

Features

- Spring Return or Double Acting Actuators
- Full Port direct mount ISO5211 valve
- Swing-out bolted body design for easy maintenance
- 316 stainless steel body, ball and stem
- Actuators designed for minimum 1 million cycles
- Quarter turn rack and pinion design
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime
- Triple RTFE/Viton live loaded stem seals, adjustable
- Valve anti-static device
- Silicone free valve

Applications

On-off control of water, air, oil and other media compatible with the materials of construction. Cycle times approx. 1 to 1.5 seconds per 90° rotation. Steam service up to 50 PSI with optional high temperature mounting bracket. Suitable for vacuum service to 29"Hg.

Pressure-Temperature

Pressure Rating: 1000 PSI* (69 Bar*) 1/4"-2" sizes, 300 PSI 2-1/2"-3"
Vacuum to 29inHg

Air Pilot Pressure Required: 80-120 PSI (5.5-8.3 Bar)

Working Temperature: 0 to 180° F (-18 to 82° C)
Media temperatures up to 300° F (149° C)
with optional high temp. mounting bracket

Ball Valve Temperature Rating: 0 to 356° F (-18 to 180° C)

Actuator Temperature Rating: 0 to +180° F (-18 to 82° C)

*See P/T chart

Construction

Valve Body	316 stainless steel ASTM A351 CF8M
Ball/Stem	316 stainless steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	RTFE, Viton
Anti-static Device	Ball to Stem (1/4" - 3") + Stem to Body (1-1/2" - 3")
Actuator Seals	NBR (Buna-N)
Actuator Body	Anodized aluminium, epoxy-polyester coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel



Operation

Double acting actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return actuators use air pressure to open and springs to close the ball valve (3-way pilot). Actuator will work with filtered dry or lubricated compressed air. Air supply pilot pressure should be between 80 and 120 PSI. Easy to read visual valve position indicator located on top of actuator.

Description

Heavy duty quarter turn air actuators designed for long life and tested for a minimum 1 million operations. Unique 3-piece investment cast bolted body design offers the advantage of a swing-out body for easy inline maintenance. Adjustable live loaded stem seal packing helps compensate for wear, pressure or temperature fluctuations, extending the cycle life of the valve. Blow-out proof stem. Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners.

Optional Accessories

- DMS: Direct Mount Solenoid
- pilot to electrically operate the ball valve
- VPS: Valve Position Switches
- limit switches to confirm valve position
- PVP: Pneumatic Valve Positioner
- position the ball with 4-20mA or 0-10v
- HTB: High Temperature Bracket
- increases media working temperature

Specifications (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Cycle Time /90° (seconds)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR						
522502A	1/4	0.45	8	1000	1	1/8
522503A	3/8	0.49	10	1000	1	1/8
522504A	1/2	0.59	15	1000	1	1/8
522506A	3/4	0.79	35	1000	1	1/4
522508C	1	1.00	60	1000	1	1/4
522510A	1-1/4	1.25	90	1000	1	1/4
522512A	1-1/2	1.50	125	1000	1	1/4
522516A	2	2.00	240	1000	1	1/4
522520A	2-1/2	2.56	320	300	1.5	1/4
522524A	3	3.15	580	300	1.5	1/4
VALVE WITH DOUBLE ACTING ACTUATOR						
522402A	1/4	0.45	8	1000	1	1/8
522403A	3/8	0.49	10	1000	1	1/8
522404A	1/2	0.59	15	1000	1	1/8
522406A	3/4	0.79	35	1000	1	1/8
522408A	1	1.00	60	1000	1	1/8
522410A	1-1/4	1.25	90	1000	1	1/4
522412A	1-1/2	1.50	125	1000	1	1/4
522416A	2	2.00	240	1000	1	1/4
522420A	2-1/2	2.56	320	300	1.5	1/4
522424A	3	3.15	580	300	1.5	1/4

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

* Pressure @ 100° F (see P/T chart)

Pressure/Temperature Chart (PSI/°F)

P/T Chart							
PSI	1000	1000	1000	925	875	675	375
°F	0	50	100	150	200	250	300

Specifications (Metric units)

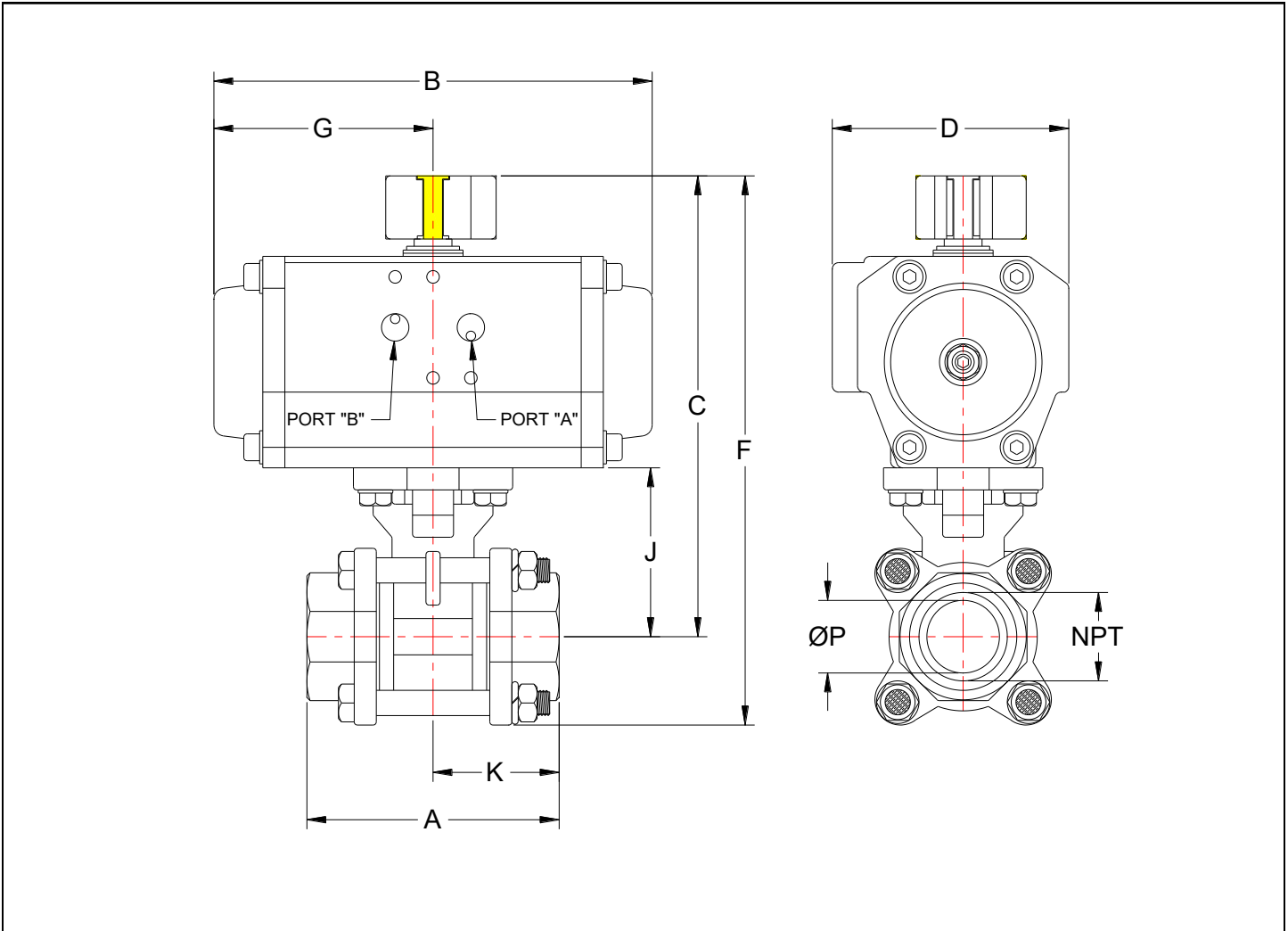
Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Cycle Time/90° (seconds)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR						
522502A	1/4	11.5	7	69	1	1/8
522503A	3/8	12.5	8.6	69	1	1/8
522504A	1/2	15	13	69	1	1/8
522506A	3/4	20	30	69	1	1/4
522508C	1	25	52	69	1	1/4
522510A	1-1/4	32	77	69	1	1/4
522512A	1-1/2	38	107	69	1	1/4
522516A	2	50	206	69	1	1/4
522520A	2-1/2	65	275	21	1.5	1/4
522524A	3	80	499	21	1.5	1/4
VALVE WITH DOUBLE ACTING ACTUATOR						
522402A	1/4	11.5	7	69	1	1/8
522403A	3/8	12.5	8.6	69	1	1/8
522404A	1/2	15	13	69	1	1/8
522406A	3/4	20	30	69	1	1/8
522408A	1	25	52	69	1	1/8
522410A	1-1/4	32	77	69	1	1/4
522412A	1-1/2	38	107	69	1	1/4
522416A	2	50	206	69	1	1/4
522420A	2-1/2	65	275	21	1.5	1/4
522424A	3	80	499	21	1.5	1/4

* Pressure @ 70° C (see P/T chart)

Pressure/Temperature Chart (Bar/°C)

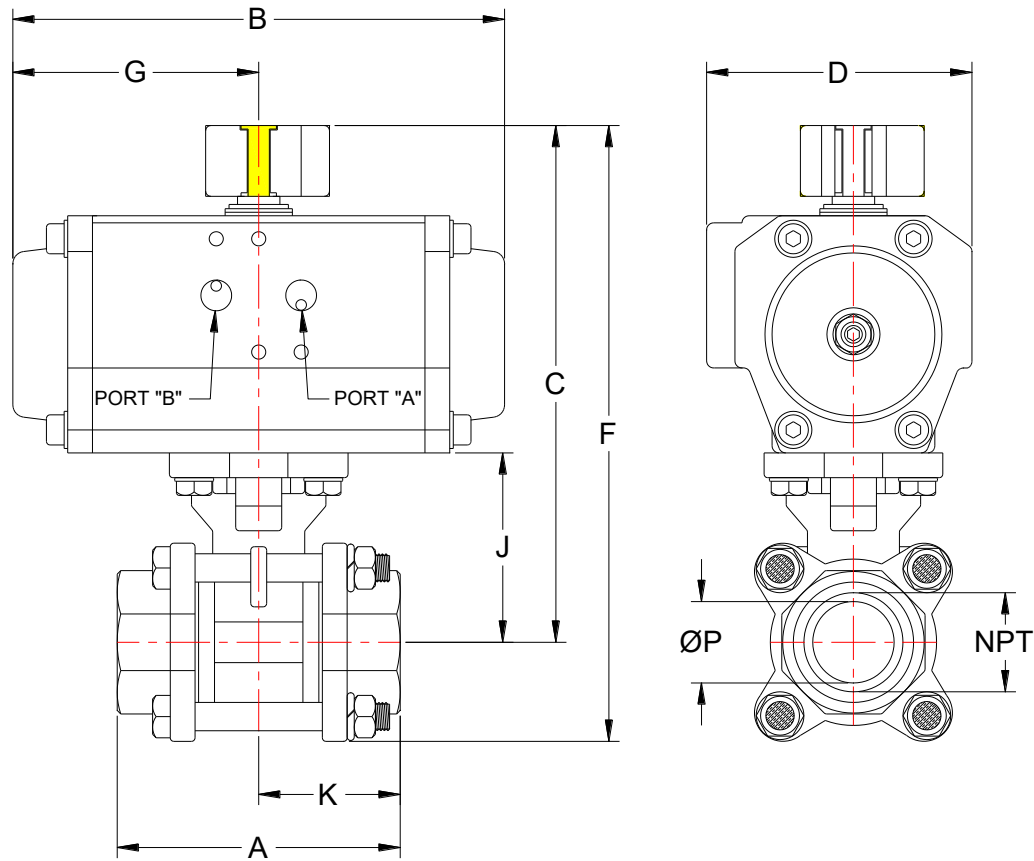
P/T Chart							
Bar	69	69	69	65	60	46.5	26
°C	-18	10	38	70	93	121	149

Dimensions: Spring Return (inches (mm))



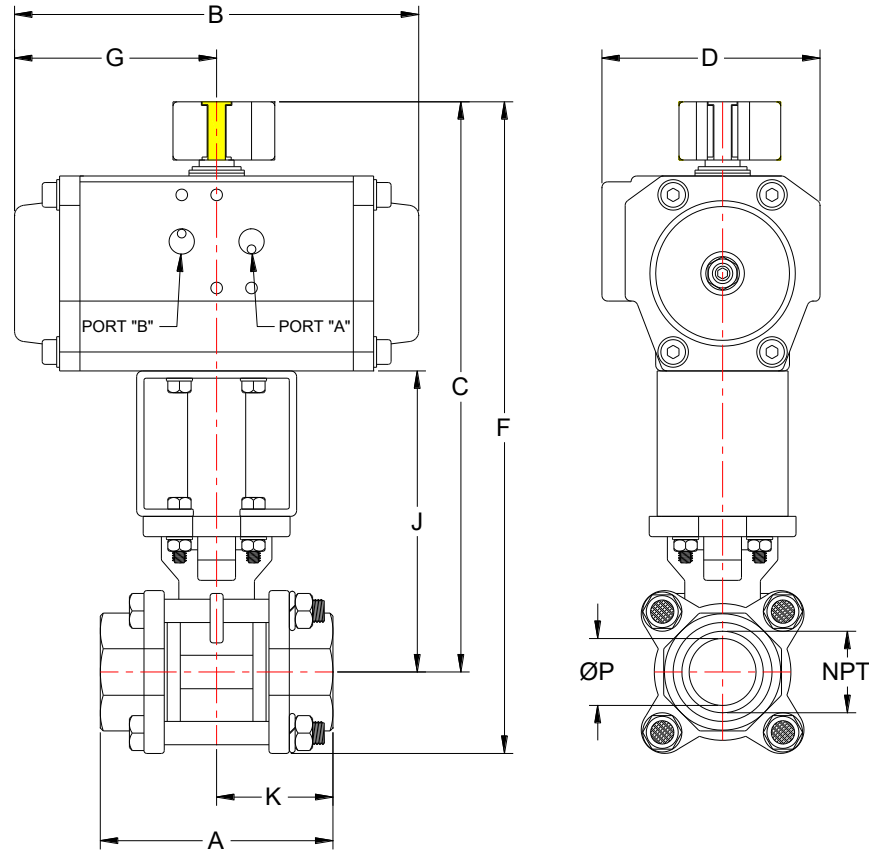
Pipe Size (NPT)	A	B	C	D	F	G	J	K	P	Ports (NPT)	Weight lbs (kg)
1/4	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.45 (11.5)	1/8	4.0 (1.8)
3/8	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.49 (12.5)	1/8	4.0 (1.8)
1/2	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.59 (15)	1/8	3.9 (1.8)
3/4	2.85 (72.5)	6.14 (156)	5.83 (148)	3.39 (86)	6.81 (173)	3.07 (78)	1.77 (45)	1.43 (36.3)	0.79 (20)	1/4	5.7 (2.6)
1	3.19 (81.0)	8.27 (210)	6.85 (174)	3.70 (94)	7.95 (202)	4.13 (105)	2.11 (53.5)	1.61 (41)	0.98 (25)	1/4	9.4 (4.3)
1-1/4	3.72 (94.5)	8.27 (210)	7.05 (179)	3.70 (94)	8.35 (212)	4.13 (105)	2.32 (59)	1.86 (47.3)	1.26 (32)	1/4	10.4 (4.7)
1-1/2	4.25 (108)	9.06 (230)	8.07 (205)	4.09 (104)	9.57 (243)	4.53 (115)	2.94 (74.8)	2.13 (54)	1.50 (38)	1/4	15.3 (6.9)
2	4.80 (122)	11.02 (280)	9.02 (229)	4.72 (120)	10.83 (275)	5.51 (140)	3.29 (83.5)	2.40 (61)	1.97 (50)	1/4	22.4 (10.1)
2-1/2	6.22 (158)	12.20 (310)	11.06 (281)	5.28 (134)	13.23 (336)	6.10 (155)	4.29 (109)	3.11 (79)	2.56 (65)	1/4	39.0 (17.7)
3	7.48 (190)	15.35 (390)	12.72 (323)	6.42 (163)	15.28 (388)	7.68 (195)	4.65 (118)	3.74 (95)	3.15 (80)	1/4	64.9 (29.4)

Dimensions: Double acting (inches (mm))



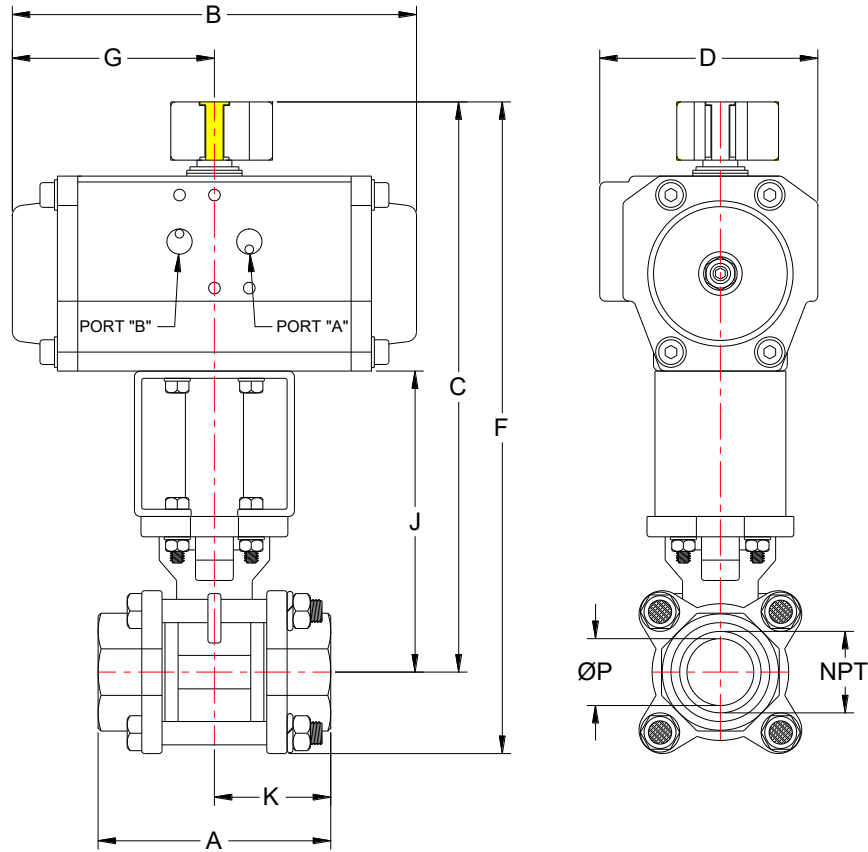
Pipe Size (NPT)	A	B	C	D	F	G	J	K	P	Ports (NPT)	Weight lbs (kg)
1/4	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.45 (11.5)	1/8	3.7 (1.7)
3/8	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.49 (12.5)	1/8	3.7 (1.7)
1/2	2.50 (63.5)	5.47 (139)	4.88 (124)	2.95 (75)	5.79 (147)	2.74 (69.5)	1.46 (37)	1.25 (31.8)	0.59 (15)	1/8	3.6 (1.6)
3/4	2.85 (72.5)	5.47 (139)	5.20 (132)	2.95 (75)	6.18 (157)	2.74 (69.5)	1.77 (45)	1.43 (36.3)	0.79 (20)	1/8	4 (1.8)
1	3.19 (81)	5.47 (139)	5.55 (141)	2.95 (75)	6.65 (169)	2.74 (69.5)	2.11 (53.5)	1.61 (41)	0.98 (25)	1/8	4.6 (2.1)
1-1/4	3.72 (94.5)	6.14 (156)	6.38 (162)	3.39 (86)	7.68 (195)	3.07 (78)	2.32 (59)	1.86 (47.3)	1.26 (32)	1/4	6.7 (3.0)
1-1/2	4.25 (108)	8.27 (210)	7.68 (195)	3.70 (94)	9.17 (233)	4.13 (105)	2.94 (74.8)	2.13 (54)	1.50 (38)	1/4	11.3 (5.1)
2	4.80 (122)	8.27 (210)	8.03 (204)	3.70 (94)	9.84 (250)	4.13 (105)	3.29 (83.5)	2.40 (61)	1.97 (50)	1/4	14.1 (6.4)
2-1/2	6.22 (158)	9.06 (230)	9.41 (239)	4.09 (104)	11.57 (294)	4.53 (115)	4.29 (109)	3.11 (79)	2.56 (65)	1/4	26 (11.8)
3	7.48 (190)	11.02 (280)	10.35 (263)	4.72 (120)	12.91 (328)	5.51 (140)	4.65 (118)	3.74 (95)	3.15 (80)	1/4	36.6 (16.6)

Dimensions: Spring Return with High Temp. Mounting Bracket (inches (mm))



Pipe Size (NPT)	A	B	C	D	F	G	J	K	P	Ports (NPT)	Weight lbs (kg)
1/4	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.45 (11.5)	1/8	4.7 (2.1)
3/8	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.49 (12.5)	1/8	4.7 (2.1)
1/2	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.59 (15)	1/8	4.6 (2.1)
3/4	2.85 (72.5)	6.14 (156)	7.80 (198)	3.39 (86)	8.78 (223)	3.07 (78)	3.74 (95)	1.43 (36.3)	0.79 (20)	1/4	6.4 (2.9)
1	3.19 (81)	8.27 (210)	8.82 (224)	3.70 (94)	9.92 (252)	4.13 (105)	4.09 (104)	1.61 (41)	0.98 (25)	1/4	10.1 (4.6)
1-1/4	3.72 (94.5)	8.27 (210)	9.02 (229)	3.70 (94)	10.31 (262)	4.13 (105)	4.29 (109)	1.86 (47.3)	1.26 (32)	1/4	11.1 (5.0)
1-1/2	4.25 (108)	9.06 (230)	10.04 (255)	4.09 (104)	11.54 (293)	4.53 (115)	4.92 (125)	2.13 (54)	1.50 (38)	1/4	16.3 (7.4)
2	4.80 (122)	11.02 (280)	10.98 (279)	4.72 (120)	12.80 (325)	5.51 (140)	5.28 (134)	2.40 (61)	1.97 (50)	1/4	23.4 (10.6)
2-1/2	6.22 (158)	12.20 (310)	13.03 (331)	5.28 (134)	15.20 (386)	6.10 (155)	6.26 (159)	3.11 (79)	2.56 (65)	1/4	40.2 (18.2)

Dimensions: Double Acting with High Temp. Mounting Bracket (inches (mm))



Pipe Size (NPT)	A	B	C	D	F	G	J	K	P	Ports (NPT)	Weight lbs (kg)
1/4"	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.45 (11.5)	1/8	4.4 (2.0)
3/8"	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.49 (12.5)	1/8	4.4 (2.0)
1/2"	2.50 (63.5)	5.47 (139)	6.85 (174)	2.95 (75)	7.76 (197)	2.74 (69.5)	3.43 (87)	1.25 (31.8)	0.59 (15)	1/8	4.3 (2.0)
3/4"	2.85 (72.5)	5.47 (139)	7.17 (182)	2.95 (75)	8.15 (207)	2.74 (69.5)	3.74 (95)	1.43 (36.3)	0.79 (20)	1/8	4.7 (2.1)
1"	3.19 (81.0)	5.47 (139)	7.52 (191)	2.95 (75)	8.62 (219)	2.74 (69.5)	4.09 (104)	1.61 (41)	0.98 (25)	1/8	5.3 (2.4)
1-1/4"	3.72 (94.5)	6.14 (156)	8.35 (212)	3.39 (86)	9.65 (245)	3.07 (78)	4.29 (109)	1.86 (47.3)	1.26 (32)	1/4	7.4 (3.4)
1-1/2"	4.25 (108)	8.27 (210)	9.65 (245)	3.70 (94)	11.14 (283)	4.13 (105)	4.92 (125)	2.13 (54)	1.50 (38)	1/4	12.3 (5.6)
2"	4.80 (122)	8.27 (210)	10.00 (254)	3.70 (94)	11.81 (300)	4.13 (105)	5.28 (134)	2.40 (61)	1.97 (50)	1/4	15.1 (6.8)
2-1/2"	6.22 (158)	9.06 (230)	11.38 (289)	4.09 (104)	13.54 (344)	4.53 (115)	6.26 (159)	3.11 (79)	2.56 (65)	1/4	27.2 (12.3)
3"	7.48 (190)	11.02 (280)	12.32 (313)	4.72 (120)	14.88 (378)	5.51 (140)	6.61 (168)	3.74 (95)	3.15 (80)	1/4	37.7 (17.1)