Pneumatic/ Manual Combo High Pressure Ball Valves

3-Piece Stainless Steel, Full Port, 2000 PSI 1/4" to 2" NPT

SERIES
5312
5319

Features

- High pressure (2000 CWP)
- Fire Safe approved (API 607 6th Edition)
- 316 Stainless Steel 3-piece investment cast body
- Swing-out center section
- RTFE (reinforced Teflon) ball seats
- Braided graphite/Viton live loaded and adjustment stem seals
- Valves tested accordance with API 598
- Rack and pinion quarter turn (90°) rotation
- Spring Return or Double Acting Actuators
- Type IP67 weatherproof actuator
- Variable open/close stroke setting
- ATEX approved
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime

Applications

Pneumatic/manual actuated high pressure stainless ball valves with braided graphite/ viton seals are typically used for control of water, air, oil and other media compatible with the materials of construction. The de-clutch option can be used for manual operation or to set a stop limit for opening or closing. Cycle times approx. 1 to 3 seconds per 90° rotation.

Not suitable for potable water, oxygen or high purity fluid applications.

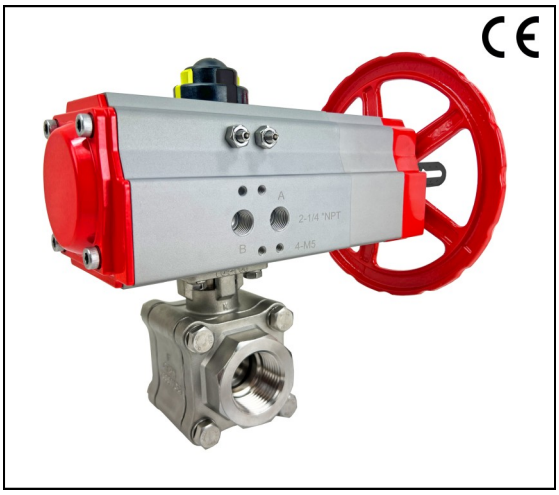
Operation

Double acting actuators require air pressure to open and air pressure to close. Spring return actuators require air pressure to open and utilize springs to close for failsafe operation. Pulling the handwheel détente pin allows manual operation of the valve via the handwheel. Re-engaging the détente pin mid-stroke creates a partial stroke position, ie the automatic stroke begins/ends at the locked handwheel position. Rotating the handwheel counterclockwise rotates the output drive counterclockwise when viewed from the top.

Pilot Air should be filtered, dry or lubricated.

Construction

Valve Body	316 Stainless Steel ASTM A351 CF8M
Ball/Stem	316 Stainless Steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	Braided Graphite
Actuator Seals	NBR (Buna-N)
Actuator Body	Extruded aluminium– 35 micron anodizing, 40 micron polyester coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel



Description

Valworx heavy duty pneumatic/manual combination actuator features hard anodized aluminum enclosure, type IP67. Actuators are available in double acting and spring return models. 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. Rotation adjustment +5° at the 0° and 90° positions. The integral handwheel is used for manual operation and setting a limit stop.

Approvals– Actuators

- CE Declaration of conformity
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- ATEX

Standards– Valves

- Fire Safe: API 607 6th Edition
- Testing: API 598
- Threaded Connection: ASME B1.20.1 (NPT)/ ISO 228-1/ BS21
- Pressure/Temperature Rating: ASME B16.34
- Marking: MSS SP-25
- CE-PED 2014/68/UE

Construction Features

Heavy duty rugged rack and pinion design

Visual valve position indicator

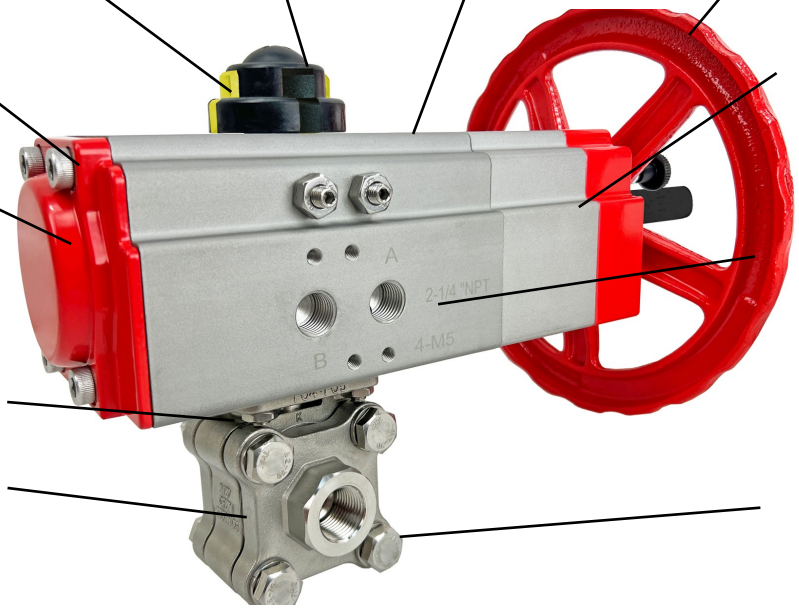
Standard Namur top mounting for optional switches

Integral handwheel for manual operation

Anodized aluminum alloy covers with 40 micron polyester powder coating

Hard anodized aluminum body, Type IP67

Spring return models use multiple pre-compressed spring cartridges with polyester coating



NPT pilot air ports and additional Namur VDI/VDE-3845 solenoid mounting pad

Braided Graphite stem seals

316SS ball and stem, RTFE ball seats

Full port 316 stainless steel ball valve, repairable and easily removed from pipe line

Inline mounting option below:
A5312/A5319

Pressure Rating

Valve Pressure Rating: 2000 PSI (138 Bar) CWP non-shock

*See P/T chart

Pilot Air Pressure– Double Acting: 29-120 PSI (2-8 Bar)

Pilot Air Pressure– Spring Return: 87-120 PSI (6-8 Bar)

Temperature Rating

Ball Valve Temperature Rating: -4 to 392° F (-20 to 200° C)

Actuator Temperature Rating: -4 to 176° F (-20 to 80° C)

*See P/T chart

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
HTB: High Temperature Bracket
- increases media working temperature
Lock out/Tag out device
Inline mounting

Specifications (English units)

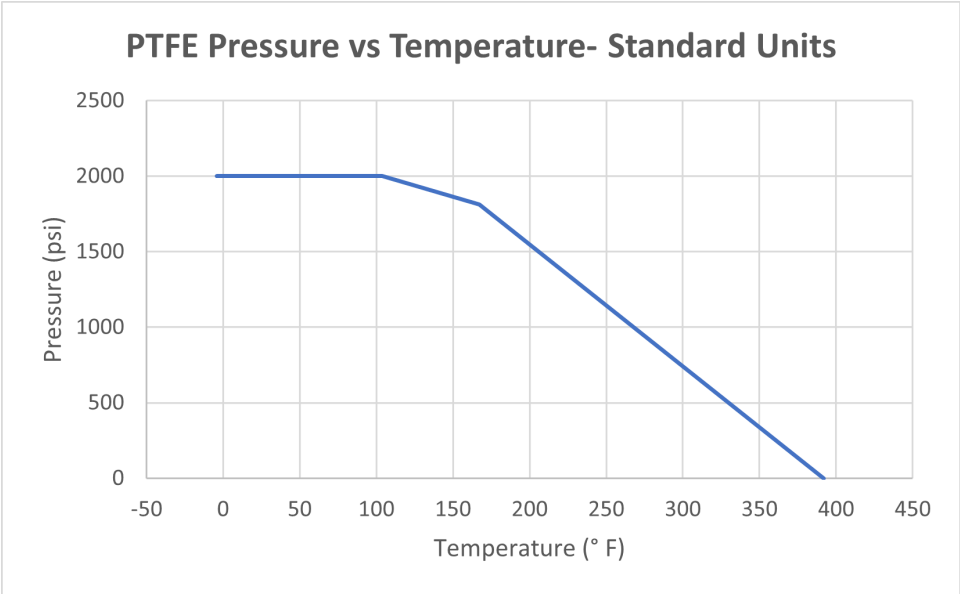
Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Air Volume/90° (cubic inches)	Cycle Time /90° (seconds)	Pilot Air Port (NPT)
HIGH PRESSURE STAINLESS BALL VALVE WITH SRING RETURN ACTUATOR							
531902	1/4	0.45	14.2	2000	24.4	1-1	1/4
531903	3/8	0.49	16.7	2000	24.4	1-1	1/4
531904	1/2	0.59	24.1	2000	42.7	1-1	1/4
531906	3/4	0.79	44.6	2000	54.9	1-1	1/4
531908	1	1.00	72.7	2000	91.5	1-1	1/4
531910	1-1/4	1.25	122.0	2000	128.1	1-1	1/4
531912	1-1/2	1.50	176.3	2000	201.4	3-1	1/4
531916	2	2.00	313.1	2000	201.4	3-1	1/4
HIGH PRESSURE STAINLESS BALL VALVE WITH DOUBLE ACTING ACTUATOR							
531202	1/4	0.45	14.2	2000	18.3	1-1	1/4
531203	3/8	0.49	16.7	2000	18.3	1-1	1/4
531204	1/2	0.59	24.1	2000	18.3	1-1	1/4
531206	3/4	0.79	44.6	2000	24.4	1-1	1/4
531208	1	1.00	72.7	2000	42.7	1-1	1/4
531210	1-1/4	1.25	122.0	2000	54.9	1-1	1/4
531212	1-1/2	1.50	176.3	2000	91.5	1-1	1/4
531216	2	2.00	313.1	2000	91.5	1-1	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 2000 PSI (138 Bar)

P/T Chart (PSI/°F)				
°F	-4	104	167	392
PSI	2000	2000	1812	0



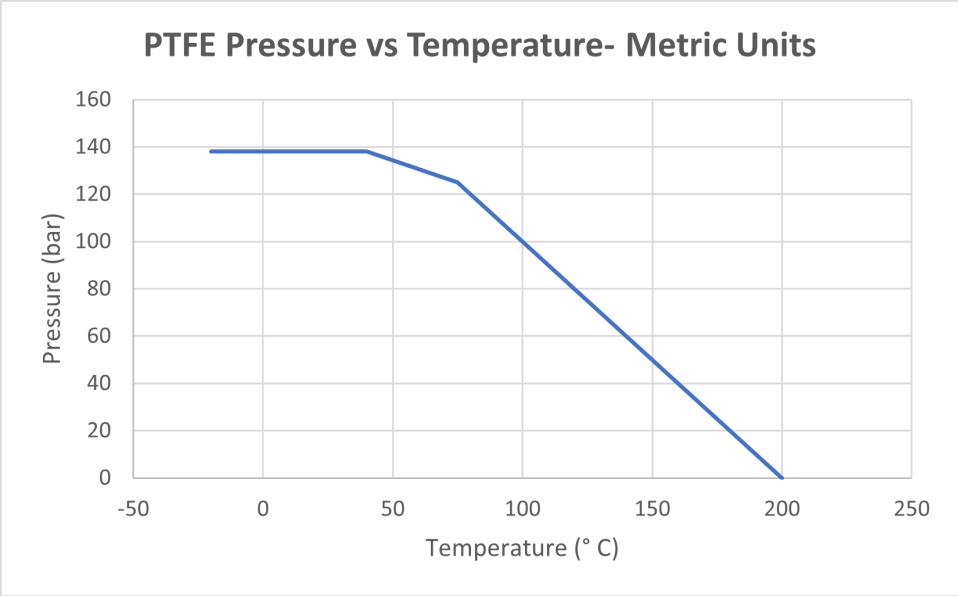
Specifications (Metric units)

Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Air Volume/90° (cubic liters)	Cycle Time/90° (seconds)	Pilot Air Port (NPT)
HIGH PRESSURE STAINLESS BALL VALVE WITH SRING RETURN ACTUATOR							
531902	1/4	11.5	12.3	138	0.4	1-1	1/4
531903	3/8	12.5	14.4	138	0.4	1-1	1/4
531904	1/2	15.0	20.8	138	0.7	1-1	1/4
531906	3/4	20.0	38.6	138	0.9	1-1	1/4
531908	1	25.0	62.9	138	1.5	1-1	1/4
531910	1-1/4	32.0	105.5	138	2.1	1-1	1/4
531912	1-1/2	38.0	152.5	138	3.3	3-1	1/4
531916	2	50.0	270.8	138	3.3	3-1	1/4
HIGH PRESSURE STAINLESS BALL VALVE WITH DOUBLE ACTING ACTUATOR							
531202	1/4	11.5	12.3	138	0.3	1-1	1/4
531203	3/8	12.5	14.4	138	0.3	1-1	1/4
531204	1/2	15.0	20.8	138	0.3	1-1	1/4
531206	3/4	20.0	38.6	138	0.4	1-1	1/4
531208	1	25.0	62.9	138	0.7	1-1	1/4
531210	1-1/4	32.0	105.5	138	0.9	1-1	1/4
531212	1-1/2	38.0	152.5	138	1.5	1-1	1/4
531216	2	50.0	270.8	138	1.5	1-1	1/4

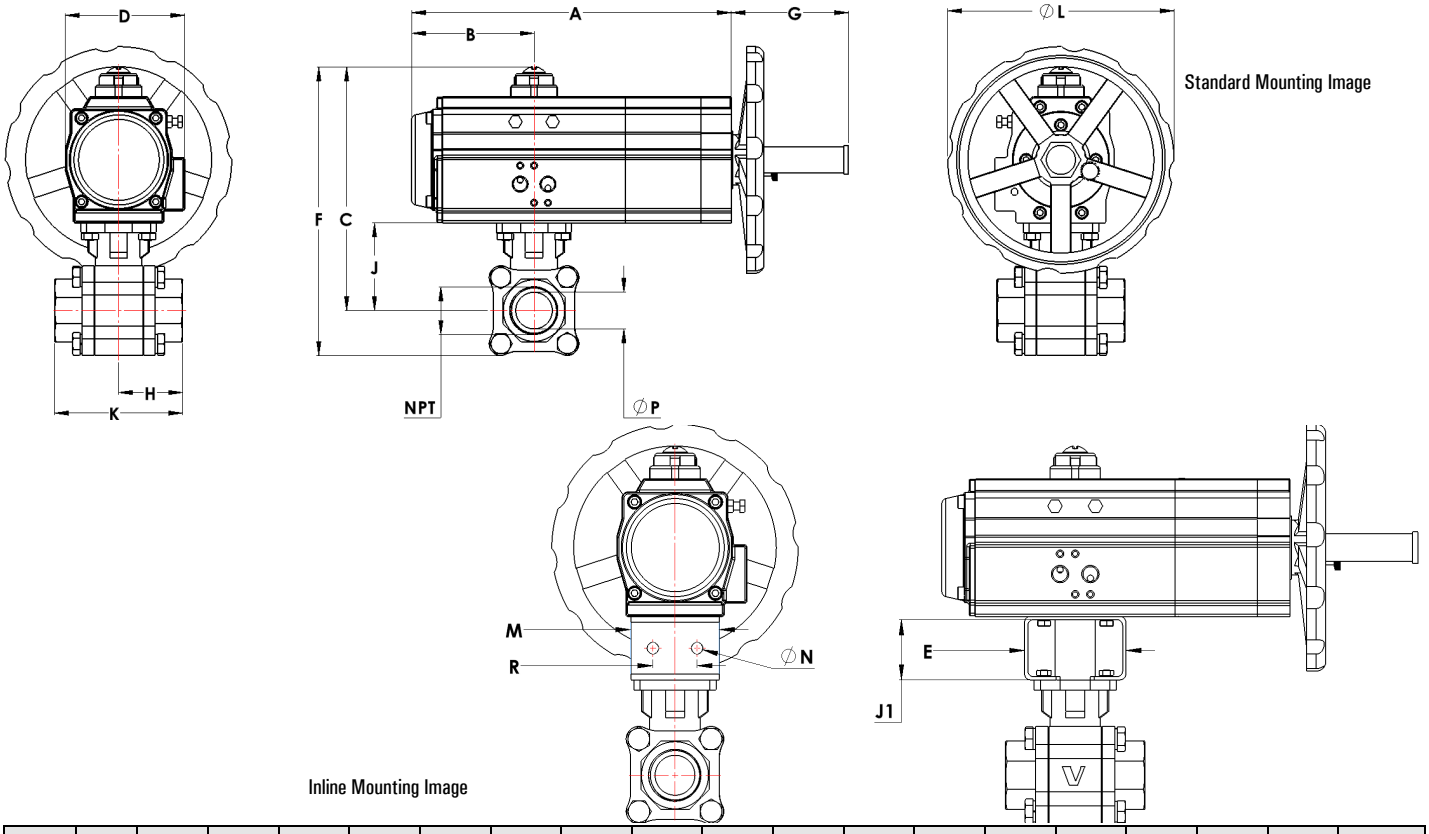
* Pressure @ 70° C (see P/T chart)

Pressure/Temperature Chart 2000 PSI (138 Bar)

P/T Chart (BAR/°C)				
°C	-20	40	75	200
Bar	138	138	125	0

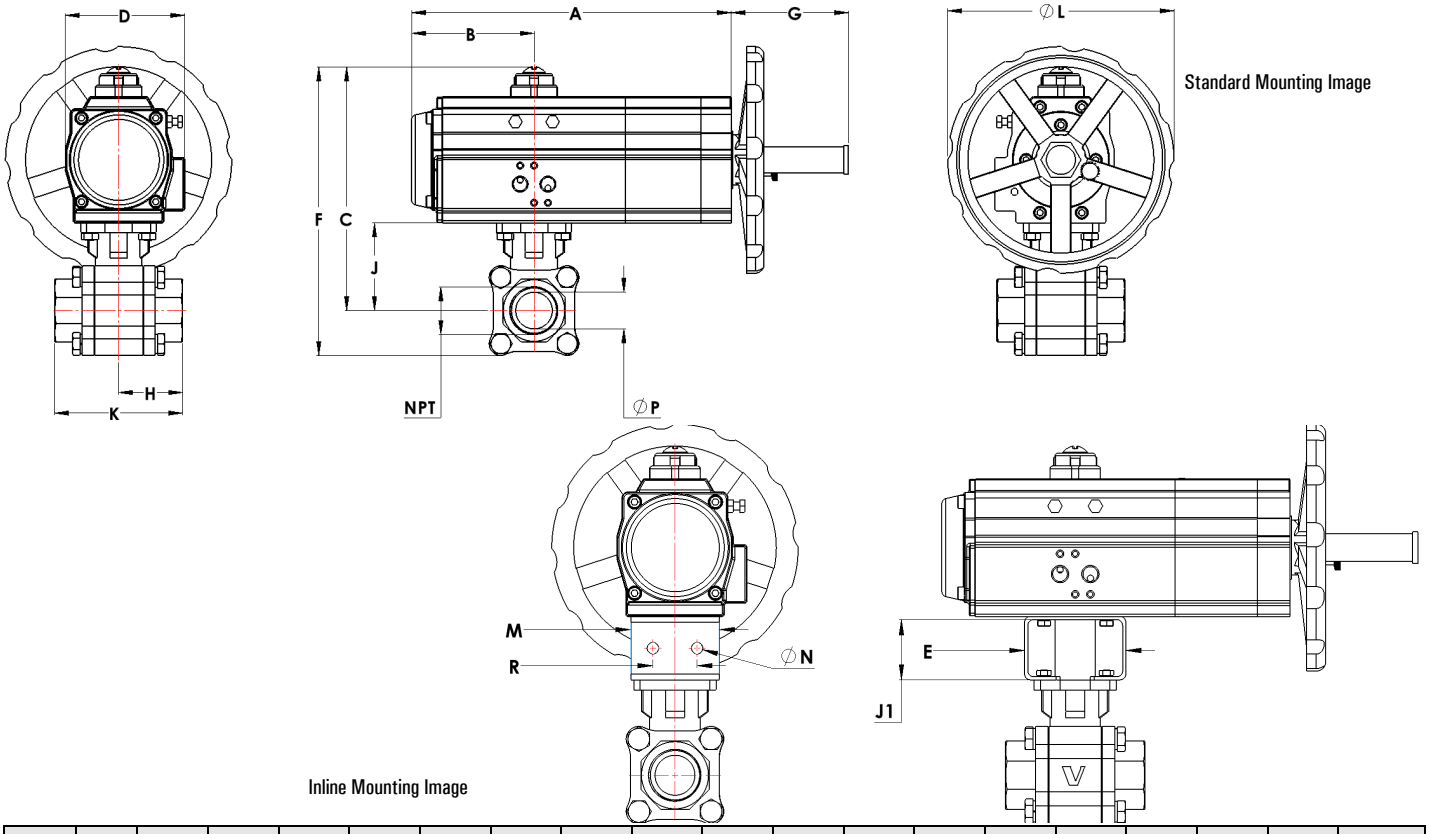


Dimensions: Spring Return



Pipe Size (NPT)		A	B	C	D	E	F	G	H	J	J1	K	L	M	N	P	R	Ports (NPT)	Weight lb / kg
1/4	inch	9.2	3.3	5.8	1.3	2.4	7.1	3.3	1.3	1.5	2.0	2.6	7.7	2.0	0.3	0.5	1.2	1/4	12.4 lb
	mm	233.7	83.8	147.3	32.5	60.0	180.3	83.8	32.5	37.5	50.0	65.0	195.0	50.0	9.0	11.5	30.0	-	5.6 kg
3/8	inch	9.2	3.3	5.8	1.3	2.4	7.1	3.3	1.3	1.5	2.0	2.6	7.7	2.0	0.3	0.5	1.2	1/4	12.3 lb
	mm	233.7	83.8	147.3	32.5	60.0	180.3	83.8	32.5	37.5	50.0	65.0	195.0	50.0	9.0	12.5	30.0	-	5.6 kg
1/2	inch	9.6	3.6	6.2	1.5	2.4	7.5	3.5	1.5	1.5	2.0	3.0	7.1	2.0	0.3	0.6	1.2	1/4	14.6 lb
	mm	243.8	91.4	157.5	37.5	60.0	190.5	88.9	37.5	37.5	50.0	75.0	180.0	50.0	9.0	15.0	30.0	-	6.6 kg
3/4	inch	10.7	4.2	7.1	1.6	2.4	8.3	4.0	1.6	2.0	2.0	3.1	7.7	2.0	0.3	0.8	1.2	1/4	17.9 lb
	mm	271.8	106.7	180.3	40.0	60.0	310.8	101.6	40.0	50.0	50.0	80.0	195.0	50.0	9.0	20.0	30.0	-	8.1 kg
1	inch	13.4	5.2	7.8	1.8	2.4	9.1	4.3	1.8	2.4	2.0	3.5	9.8	2.0	0.3	1.0	1.2	1/4	27.1 lb
	mm	340.4	132.1	198.1	45.0	60.0	231.1	109.2	45.0	60.0	50.0	90.0	250.0	50.0	9.0	25.0	30.0	-	12.3 kg
1-1/4	inch	13.6	5.3	9.0	2.2	4.7	10.5	4.9	2.2	3.0	2.0	4.3	9.8	2.8	0.4	1.3	1.4	1/4	33.5 lb
	mm	345.4	134.6	228.6	55.0	120.0	266.7	124.5	55.0	75.3	50.0	110.0	250.0	70.0	11.0	32.0	35.0	-	15.2 kg
1-1/2	inch	15.8	5.9	10.0	2.4	4.7	11.9	5.2	2.4	3.1	2.0	4.7	15.7	2.8	0.4	1.5	1.4	1/4	56.1 lb
	mm	401.3	149.9	254.0	60.0	120.0	302.3	132.1	60.0	79.3	50.0	120.0	400.0	70.0	11.0	38.0	35.0	-	25.5 kg
2	inch	15.8	5.9	10.7	2.8	4.7	13.0	5.2	2.8	3.8	2.0	5.5	15.7	2.8	0.4	2.0	1.4	1/4	62.1 lb
	mm	401.3	149.9	271.8	70.0	120.0	330.2	132.1	70.0	96.0	50.0	140.0	400.0	70.0	11.0	50.0	35.0	-	28.2 kg

Dimensions: Double Acting



Pipe Size (NPT)		A	B	C	D	E	F	G	H	J	J1	K	L	M	N	P	R	Ports (NPT)	Weight lb / kg
1/4	inch	8.3	3.1	5.1	1.3	2.4	6.4	2.9	1.3	1.5	2.0	2.6	7.1	2.0	0.3	0.5	1.2	1/4	8.1 lb
	mm	210.8	78.7	129.5	32.5	60.0	162.6	73.7	32.5	37.5	50.0	65.0	180.0	50.0	9.0	11.5	30.0	-	3.7 kg
3/8	inch	8.3	3.1	5.1	1.3	2.4	6.4	2.9	1.3	1.5	2.0	2.6	7.1	2.0	0.3	0.5	1.2	1/4	8.2 lb
	mm	210.8	78.7	129.5	32.5	60.0	162.6	73.7	32.5	37.5	50.0	65.0	180.0	50.0	9.0	12.5	30.0	-	3.7 kg
1/2	inch	8.3	3.1	5.1	1.5	2.4	6.4	2.9	1.5	1.5	2.0	3.0	7.1	2.0	0.3	0.6	1.2	1/4	8.2 lb
	mm	210.8	78.7	129.5	37.5	60.0	162.6	73.7	37.5	37.5	50.0	75.0	180.0	50.0	9.0	15.0	30.0	-	3.7 kg
3/4	inch	9.2	3.3	6.3	1.6	2.4	7.5	3.3	1.6	2.0	2.0	3.1	7.7	2.0	0.3	0.8	1.2	1/4	12.9 lb
	mm	233.7	83.8	160.0	40.0	60.0	190.5	83.8	40.0	50.0	50.0	80.0	195.0	50.0	9.0	20.0	30.0	-	5.9 kg
1	inch	9.6	3.6	7.1	1.8	2.4	8.4	3.5	1.8	2.4	2.0	3.5	7.1	2.0	0.3	1.0	1.2	1/4	16.1 lb
	mm	243.8	91.4	180.3	45.0	60.0	213.4	88.9	45.0	60.0	50.0	90.0	180.0	50.0	9.0	25.0	30.0	-	7.3 kg
1-1/4	inch	10.7	4.2	8.1	2.2	3.1	9.9	4.0	2.2	3.0	2.0	4.3	7.7	2.8	0.3	1.3	1.4	1/4	20.6 lb
	mm	271.8	106.7	205.7	55.0	80.0	251.5	101.6	55.0	75.3	50.0	110.0	195.0	70.0	9.0	32.0	35.0	-	9.4 kg
1-1/2	inch	13.4	5.2	8.5	2.4	3.1	10.4	4.3	2.4	3.1	2.0	4.7	9.8	2.8	0.3	1.5	1.4	1/4	30.7 lb
	mm	340.4	132.1	215.9	60.0	80.0	264.2	109.2	60.0	79.3	50.0	120.0	250.0	70.0	9.0	38.0	35.0	-	14.0 kg
2	inch	13.4	5.2	9.2	2.8	3.1	11.5	4.3	2.8	3.8	2.0	5.5	9.8	2.8	0.3	2.0	1.4	1/4	36.4 lb
	mm	340.4	132.1	233.7	70.0	80.0	292.1	109.2	70.0	96.0	50.0	140.0	250.0	70.0	9.0	50.0	35.0	-	16.5 kg