

Features

- Fire safe approved (API 607)
- Fugitive Emission approved (API 641)
- Pipeline use approved (API 608)
- Fugitive Emission Stem Seal approved (API 622)
- RTFE (reinforced Teflon) ball seats
- Braided graphite stem seals
- Spring Return or Double Acting Actuators
- Quarter turn rack and pinion design
- Electro-polished exterior actuator surfaces
- Corrosion resistant 316 stainless steel body, pistons & rack
- NEMA 4/4X (IP66) enclosure for washdown applications
- Coated springs for additional corrosion resistance (for spring return models)
- Externally adjustable stroke
- Pre-lubricated and tested to minimum 1 million operations
- Highly visible valve position indicator
- Valve tested per API598

Applications

Stainless steel ball valves with braided graphite seals are typically used for on-off control of water, air, oil, vacuum and other media compatible with the materials of construction. Also for use in pipeline, firesafe and low-emission applications. The valve utilizes special high cycle life seals with the lowest operating torques. Valves can be direct mounted to air or electric actuators using the standard ISO5211 mounting pad, eliminating the need for extra mounting brackets and couplings. Steam service up to 25 PSI with optional high temperature mounting kit. Suitable for vacuum service up to 29inHg

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

Operation

Double acting rack & pinion actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return rack & pinion 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.

Construction

Valve Body	316SS ASTM A351, CF8M
Ball/Stem	316SS CF8M
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	Braided Graphite (Slade 3300i), Viton
Actuator Seals	NBR (Buna-N)
Actuator Body	ASTM 316 Stainless Steel
Position Indicator	Plastic
Fasteners	ASTM 304 Stainless Steel



Description

Dual certified (low emission/fire safe) investment cast 2-piece full port stainless steel body/ball for unrestricted flow and minimum pressure loss. Heavy duty stainless steel quarter turn rack & pinion actuators designed for long life and tested for a minimum 1 million operations. 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 and pilot valves.

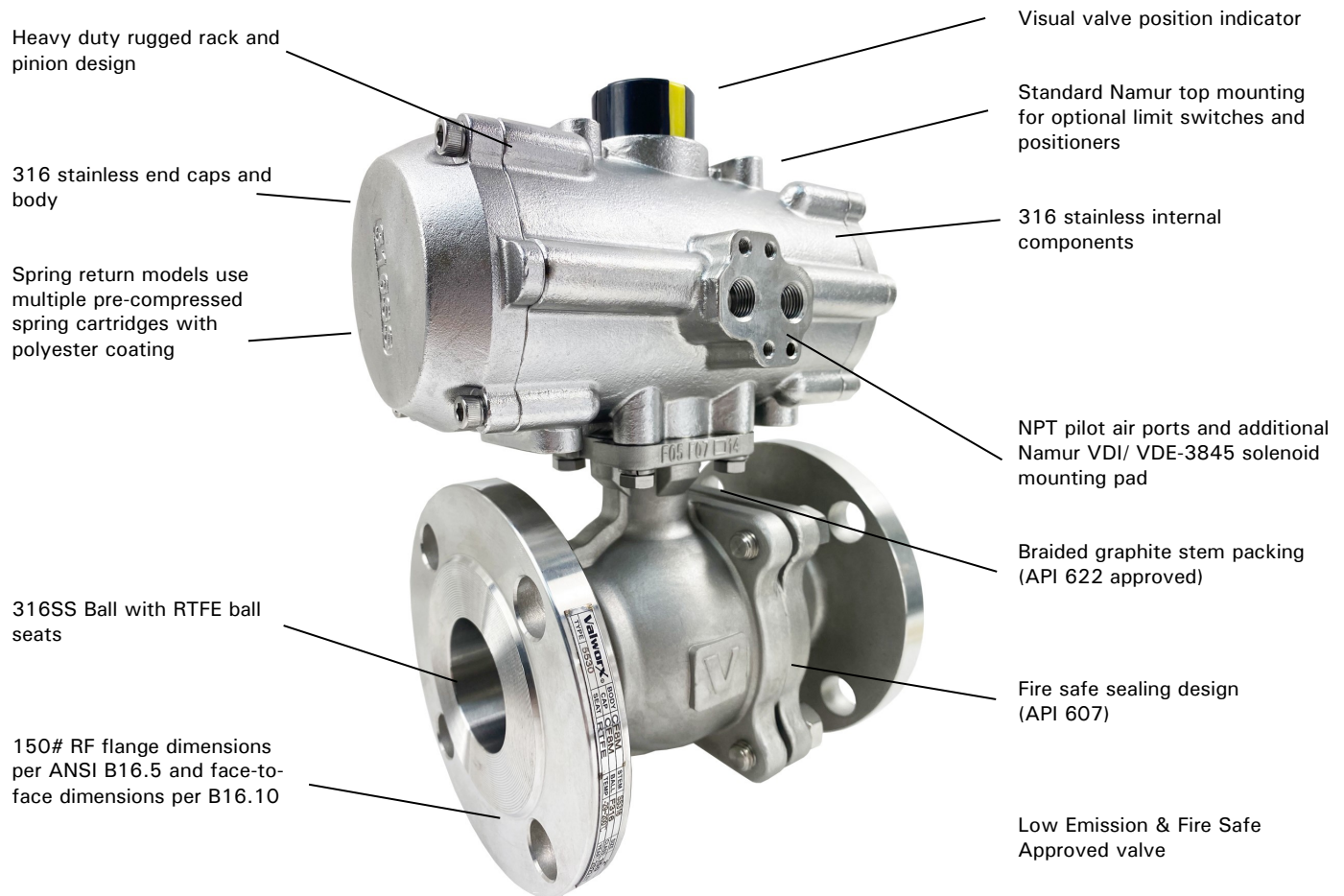
Approvals– Actuators

- CE Declaration of conformity-MD 2006/42/CE
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting

Standards– Valves

- Fire Safe: API 607(VI)/ISO10497(III)
- Fugitive Emission: API 641 (II)
- Pipeline Use: API 608
- Stem Packing: API 622
- Construction: ASME B16:34
- End Connection: ANSI Class 150 Flange RF
- Face to Face: ANSI B16.10 Class 150
- Flange Dimensions: ANSI B16.5 Class 150
- Pressure Testing: API 598, EN12266
- Direct Mounting Pad: ISO5211, square stem
- Marking: MSS SP-25
- CE Declaration of conformity– PED 2014/68/UE

Features



* Refer to specifications table for Tri-Clamp size

* Note: Tri-Clamp size is **NOT** determined by the OD of the end cap

International standard ISO5211 valve mounting pad

Pressure-Temperature

Pressure Rating*: 275 PSI (19 Bar*), 25 PSI saturated steam with high temp kit

Vacuum 29inHg

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

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 or 0-10v
- HTB: High Temperature Bracket
- increases media working temperature

Specifications (English units)

Stock Number	Pipe Size (inch)	Orifice Size (inch)	Cv Flow Factor	Max Shell Pressure (PSI) *	Cycle Time /90° (seconds)	Pilot Air Port (NPT)	Air Volume/ 90° (cubic inches)
Valve with Spring Return Actuator							
535208	1	1.00	60.0	275	1	1/4	12.2
535212	1-1/2	1.50	125.0	275	1	1/4	24.4
535216	2	2.00	240.0	275	1	1/4	24.4
535224	3	3.15	580.0	275	3	1/4	54.9
535232	4	4.00	1020.0	275	3	1/4	97.6
Valve with Double Acting Actuator							
535108	1	1.00	60.0	275	1	1/4	12.2
535112	1-1/2	1.50	125.0	275	1	1/4	12.2
535116	2	2.00	240.0	275	1	1/4	24.4
535124	3	3.15	580.0	275	3	1/4	54.9
535132	4	4.00	1020.0	275	3	1/4	54.8

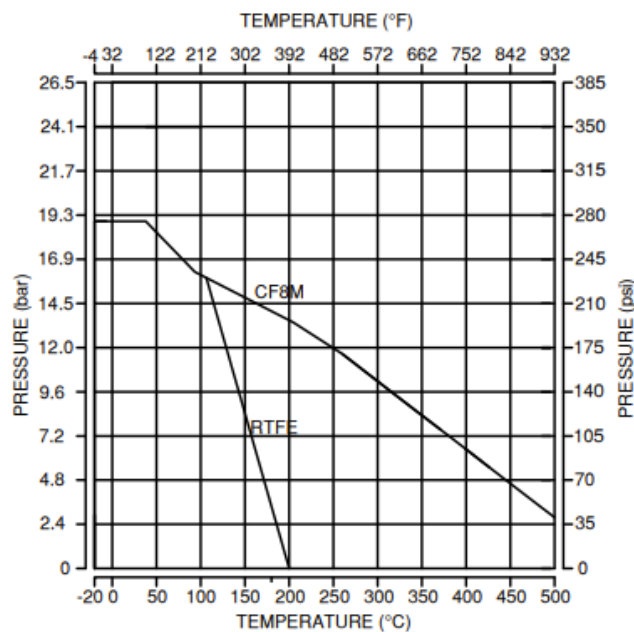
Cv = The GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

* Pressure @ 0-100° F (reduced pressure at higher temperatures—see P/T chart)

• Torque at 0 PSI and 72°F

Pressure/Temperature Chart

P/T Chart (PSI/°F)					
PSI	275	275	210	125	0
°F	-4	100	248	302	392



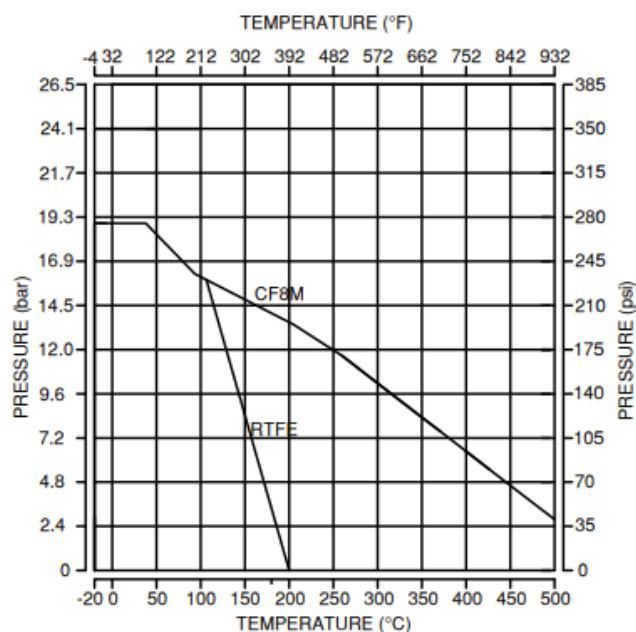
Specifications (Metric units)

Stock Number	Pipe Size (mm)	Orifice Size (mm)	Kv Flow Factor	Max Shell Pressure (Bar)*	Cycle Time/90° (seconds)	Pilot Air Port (NPT)	Air Volume/ 90° (liters)
VALVE WITH SPRING RETURN ACTUATOR							
535208	25.4	25	52.0	19	1	1/4	0.2
535212	38.1	38	108.0	19	1	1/4	0.4
535216	50.8	50	207.0	19	1	1/4	0.4
535224	76.2	80	501.0	19	3	1/4	0.9
535232	101.6	98	882.0	19	3	1/4	1.6
VALVE WITH DOUBLE ACTING ACTUATOR							
535108	25.4	25	52.0	19	1	1/4	0.2
535112	38.1	38	108.0	19	1	1/4	0.2
535116	50.8	50	207.0	19	1	1/4	0.4
535124	76.2	80	501.0	19	3	1/4	0.9
535132	101.6	98	882.0	19	3	1/4	0.9

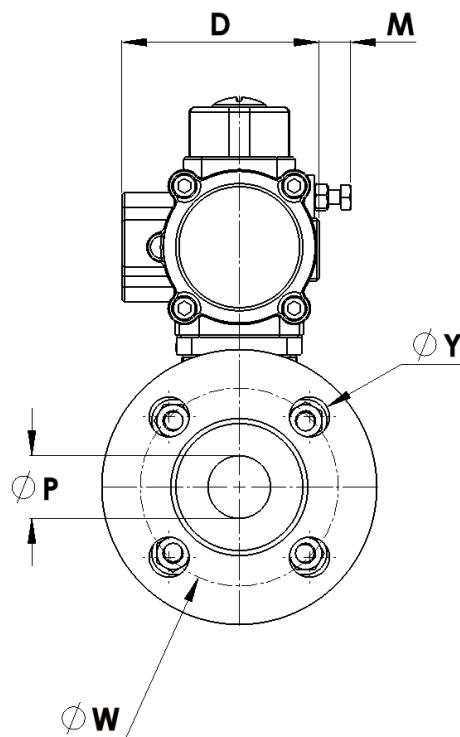
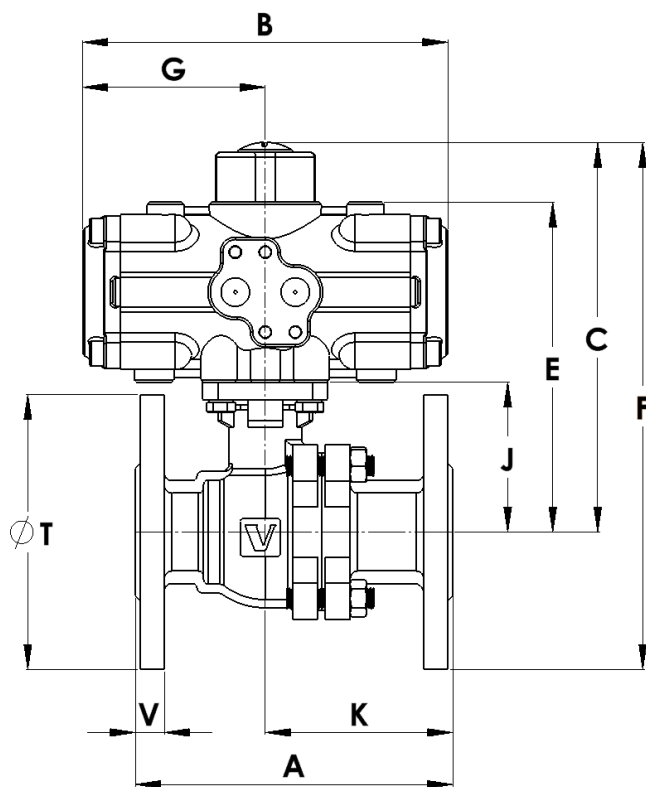
* Pressure range @ -18 to 38° C (reduced pressure at higher temperatures—see P/T chart)

Pressure/Temperature Chart

P/T Chart (BAR/°C)					
Bar	19	19	14.5	8.4	0
°C	-20	38	120	150	200

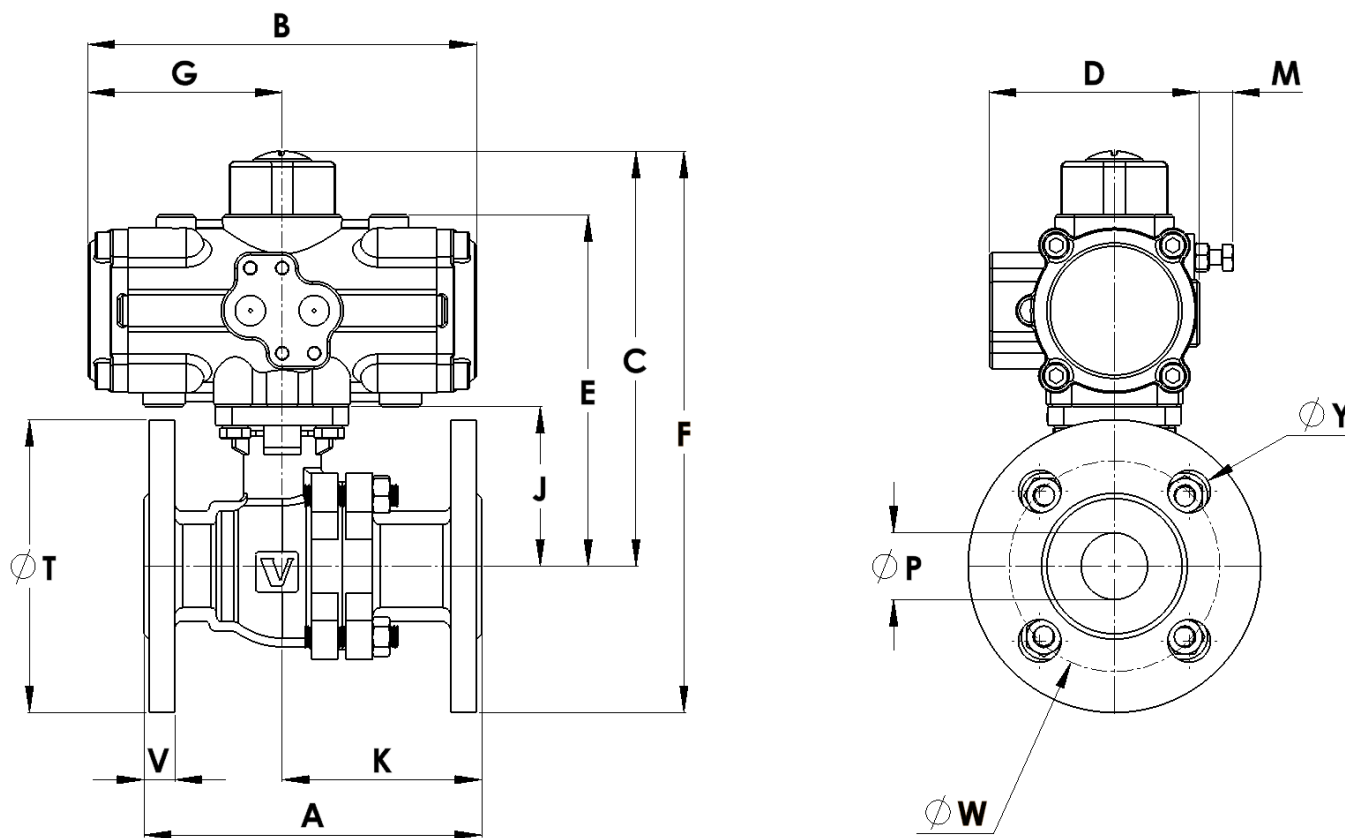


Dimensions: Spring Return



Pipe Size		A	B	C	D	E	F	G	J	K	M	P	T	V	W	Y	A & B Ports (NPT)	Weight
1	inch	5.0	6.8	7.5	3.5	6.5	9.6	3.4	2.4	2.3	0.7	1.0	4.3	0.4	0.3	4) 0.6	1/4	15.2 lbs
	mm	127.0	173.0	190.5	90.0	165.1	243.8	86.5	60.0	58.4	17.8	25.0	110.0	9.6	7.0	4) 16.0	-	6.9 kg
1-1/2	inch	6.5	8.0	8.4	4.5	7.4	10.9	4.0	3.1	2.8	0.8	1.5	4.9	0.5	0.4	4) 0.6	1/4	27.7 lbs
	mm	165.0	204.0	213.4	113.5	187.9	276.9	102.0	78.0	71.1	20.3	38.0	125.0	12.7	9.0	4) 16.0	-	12.6 kg
2	inch	7.0	8.0	8.9	4.5	7.9	11.9	4.0	3.4	3.1	0.8	2.0	5.9	0.6	0.4	4) 0.6	1/4	34.2 lbs
	mm	178.0	204.0	226.1	113.5	200.7	302.3	102.0	87.0	78.7	20.3	50.0	150.0	14.3	10.0	4) 16.0	-	15.5 kg
3	inch	8.0	10.6	10.6	5.0	9.7	14.4	5.3	4.6	4.5	0.8	3.0	7.5	0.7	0.5	4) 0.8	1/4	63.8 lbs
	mm	203.0	269.2	269.2	127.0	246.4	365.8	134.6	116.0	114.3	20.3	76.0	190.0	17.5	12.0	4) 19.0	-	28.9 kg
4	inch	9.0	11.9	12.4	5.7	11.4	17.0	5.9	5.5	4.8	1.1	3.9	9.1	0.9	0.5	8) 0.8	1/4	100.0 lbs
	mm	229.0	301.8	314.9	146.0	289.6	431.8	149.3	140.0	124.5	27.9	100.0	230.0	22.3	12.0	8) 19.0	-	45.4 kg

Dimensions: Double Acting



Pipe Size		A	B	C	D	E	F	G	J	K	M	P	T	V	W	Y	A & B Ports (NPT)	Weight
1	inch	5.0	6.8	6.4	3.5	5.4	8.9	3.4	2.4	2.3	0.6	1.0	4.3	0.4	0.3	0.3	1/4	15.2 lbs
	mm	127.0	173.0	162.6	90.0	137.2	226.1	86.5	60.0	58.4	15.2	25.0	110.0	9.6	7.0	7.0	-	6.9 kg
1-1/2	inch	6.5	6.8	7.7	3.5	6.7	10.2	3.4	3.1	2.8	0.7	1.5	4.9	0.5	0.4	0.4	1/4	27.7 lbs
	mm	165.0	173.0	195.6	90.0	170.2	259.1	86.5	78.0	71.1	17.8	38.0	125.0	12.7	9.0	9.0	-	12.6 kg
2	inch	7.0	8.0	8.9	4.5	7.9	11.9	4.0	3.4	3.1	0.8	2.0	5.9	0.6	0.4	0.4	1/4	34.2 lbs
	mm	178.0	204.0	226.1	113.5	200.7	302.3	102.0	87.0	78.7	20.3	50.0	150.0	14.3	10.0	10.0	-	15.5 kg
3	inch	8.0	10.6	10.6	5.0	9.7	14.4	5.3	4.6	4.5	0.8	3.0	7.5	0.7	0.5	0.5	1/4	63.8 lbs
	mm	203.0	269.2	269.2	127.0	246.4	365.8	134.6	116.0	114.3	20.3	76.0	190.0	17.5	12.0	12.0	-	28.9 kg
4	inch	9.0	10.6	11.4	5.0	10.5	16.0	5.3	5.5	4.8	0.8	3.9	9.1	0.9	0.5	0.5	1/4	100.0 lbs
	mm	229.0	269.2	289.6	127.0	266.7	406.4	134.6	140.0	124.5	20.3	100.0	230.0	22.3	12.0	12.0	-	45.4 kg