

Features

- Full Port lead free brass diverter or selector valve
- Energized PTFE ball seats for lower torque and longer life
- Leak free triple PTFE/FKM stem seal packing
- Actuator CSA listed per UL429 and CSA C22.2
- Valve certified NSF372 & NSF/ANSI/CAN 61-2020 for potable/drinking water
- EPS- Electronic Positioning System with 4-20mA input
- Visual valve position indicator
- Rugged aluminum Type 4X weatherproof enclosure
- Heavy duty motors with overload protection
- Anti-condensation heater, thermostatically controlled
- Manual override with end of travel mechanical stops
- Actuator CSA listed per UL429 and CSA C22.2

Applications

Electric operated flow diverter valve controls water, air, oil and other media compatible with the materials of construction. Ideal where lead free and NSF approved construction are required for potable drinking water as well as general industrial applications. Suitable for steam service up to 25 PSI with optional high temperature mounting kit and vacuum service up to 29"Hg. Actuator designed for 70% duty cycle.

Flow pattern is highly-non-linear. Refer to page 3 for flow vs position.

Operation

Electric actuated valves with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator (valve disc). Flow is adjustable anywhere between 0-100%. Unique electronic positioning module is fully potted to help protect the electronics from vibration/moisture resistance.

Construction

| | |
|--|---|
| Valve Body | Lead free brass C69300 |
| Ball/Stem | 316 stainless steel |
| Ball Seats | (4) PTFE (Teflon) energized with FKM (Viton) |
| Stem Seals | PTFE (Teflon) with (2) additional FKM (Viton) seals |
| Gear Drive | Heavy duty alloy steel and aluminium bronze worm |
| Actuator Enclosure | Aluminum polyester powder coated, Type 4X, IP67 |
| Visual Valve Position Indicator | Clear polycarbonate cover, red/yellow open-closed |
| Fasteners | Stainless Steel |
| Auxiliary Limit Switches | 2 x SPST 3A@125VAC resistive, on-off actuators only |



Description

Electrically operated Full Port 3-way L-type flow pattern ball valve has four energized PTFE ball seats, allowing for full pressure at any port. Triple PTFE/FKM leak free stem seal design. Rugged corrosion resistant electric actuator includes a manual override, 4-20mA servo controller, thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals

Actuators

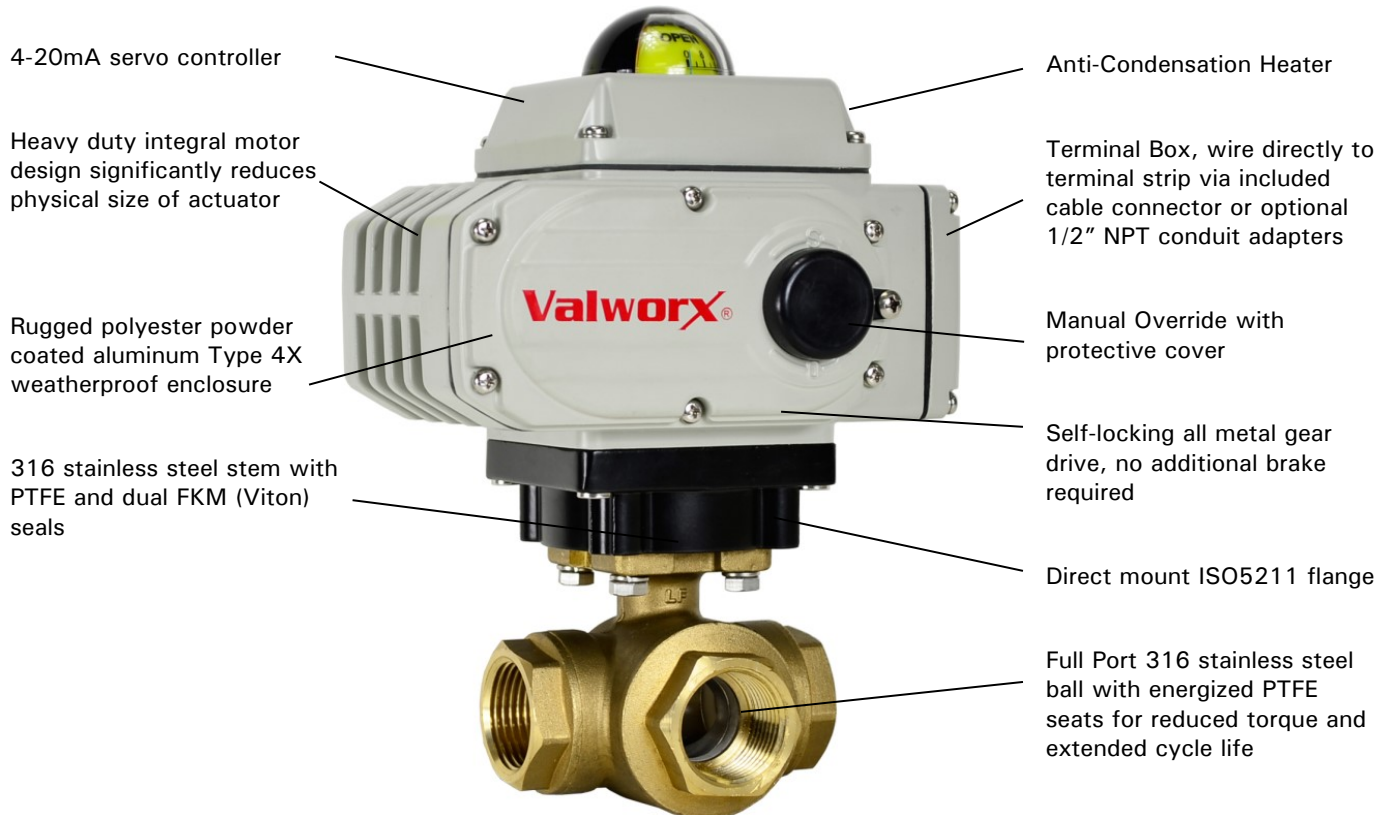
- CSA listed:
 - UL429 and CSA C22.2 no.139
 - Type 4X, IP67 weatherproof enclosure
- CE conformance- EN 60204-1:2006
 - ISO5211 Mounting

Valves

- IAPMO RT certified to:
 - NSF/ANSI 372 - 2020 Drinking Water
 - NSF/ANSI 61 - 2020
- Meets design MSS-SP-110



Construction Features



Pressure-Temperature*

Pressure Rating: 400 PSI CWP (27 Bar) non-shock
25 PSI saturated steam with high temp kit, 29" Hg vacuum,

Ball Valve Temperature Rating: -4 to 366° F (-20 to 186° C)

Actuator Temperature Rating: -13 to 131° F (-25 to 55° C)

*See P/T chart



Visual Valve
Position Indicator

Pressure/Temperature Chart (PSI/°F)

| P/T Chart | | | | | | |
|-----------|-----|-----|-----|-----|-----|-----|
| PSI | 400 | 400 | 400 | 400 | 375 | 275 |
| °F | 0 | 50 | 100 | 176 | 200 | 266 |

Pressure/Temperature Chart (Bar/°C)

| P/T Chart | | | | | | |
|-----------|-----|----|----|----|----|-----|
| Bar | 27 | 27 | 27 | 27 | 26 | 19 |
| °C | -18 | 10 | 38 | 80 | 93 | 130 |

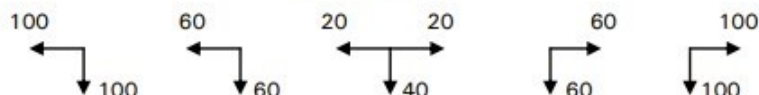
Flow Path Features

L-Port Diverter

Position 1 (0°) Position 2 (90°)



Orifice Size %



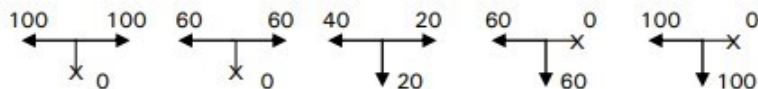
| | | | | | |
|------------------|-----|-------|------|-------|------|
| Manual Operation | 0° | 22.5° | 45° | 67.5° | 90° |
| 4-20 mA Input | 4mA | 8mA | 12mA | 16mA | 20mA |
| 0-10 volt Input | 0V | 2.5V | 5V | 7.5V | 10V |

T-Port Diverter

Position 1 (0°) Position 2 (90°)



Orifice Size %



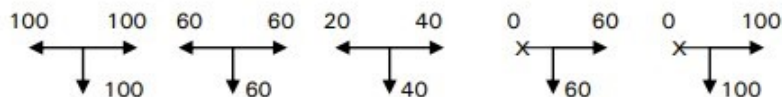
| | | | | | |
|------------------|-----|-------|------|-------|------|
| Manual Operation | 0° | 22.5° | 45° | 67.5° | 90° |
| 4-20 mA Input | 4mA | 8mA | 12mA | 16mA | 20mA |
| 0-10 volt Input | 0V | 2.5V | 5V | 7.5V | 10V |

T-Port Mixing

Position 1 (0°) Position 2 (90°)



Orifice Size %



| | | | | | |
|------------------|-----|-------|------|-------|------|
| Manual Operation | 0° | 22.5° | 45° | 67.5° | 90° |
| 4-20 mA Input | 4mA | 8mA | 12mA | 16mA | 20mA |
| 0-10 volt Input | 0V | 2.5V | 5V | 7.5V | 10V |

Note: A) Orifice Size % is the approximate orifice size of each port shown as a percent of full open. B) Examples shown are 3-way quarter turn (90°) ball valves with full port design. Actuator at 0° is considered position 1 and 90° position 2.

Specifications (English units)

| Stock Number | Pipe Size (NPT) | Orifice Size (inch) | Cv Flow Factor | Pressure Max.(PSI)* | Cycle Time/90° (seconds) | Voltage | Current (amps) | Duty Cycle | Electrical Dwg. |
|--|-----------------|---------------------|----------------|---------------------|--------------------------|------------------|----------------|------------|-----------------|
| 120 VAC ELECTRIC ACTUATED 3-WAY LF L-PORT BRASS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 562102 | 1/4 | 0.4 | 3.2 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562103 | 3/8 | 0.4 | 3.5 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562104 | 1/2 | 0.6 | 4.5 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562106 | 3/4 | 0.8 | 10.0 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562108 | 1 | 1.0 | 16.0 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562110 | 1-1/4 | 1.2 | 31.0 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562112 | 1-1/2 | 1.5 | 49.0 | 400 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562116A | 2 | 2.0 | 82.0 | 400 | 30/25 | 110 VAC, 50/60Hz | 0.64 | 70% | E |
| 24 VDC ELECTRIC ACTUATED 3-WAY LF L-PORT BRASS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 562202 | 1/4 | 0.4 | 3.2 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562203 | 3/8 | 0.4 | 3.5 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562204 | 1/2 | 0.6 | 4.5 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562206 | 3/4 | 0.8 | 10.0 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562208 | 1 | 1.0 | 16.0 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562210 | 1-1/4 | 1.2 | 31.0 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562212 | 1-1/2 | 1.5 | 49.0 | 400 | 20 | DC24 | 1.28 | 70% | GEY |
| 562216A | 2 | 2.0 | 82.0 | 400 | 30 | DC24 | 2.03 | 70% | GEY |

* Pressure at 176° F (reduce pressure for higher temperatures, see P/T chart)

Electric Actuated 3-Way L-port Valves

Valworx electric actuators with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by a 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator (valve).

This is achieved with a unique built in electronic positioning module. The module is fully potted to help protect the electronics from vibration and moisture resistance.

An internal microprocessor on the EPS circuit board continuously monitors the analog input and output signals and compares them to the physical position via a precision potentiometer feedback system, moving the actuator as required to balance the signals.

The EPS system is self-calibrating which virtually eliminates "hunting". The following functions are standard:

- Position monitoring output signal in same format as input. Ex: 4-20mA input, 4-20mA output
- Adjustable forward or reversing action.
- Deadband adjustment
- Selectable fail mode: fail closed, fail open or stop in place (for loss of input command signal).
- Electric manual control with onboard switches
- Fault LED lights indicate valve jam or signal loss
- Electronic brake function
- Refer to page 3 for signal vs flow characteristics

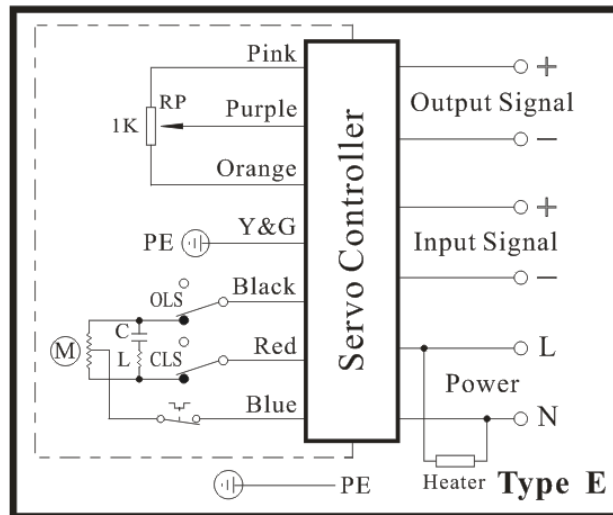
Specifications (Metric units)

| Stock Number | Pipe Size (NPT) | Orifice Size (mm) | Kv Flow Factor | Pressure Max.(Bar)* | Cycle Time/90° (seconds) | Voltage | Current (amps) | Duty Cycle | Electrical Dwg. |
|--|-----------------|-------------------|----------------|---------------------|--------------------------|------------------|----------------|------------|-----------------|
| 120 VAC ELECTRIC ACTUATED 3-WAY LF L-PORT BRASS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 562102 | 1/4 | 10.0 | 2.8 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562103 | 3/8 | 10.0 | 3.0 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562104 | 1/2 | 15.0 | 3.9 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562106 | 3/4 | 19.0 | 8.6 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562108 | 1 | 25.0 | 14.0 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562110 | 1-1/4 | 31.0 | 27.0 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562112 | 1-1/2 | 38.0 | 42.0 | 27 | 20/17 | 110 VAC, 50/60Hz | 0.27 | 70% | E |
| 562116A | 2 | 50.0 | 70.0 | 27 | 30/25 | 110 VAC, 50/60Hz | 0.64 | 70% | E |
| 24 VDC ELECTRIC ACTUATED 3-WAY LF L-PORT BRASS BALL VALVE with EPS POSITIONER 4-20mA input | | | | | | | | | |
| 562202 | 1/4 | 10.0 | 2.8 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562203 | 3/8 | 10.0 | 3.0 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562204 | 1/2 | 15.0 | 3.9 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562206 | 3/4 | 19.0 | 8.6 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562208 | 1 | 25.0 | 14.0 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562210 | 1-1/4 | 31.0 | 27.0 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562212 | 1-1/2 | 38.0 | 42.0 | 27 | 20 | DC24 | 1.28 | 70% | GEY |
| 562216A | 2 | 50.0 | 70.0 | 27 | 30 | DC24 | 2.03 | 70% | GEY |

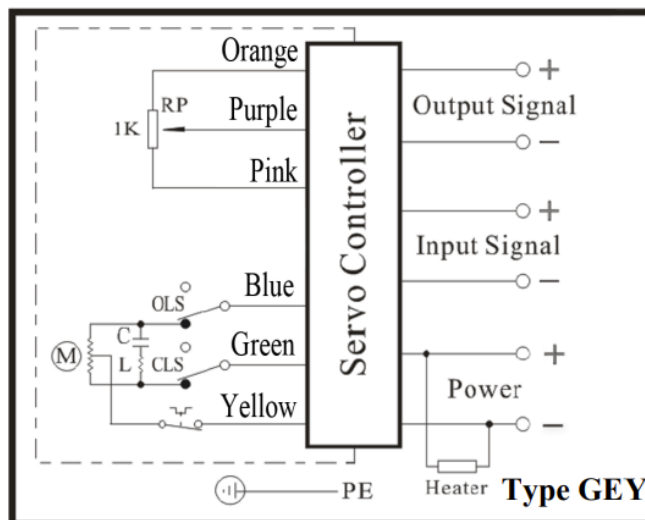
* Pressure at 80° C (reduce pressure for higher temperatures, see P/T chart)

Electrical Wiring Diagram

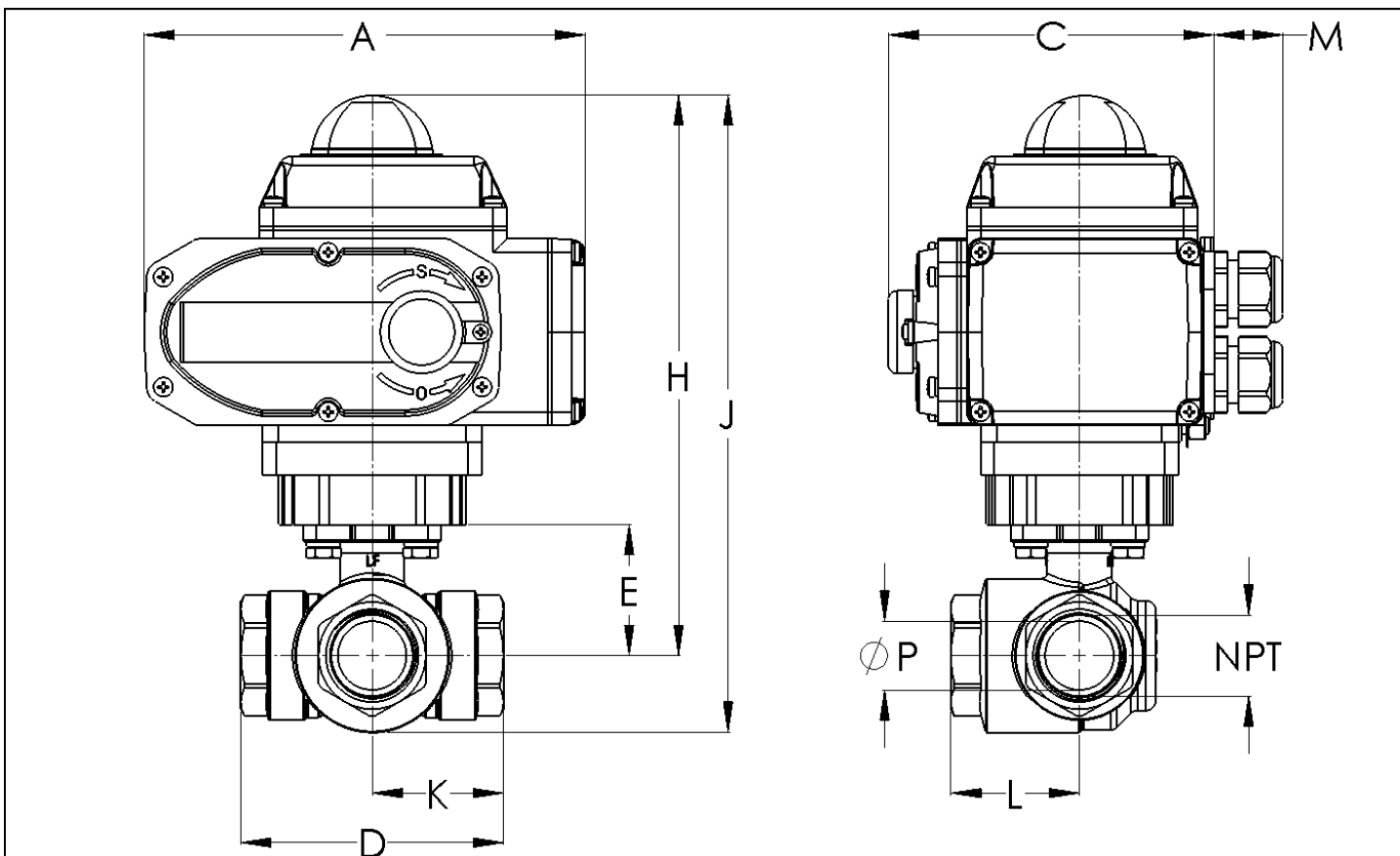
AC Voltages



DC Voltages



Dimensions:



| Pipe Size (NPT) | | A | C | D | E | H | J | K | L | M | P | Weight |
|-----------------|------|-------|-------|-------|------|-------|-------|------|------|------|------|---------|
| 1/4 | inch | 6.4 | 4.7 | 2.2 | 1.0 | 7.2 | 8.3 | 1.1 | 1.1 | 1.0 | 0.4 | 6.5 lb |
| | mm | 162.0 | 118.5 | 55.6 | 26.5 | 183.5 | 212.0 | 27.8 | 27.5 | 25.0 | 10.0 | 2.9 kg |
| 3/8 | inch | 6.4 | 4.7 | 2.2 | 1.0 | 7.2 | 8.3 | 1.1 | 1.1 | 1.0 | 0.4 | 6.7 lb |
| | mm | 162.0 | 118.5 | 55.6 | 26.5 | 183.5 | 212.0 | 27.8 | 27.5 | 25.0 | 10.0 | 3.1 kg |
| 1/2 | inch | 6.4 | 4.7 | 2.9 | 1.3 | 7.5 | 8.6 | 1.4 | 1.4 | 1.0 | 0.6 | 7.3 lb |
| | mm | 162.0 | 118.5 | 73.0 | 33.5 | 190.5 | 219.0 | 36.5 | 36.5 | 25.0 | 15.0 | 3.3 kg |
| 3/4 | inch | 6.4 | 4.7 | 3.3 | 1.7 | 7.9 | 9.4 | 1.6 | 1.6 | 1.0 | 0.8 | 8.1 lb |
| | mm | 162.0 | 118.5 | 83.0 | 43.0 | 200.0 | 239.0 | 41.5 | 41.5 | 25.0 | 19.0 | 3.7 kg |
| 1 | inch | 6.4 | 4.7 | 3.8 | 1.9 | 8.1 | 9.6 | 1.9 | 1.8 | 1.0 | 1.0 | 8.8 lb |
| | mm | 162.0 | 118.5 | 95.6 | 47.6 | 204.6 | 243.0 | 47.8 | 46.8 | 25.0 | 25.0 | 4.0 kg |
| 1-1/4 | inch | 6.4 | 4.7 | 4.2 | 2.2 | 8.3 | 9.9 | 2.1 | 2.0 | 1.0 | 1.2 | 10.0 lb |
| | mm | 162.0 | 118.5 | 107.0 | 55.0 | 212.0 | 251.0 | 53.5 | 51.0 | 25.0 | 31.0 | 4.5 kg |
| 1-1/2 | inch | 6.4 | 4.7 | 5.0 | 2.6 | 8.8 | 10.4 | 2.9 | 2.4 | 1.0 | 1.5 | 13.0 lb |
| | mm | 162.0 | 118.5 | 126.0 | 65.5 | 222.5 | 263.0 | 63.0 | 60.0 | 25.0 | 38.0 | 5.9 kg |
| 2 | inch | 7.7 | 6.4 | 5.9 | 3.0 | 12.9 | 14.9 | 2.9 | 2.7 | 1.0 | 2.0 | 18.3 lb |
| | mm | 196.5 | 161.5 | 149.0 | 77.0 | 327.7 | 378.5 | 74.5 | 69.0 | 25.0 | 50.0 | 8.4 kg |