.2
1.50 (38)	17.5	30.0	73 (5)		63.1/40.6	63.1/40.6	67.6/41.9	67.6/41.9	50.8	50.8
2.00 (50)	23.5	45.0	73 (5)		63.1/40.6	63.1/40.6	67.6/41.9	67.6/41.9	50.8	50.8
2.50 (63)	56.5	118.5	73 (5)		149.2/88.9	63.1/40.6	155.8/89.0	67.6/41.9	113	113
3.00 (76)	74.0	152.5	73 (5)		236.3/137.5	149.2/88.9	259.9/150.8	259.9/150.8	133	254.2
4.00 (101)	105.0	163.5	73 (5)		353.7/177.4	149.2/88.9	359.3/180.8	259.9/150.8	254.2	254.2

300/350 Series

**BALL VALVES**

**SPXFLOW<sup>®</sup>**

Based in Charlotte, North Carolina, SPX FLOW, Inc. (NYSE: FLOW) is a multi-industry manufacturing leader. For more information, please visit [www.spxflow.com](http://www.spxflow.com)

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WCB\_Valves-Ball-300-350\_DS-1228\_DST\_US

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