# Baumann™ 84000 Sanitary Control Valves

The Baumann 84000 sanitary control valves are designed to satisfy the stringent demands of the pharmaceutical and biotechnology industries. These valves are in compliance with 3A Sanitary Standards Inc. requirements. Incorporating reliable class III diaphragm technology, the 84000 valves can handle temperatures up to 160°C (320°F). The uniquely shaped diaphragm, unlike plug style sanitary valves, results in low shear forces in the flow stream, minimizing possible damage to delicate bio-media or altering the consistency of end product.

W9838

**84000 Inline Sanitary Valve with Baumann 32 Actuator**

W9839

**84000 Angle Sanitary Valve with Baumann 32 Actuator and FIELDVUE DVC2000 Digital Valve Controller**

W9840

**84000 Angle Sanitary Valve with Baumann 54 Actuator and FIELDVUE Digital Valve Controller**

## Features

- Electropolished internal surfaces
- USP 24 Class VI PTFE, EPDM backed diaphragms are marked in accordance with ASME BPE for material identification and traceability.
- Designed for Clean-in-Place (CIP) and Sanitize-in-Place (SIP) service
- Self-draining in preferred mounting mode
- Compact size, see figure 9 and tables 5 to 6
- Stainless steel spring case and yoke available
- Fisher™ FIELDVUE™ digital valve controller available for remote calibration and diagnostics

Figure 1. Baumann 84000 NPS 1 Angle Valve Body Sub-Assembly

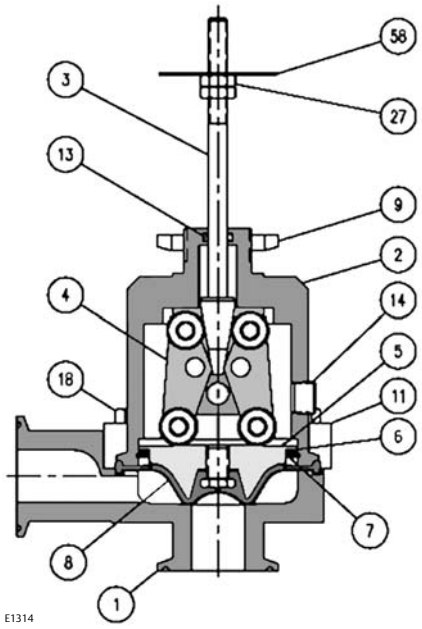



Figure 2. Baumann 84000 NPS 1 Inline Valve Body Sub-Assembly

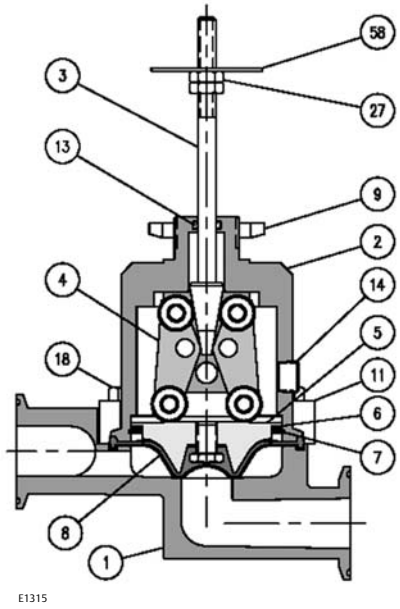



Table 1. Materials of Construction for NPS 1 Angle and Inline Valves

| Key Number | Description | Material |
|---|---|---|
| 1 | Valve Body | ASME SA-479 S31603 stainless steel, annealed |
| 2 | Bonnet | ASME SA-479 S30400 Annealed |
| 3 | Piston Stem Sub-assembly | Stainless Steel |
| 4 | Drive Mechanism Sub-assembly | Multiple (predominantly stainless steel) |
| 5 | Compressor | S30300 or S30400 stainless steel |
| 6 | Wave Spring | S17700 stainless steel |
| 7 | Retaining Ring | S30200 stainless steel |
| 8 | Diaphragm, Closure Member | PTFE (FDA 21 CFR 177.1550 & USP CL VI compliant) face with Aramid fabric reinforced EPDM (FDA 21 CFR 177.2600 & USP CL VI compliant) backing and S30400 stainless steel insert |
| 9 | Drive Nut, Actuator Yoke | S30400 stainless steel |
| 11 | Bonnet Flange | ASTM A240 S30400 stainless steel |
| 13 | O-Ring, Stem | FKM fluorocarbon |
| 14 | Tell Tale Port | S31600 stainless steel |
| 18 | Hex Head Cap Screw | Grade B8, Class 1 |
| 27 | Locknuts | S30400 stainless steel |
| 58 | Travel Indicator | S30400 stainless steel |

Figure 3. Baumann 84000 NPS 1-1/2 and 2 Angle Valve Body Sub-Assembly

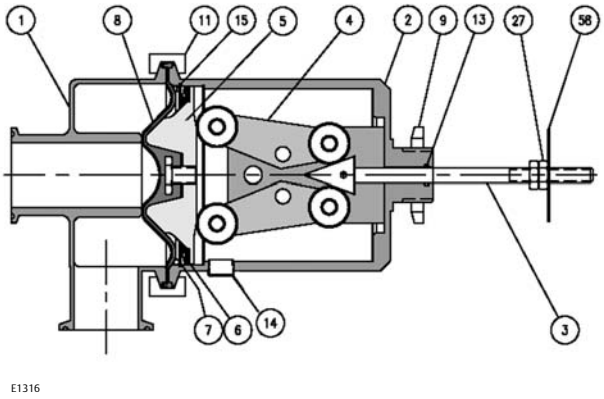



Figure 4. Baumann 84000 Linkage Mechanism

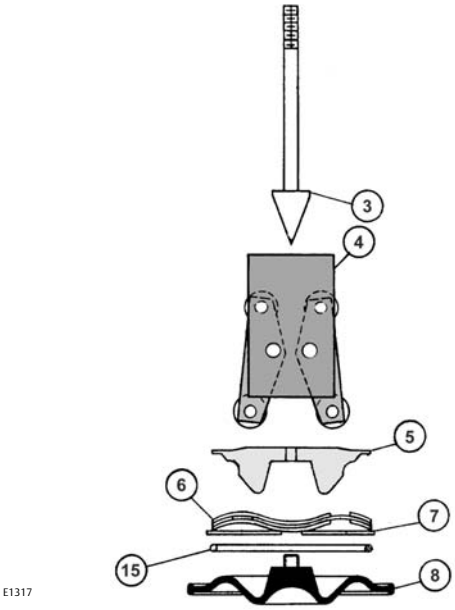



Table 2. Materials of Construction for NPS 1-1/2 and 2 Angle Valves

| Key Number | Description | Material |
|---|---|---|
| 1 | Valve Body | ASME SA-479 S31603 stainless steel, annealed |
| 2 | Bonnet | ASME SA-479 S30400 Annealed |
| 3 | Piston Stem Sub-assembly | Stainless Steel |
| 4 | Drive Mechanism Sub-assembly | Multiple (predominantly stainless steel) |
| 5 | Compressor | S30300 or S30400 stainless steel |
| 6 | Wave Spring | S17700 stainless steel |
| 7 | Retaining Ring | S30200 stainless steel |
| 8 | Diaphragm, Closure Member | PTFE face with Aramid fabric reinforced EPDM backing and S30400 stainless steel insert. Diaphragm assembly conforms to FDA 21CFR 177.1550 and USP24 Class VI standards. |
| 9 | Drive Nut, Actuator Yoke | S30400 stainless steel |
| 11 | Clamp | S30400 stainless steel |
| 13 | O-Ring, Stem | FKM fluorocarbon |
| 14 | Tell Tale Port | S31600 stainless steel |
| 15 | O-Ring | EPDM, conforming to FDA 21CFR 177.1550 |
| 27 | Locknuts | S30400 stainless steel |
| 58 | Travel Indicator | S30400 stainless steel |

Table 3. Cv Values at Percent Plug Opening(1)

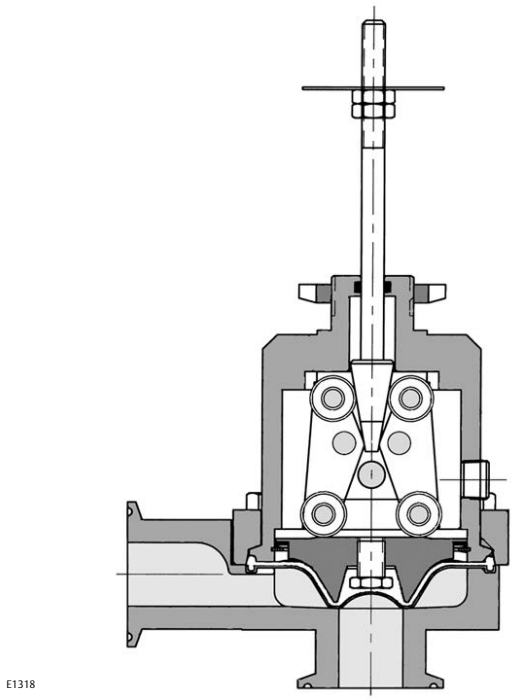
| VALVE SIZE | FLOW DIRECTION(2) | ACTUATOR TRAVEL | Cv VERSUS PERCENT OF ACTUATOR TRAVEL OPEN |
|---|---|---|---|
| NPS | | Inches | 100 |
| 1<br>Angle & Inline | A to B<br>or<br>B to A | 0.50 | 2.00 |
| | | 0.50 | 4.00 |
| | | 0.75 | 8.00 |
| 1-1/2 Angle | A to B | 0.50 | 21.7 |
| | | 0.75 | 29.6 |
| | B to A | 0.50 | 17.1 |
| | | 0.75 | 24.2 |
| 2<br>Angle | A to B | 0.50 | 29.4 |
| | | 0.75 | 42.6 |
| | B to A | 0.50 | 23.5 |
| | | 0.75 | 32.5 |

1. See Fisher Catalog 12 for a full range of flow and sizing information.
2. Flow A to B is recommended for low discharge pressure. Low discharge pressure being defined as near or below atmospheric pressure.

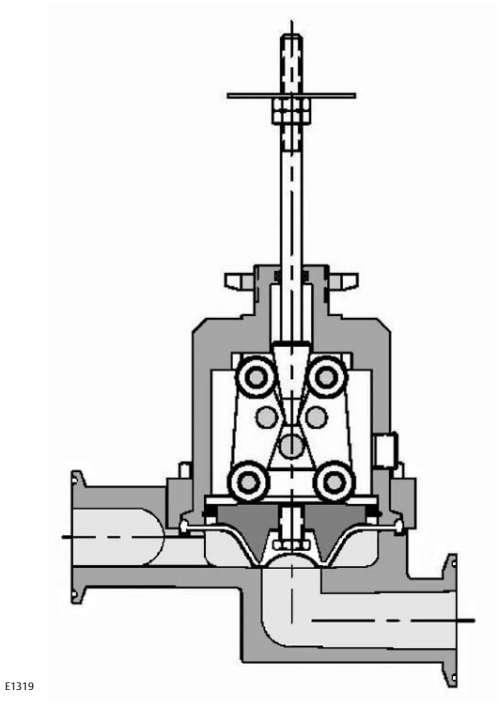
Table 4. Technical Specifications

| VALVE SIZE | | | NPS 1 Angle & Inline | | | NPS 1-1/2 Angle | | NPS 2 Angle | |
|---|---|---|---|---|---|---|---|---|---|
| RATED | Installed with flow from Port A to B | Cv | 2 | 4 | 8 | 22 | 30 | 29 | 43 |
| | | Kv | 1.72 | 3.44 | 6.88 | 18.92 | 25.8 | 24.94 | 36.98 |
| | Installed with flow from Port B to A | Cv | 2 | 4 | 8 | 17 | 24 | 24 | 32 |
| | | Kv | 1.72 | 3.44 | 6.88 | 14.62 | 20.64 | 20.64 | 27.52 |
| TRAVEL | | mm | 12.7 | 12.7 | 19.05 | 12.7 | 19.05 | 12.7 | 19.05 |
| | | inches | 0.50 | 0.50 | 0.75 | 0.50 | 0.75 | 0.50 | 0.75 |
| BONNET | | | Bolted | | | Clamped | | | |
| ACTUATOR TYPE | | | 32 or 54 | | | 54 | | | |
| RANGEABILITY | | | 100:1 | | | | | | |
| CHARACTERISTIC | | | Modified Equal Percentage | | | | | | |
| SEAT LEAKAGE | | | ASME/FCI 70-2, Class VI | | | | | | |
| MAXIMUM OPERATING PRESSURE | | | 10.34 bar (150 Psi) | | | | | | |
| MAXIMUM OPERATING TEMPERATURE | | | 160°C (320°F) | | | | | | |
| INTERNAL BODY FINISH (WETTED INTERIOR) | | | < 30 Ra Microinch / 0.76 Ra Micron (standard)<br>< 20 Ra Microinch / 0.51 Ra Micron (optional - or as required) | | | | | | |
| END CONNECTIONS | | | Sanitary (optional welded ends) | | | | | | |

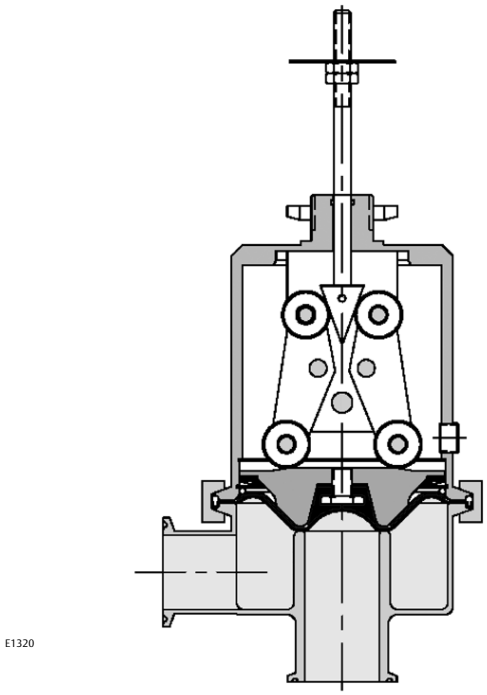
Figure 5. Preferred Flow Directions for Self-Draining



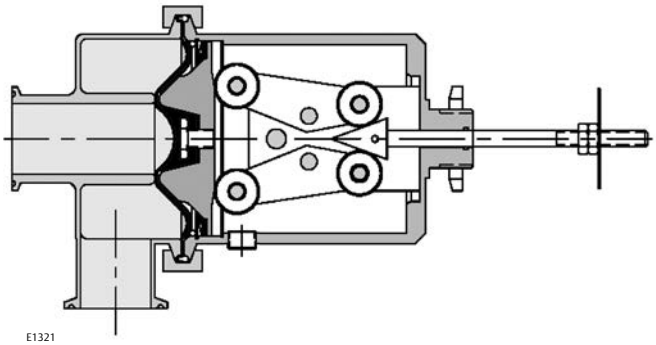

**NPS 1 ANGLE VALVE BODY POSITIONED FOR FORWARD FLOW SELF DRAINING FROM PORT A TO B**




**NPS 1 INLINE VALVE BODY POSITIONED FOR FORWARD FLOW SELF DRAINING FROM PORT A TO B**

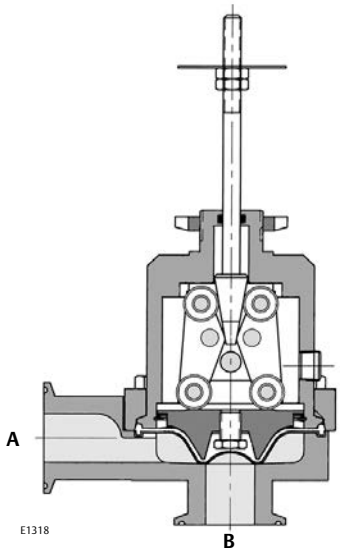



**NPS 1-1/2 AND 2 ANGLE VALVE BODY (RECOMMENDED FOR PROCESSES WHERE ATMOSPHERIC OR SLIGHT VACUUM IS PRESENT DOWNSTREAM OF PORT B) [PORTS A AND B MUST BE DRAINED SEPARATELY]**

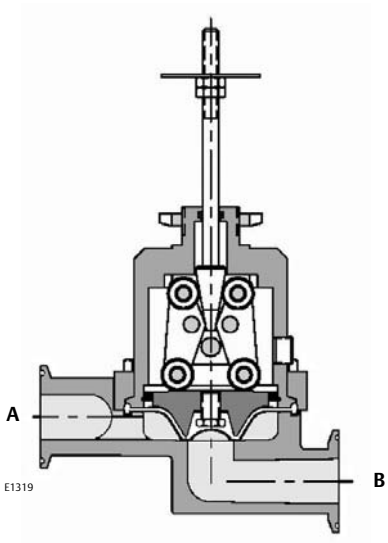



**NPS 1-1/2 AND 2 ANGLE VALVE BODY POSITIONED FOR SELF DRAINING FROM PORT B TO A**

Figure 6. NPS 1 Angle and Inline Valve Body Orientations

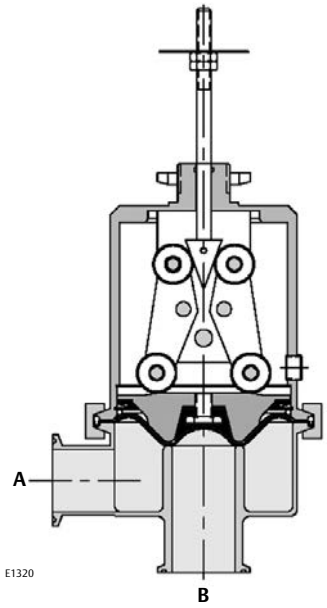



**NPS 1 ANGLE VALVE BODY POSITIONED FOR FORWARD FLOW SELF DRAINING FROM PORT A TO B**




**NPS 1 INLINE VALVE BODY POSITIONED FOR FORWARD FLOW SELF DRAINING FROM PORT A TO B**

Figure 7. NPS 1-1/2 and 2 Angle Valve Body




**RECOMMENDED FOR PROCESSES WHERE ATMOSPHERIC OR SLIGHT VACUUM IS PRESENT DOWNSTREAM OF PORT B. (PORTS A AND B MUST BE DRAINED SEPARATELY)**

Figure 8. NPS 1-1/2 and 2 Angle Valve Body Positioned for Self Draining from Port B to A

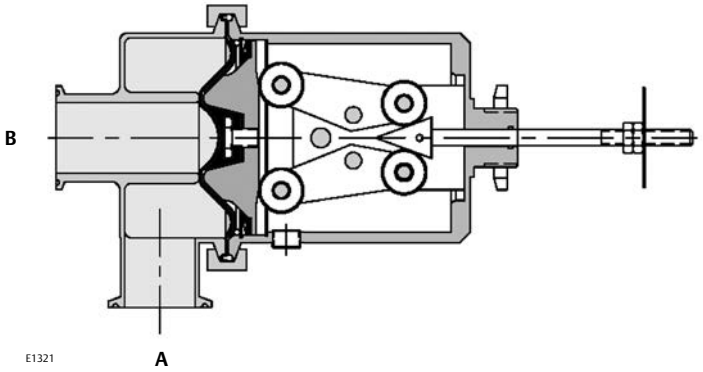
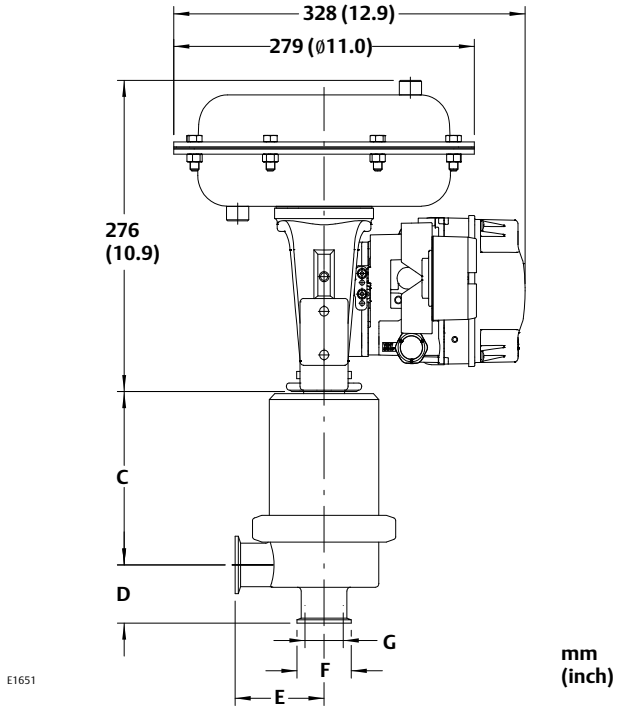



Table 5. Valve Assembly

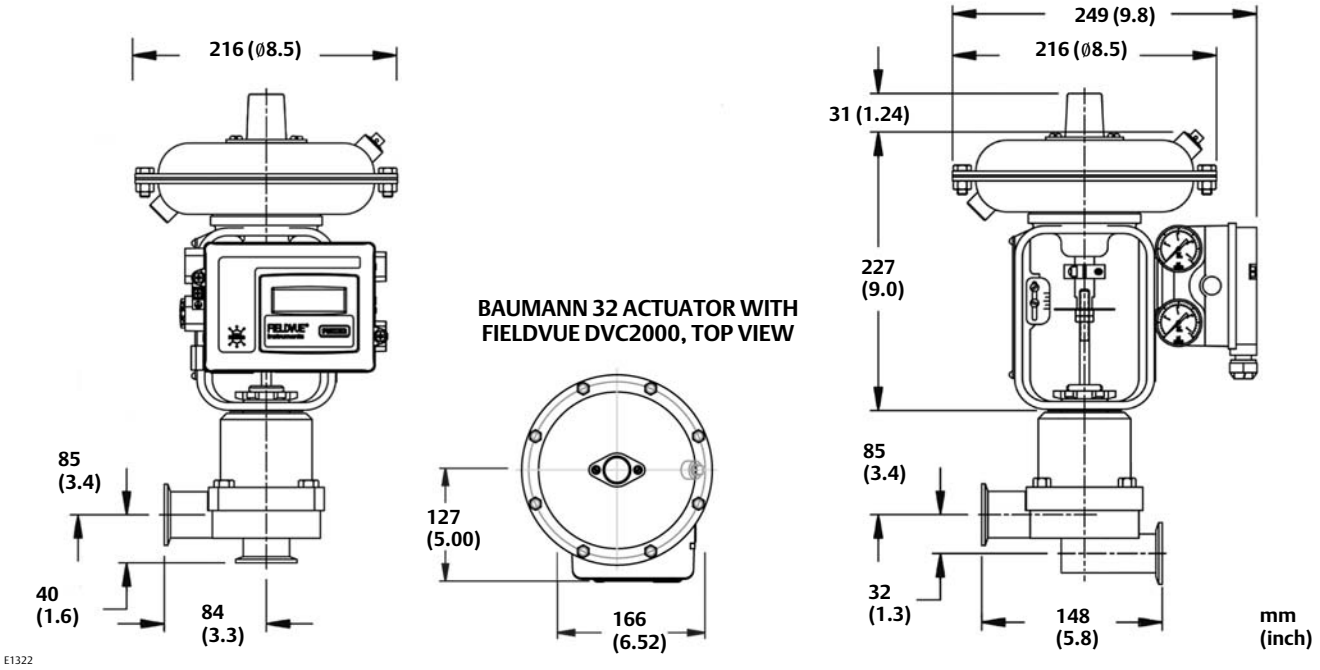
| VALVE SIZE | | 84000 ANGLE ASSEMBLY | | 84000 IN-LINE ASSEMBLY | |
|---|---|---|---|---|---|
| DN | NPS | kgs | lbs | kgs | lbs |
| 25 | 1 | 4.06 | 9.0 | 4.31 | 9.5 |
| 40 | 1-1/2 | 5.22 | 11.5 | N/A | |
| 50 | 2 | 5.22 | 11.5 | N/A | |

Figure 9. Dimensional Drawing for Baumann 84000 NPS 1-1/2 and 2 Angle Valve with FIELDVUE Digital Valve Controller




Note: Actuator removal requires 115mm (4.5 inches) vertical clearance.

Figure 10. Dimensional Drawings for Baumann 84000 NPS 1 Angle and Inline Valves




**84000 ANGLE VALVE BODY WITH BAUMANN 32 ACTUATOR ATC/FO ACTION, DUAL STOP AND FIELDVUE DVC2000 DIGITAL VALVE CONTROLLER**

**84000 INLINE VALVE BODY WITH BAUMANN 32 ACTUATOR ATC/FC ACTION, DUAL STOP AND 3660/3661 POSITIONER**

Table 6. Valve Assembly and Actuator Weights

| VALVE SIZE | | C | | D | | E | | F | | G | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | mm | inch | mm | inch | mm | inch | mm | inch | mm | inch |
| 40 | 1-1/2 | 152.4 | 6.0 | 50.8 | 2.00 | 82.55 | 3.25 | 50.39 | 1.984 | 34.44 | 1.356 |
| 50 | 2 | 160 | 6.3 | 50.8 | 2.00 | 88.9 | 3.50 | 63.9 | 2.516 | 47.63 | 1.875 |



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