

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
- Quarter turn rack and pinion design
- Electro-polished exterior surfaces
- Spring Return or Double Acting Actuators
- 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

Applications

Air actuated stainless steel high pressure ball valves with braided graphite/ viton seals are typically used for on-off control of water, air, oil, and other media compatible with the materials of construction. All-stainless construction for superior corrosion resistance. 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 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.

Construction

Valve Body	316 Stainless Steel ASTM A351 CF8M
Ball/Stem	316 Stainless Steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	Braided Graphite
Anti-Static Device	Ball to Stem (1/4" - 2")
Actuator Seals	NBR (Buna-N)
Actuator Body	ASTM 316 Stainless Steel
Position Indicator	Plastic
Fasteners	ASTM 304 Stainless Steel



Description

Heavy duty stainless steel quarter turn rack & pinion 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.

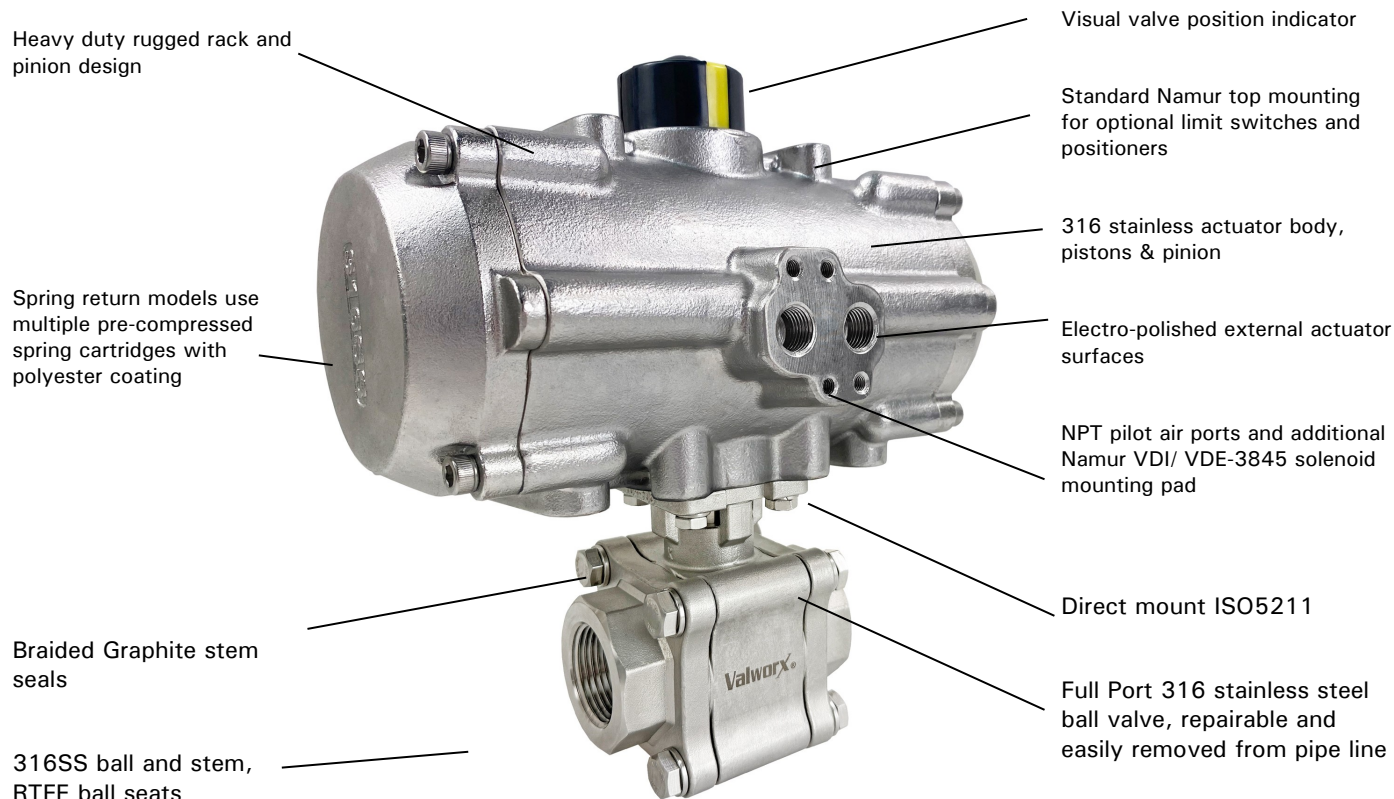
Approvals– Actuators

- CE– MD 2006/42/CE
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting

Standard- 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

Features



Pressure Rating

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

*See P/T Chart

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

Temperature Rating

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

*See P/T Chart

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 (NPT)	Orifice Size (inch)	Cv Flow Factor	Max Pressure (PSI)*	Cycle Time/90° (seconds) Open/Close	Pilot Air Port (NPT)	Air Volume/ 90° (cubic inches)
HIGH PRESSURE STAINLESS BALL VALVE WITH SPRING RETURN ACTUATOR							
542602	1/4	0.45	14.2	2000	1	1/4	12.2
542603	3/8	0.49	16.7	2000	1	1/4	12.2
542604	1/2	0.59	24.1	2000	1	1/4	12.2
542606	3/4	0.79	44.6	2000	1	1/4	12.2
542608	1	1.00	72.7	2000	2/1	1/4	12.2
542610	1-1/4	1.25	122.0	2000	3/1	1/4	12.2
542612	1-1/2	1.50	176.3	2000	3/1	1/4	24.4
542616	2	2.00	313.1	2000	3/1	1/4	24.4
HIGH PRESSURE STAINLESS BALL VALVE WITH DOUBLE ACTING ACTUATOR							
542502	1/4	0.45	14.2	2000	1	1/4	12.2
542503	3/8	0.49	16.7	2000	1	1/4	12.2
542504	1/2	0.59	24.1	2000	1	1/4	12.2
542506	3/4	0.79	44.6	2000	1	1/4	12.2
542508	1	1.00	72.7	2000	1	1/4	12.2
542510	1-1/4	1.25	122.0	2000	1	1/4	12.2
542512	1-1/2	1.50	176.3	2000	1	1/4	24.4
542516	2	2.00	313.1	2000	1	1/4	24.4

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

*Maximum Pressure @ -4° to 392°F (reduced pressure at higher temperatures—see P/T chart)

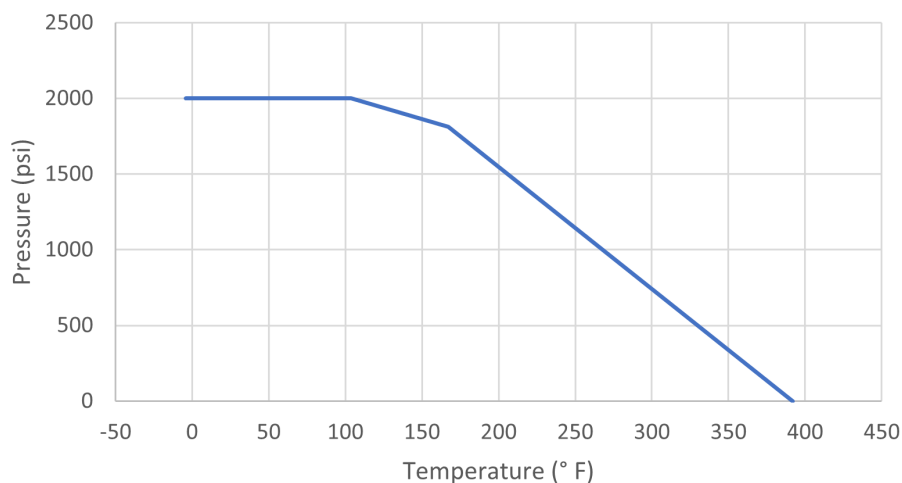
• Torque at 0 PSI and 75°F

Pressure/Temperature Chart (PSI/°F)

Pressure/Temp. Chart - 2000 PSI (138 Bar)

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

PTFE Pressure vs Temperature- Standard Units



Specifications (Metric units)

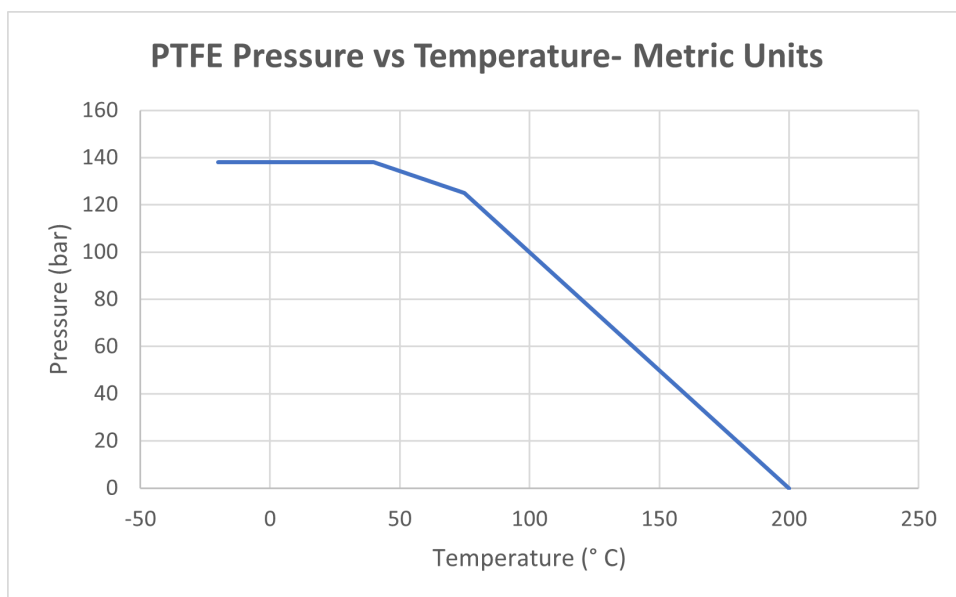
Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Max Pressure (Bar)*	Cycle Time/90° (seconds) Open/Close	Pilot Air Port (NPT)	Air Volume/ 90° (liters)
HIGH PRESSURE STAINLESS BALL VALVE WITH SPRING RETURN ACTUATOR							
542602	1/4	11.5	12.3	138	1	1/4	0.2
542603	3/8	12.5	14.4	138	1	1/4	0.2
542604	1/2	15.0	20.8	138	1	1/4	0.2
542606	3/4	20.0	38.6	138	1	1/4	0.2
542608	1	25.0	62.9	138	2/1	1/4	0.2
542610	1-1/4	32.0	105.5	138	3/1	1/4	0.2
542612	1-1/2	38.0	152.5	138	3/1	1/4	0.4
542616	2	50.0	270.8	138	3/1	1/4	0.4
HIGH PRESSURE STAINLESS BALL VALVE WITH DOUBLE ACTING ACTUATOR							
542502	1/4	11.5	12.3	138	1	1/4	0.2
542503	3/8	12.5	14.4	138	1	1/4	0.2
542504	1/2	15.0	20.8	138	1	1/4	0.2
542506	3/4	20.0	38.6	138	1	1/4	0.2
542508	1	25.0	62.9	138	1	1/4	0.2
542510	1-1/4	32.0	105.5	138	1	1/4	0.2
542512	1-1/2	38.0	152.5	138	1	1/4	0.2
542516	2	50.0	270.8	138	1	1/4	0.4

* Maximum Shell Pressure range @ -20° to 150° C (reduced pressure for higher temperatures—see P/T chart)

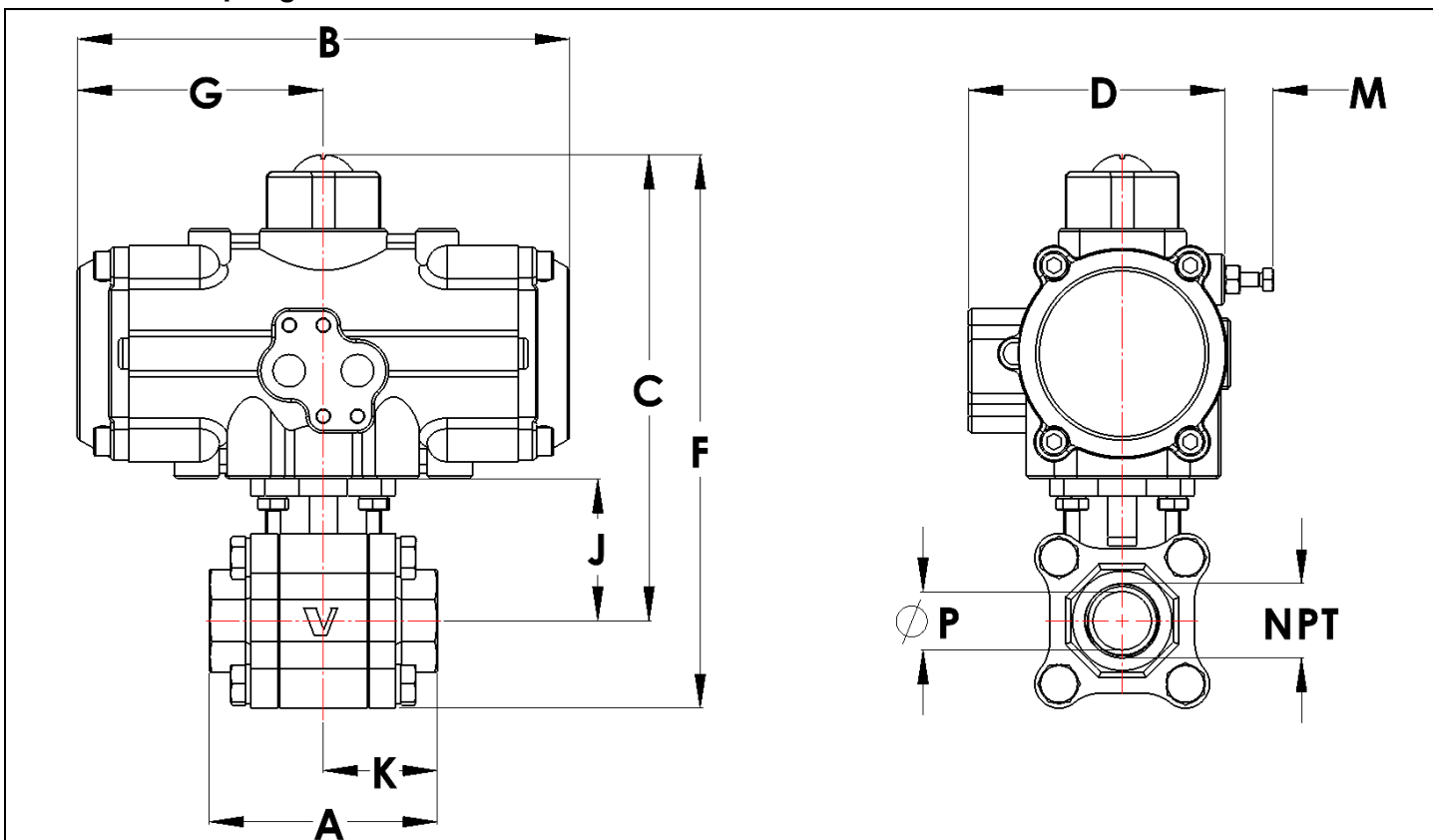
Pressure/Temperature Chart (Bar/°C)

Pressure/Temp. Chart - 2000 PSI (138 Bar)

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

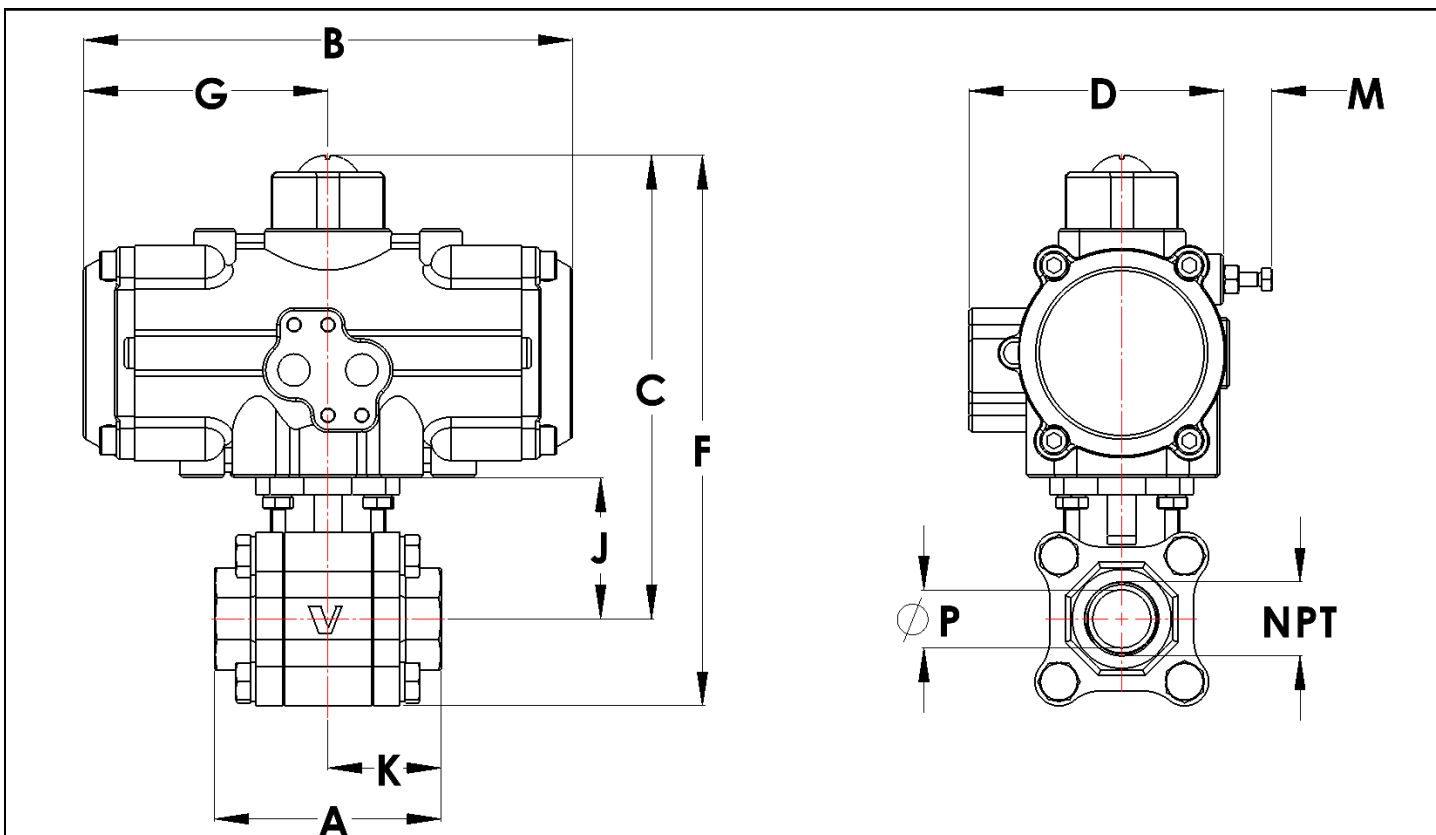


Dimensions: Spring Return



Pipe Size (NPT)		A	B	C	D	F	G	J	K	M	P	Ports (NPT)	Weight lbs (kg)
1/4	inch	2.6	6.8	6.5	3.5	7.8	3.4	1.5	1.3	0.7	0.5	1/4	10.7 lb
	mm	65.0	172.7	165.1	88.9	198.1	86.4	37.5	32.5	17.8	11.5		4.9 kg
3/8	inch	2.6	6.8	6.5	3.5	7.8	3.4	1.5	1.3	0.7	0.5	1/4	10.7 lb
	mm	65.0	172.7	165.1	88.9	198.1	86.4	37.5	32.5	17.8	12.5		4.9 kg
1/2	inch	3.0	8.0	7.3	4.5	8.6	4.0	1.5	1.5	0.7	0.6	1/4	17.1 lb
	mm	75.0	203.2	185.4	114.3	218.4	101.6	37.5	37.5	17.8	15.0		7.8 kg
3/4	inch	3.1	8.0	7.8	4.5	9.0	4.0	2.0	1.6	0.7	0.8	1/4	17.8 lb
	mm	80.0	203.2	198.1	114.3	228.6	101.6	50.0	40.0	17.8	20.0		8.1 kg
1	inch	3.5	10.6	9.1	5.0	10.4	5.3	2.4	1.8	0.8	1.0	1/4	18.7 lb
	mm	90.0	269.2	231.1	127.0	264.2	134.6	60.0	45.0	20.3	25.0		8.5 kg
1-1/4	inch	4.3	10.6	9.7	5.0	11.2	5.3	3.0	2.2	0.8	1.3	1/4	31.0 lb
	mm	110.0	269.2	246.4	127.0	284.5	134.6	75.3	55.0	20.3	32.0		14.1 kg
1-1/2	inch	4.7	11.9	10.7	5.7	12.6	5.9	3.1	2.4	1.1	1.5	1/4	46.4 lb
	mm	120.0	302.3	271.8	144.8	320.0	149.9	79.3	60.0	27.9	38.0		21.1 kg
2	inch	5.5	11.9	11.4	5.7	13.7	5.9	3.8	2.8	1.1	2.0	1/4	52.0 lb
	mm	140.0	302.3	289.6	144.8	348.0	149.9	96.0	70.0	27.9	50.0		23.6 kg

Dimensions: Double Acting



Pipe Size (NPT)		A	B	C	D	F	G	J	K	M	P	Ports (NPT)	Weight lbs (kg)
1/4	inch	2.6	5.7	5.8	3.0	7.1	2.9	1.5	1.3	0.6	0.5	1/4	7.3 lb
	mm	65.0	144.8	147.3	76.2	180.3	73.7	37.5	32.5	15.2	11.5		3.3 kg
3/8	inch	2.6	5.7	5.8	3.0	7.1	2.9	1.5	1.3	0.6	0.5	1/4	7.4 lb
	mm	65.0	144.8	147.3	76.2	180.3	73.7	37.5	32.5	15.2	12.5		3.4 kg
1/2	inch	3.0	5.7	5.8	3.0	7.1	2.9	1.5	1.5	0.6	0.6	1/4	7.4 lb
	mm	75.0	144.8	147.3	76.2	180.3	73.7	37.5	37.5	15.2	15.0		3.4 kg
3/4	inch	3.1	6.8	7.0	3.5	8.2	3.4	2.0	1.6	0.7	0.8	1/4	11.4 lb
	mm	80.0	172.7	177.8	88.9	208.3	86.4	50.0	40.0	17.8	20.0		5.2 kg
1	inch	3.5	8.0	8.2	4.5	9.5	4.0	2.4	1.8	0.7	1.0	1/4	17.9 lb
	mm	90.0	203.2	208.3	114.3	241.3	101.6	60.0	45.0	17.8	25.0		8.1 kg
1-1/4	inch	4.3	8.0	8.8	4.5	10.3	4.0	3.0	2.2	0.7	1.3	1/4	20.3 lb
	mm	110.0	203.2	223.5	114.3	261.6	101.6	75.3	55.0	17.8	32.0		9.2 kg
1-1/2	inch	4.7	10.6	9.8	5.0	11.7	5.3	3.1	2.4	1.1	1.5	1/4	32.9 lb
	mm	120.0	269.2	248.9	127.0	297.2	134.6	79.3	60.0	27.9	38.0		14.9 kg
2	inch	5.5	10.6	11.4	5.0	13.7	5.3	3.8	2.8	1.1	2.0	1/4	38.5 lb
	mm	140.0	269.2	289.6	127.0	348.0	134.6	96.0	70.0	27.9	50.0		17.5 kg