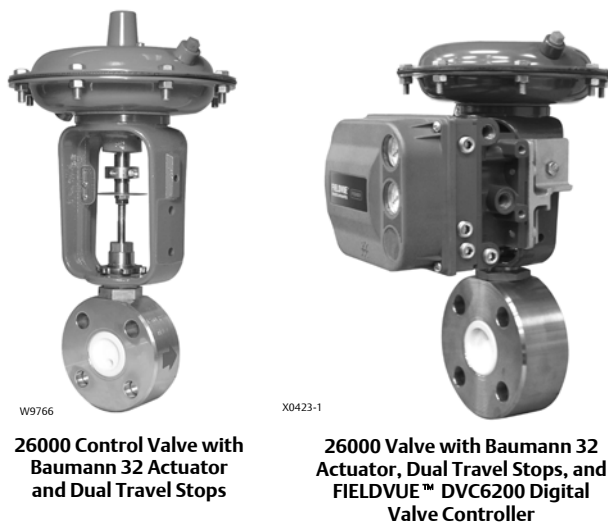


Baumann™ 26000 Corrosion Resistant Control Valve

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Figure 1. Baumann 26000 Control Valve



Introduction

The Baumann 26000 Corrosion Resistant Control Valve (figure 1) features a flangeless wafer valve body. The 316 stainless steel flangeless body and thru-hole wafer design allows for installation between plastic pipeline flanges without risk of gasket leakage. This same valve body, fully pressurized, retains an all wetted PTFE interior resulting in a solid mechanical structure.

Scope of Manual

This instruction manual includes installation, maintenance, and parts information for the Baumann 26000 corrosion resistant control valve.

Do not install, operate, or maintain Baumann 26000 control valves without being fully trained and qualified in valve, actuator, and accessory installation, operation, and maintenance. **To avoid personal injury or property damage, it is important to carefully read, understand, and follow all the contents of this manual, including all safety cautions and warnings.** If you have any questions about these instructions, contact your Emerson Process Management sales office before proceeding.



⚠ WARNING

Always wear protective gloves, clothing and eyewear when performing any installation operations to avoid personal injury.

Personal injury or property damage caused by sudden release of pressure or bursting of pressure retaining parts may result if service conditions exceed those for which the product was intended. To avoid injury or damage, provide a relief valve for over pressure protection as required by government or accepted industry codes and good engineering practices.

Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

If installing into an existing application, also refer to the WARNING at the beginning of the Maintenance section in this instruction manual.

CAUTION

This valve is intended for a specific range of pressures, temperatures and other application specifications. Applying different pressures and temperatures to the valve could result in parts damage, malfunction of the control valve or loss of control of the process. Do not expose this product to service conditions or variables other than those for which the product was intended. If you are not sure what these conditions are you should contact your Emerson Process Management sales office for more complete specifications. Provide the product serial numbers (shown on the nameplate) and all other pertinent information.

⚠ WARNING

If you move or work on an actuator installed on a valve with loading pressure applied, keep your hands and tools away from the stem travel path to avoid personal injury. Be especially careful when removing the stem connector to release all loading on the actuator stem whether it be from air pressure on the diaphragm or compression in the actuator springs.

Likewise take similar care when adjusting or removing any optional travel stop. Refer to the relevant actuator Maintenance Instructions.

If hoisting the valve, take care to prevent people from being injured in case the hoist or rigging slips. Be sure to use adequate sized hoists and chains or slings to handle the valve.

⚠ WARNING

Personal injury could result from packing leakage. Valve packing is tightened before shipment; however, the packing might require some readjustment to meet specific service conditions.

Maintenance

⚠ WARNING

Avoid personal injury and property damage from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:

- Do not remove the actuator from the valve while the valve is still pressurized.
 - Always wear protective gloves, clothing, and eyewear when performing any maintenance operations.
 - Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
 - Use bypass valves or completely shut off the process to isolate the valve from process pressure. Relieve process pressure on both sides of the valve. Drain the process media from both sides of the valve.
 - Depending on the actuator construction, it will be necessary to manage the pneumatic actuator spring pre-compression. It is essential to refer to the relevant actuator instructions in this manual to perform safe removal of the actuator from the valve.
 - Use lock-out procedures to be sure the above measures stay in effect while you work on the equipment.
 - The valve packing box may contain process fluids that are pressurized, *even when the valve has been removed from the pipeline*. Process fluids may spray out under pressure when removing the packing hardware or packing rings, or when loosening the packing box pipe plug.
 - Check with your process or safety engineer for any additional measures that must be taken to protect against process media.
-

Note

Whenever a gasket seal is disturbed by removing or shifting gasketed parts, install a new gasket during reassembly. This provides a good gasket seal because the used gasket may not seal properly.

⚠ WARNING

Avoid personal injury or property damage by thoroughly cleaning the line of all dirt, welding chips, scale, oil or grease, and other foreign material. Failure to do so could result in parts damage, malfunction of the control valve or loss of control of the process.

To avoid personal injury or property damage, do not attempt to do any work on a valve while the system is in operation, the valve must be isolated 100% from the active system and the isolated line voided of pressure and/or hazardous fluids.

Installation

1. Before installing the valve in the pipeline, thoroughly clean the line of all dirt, welding chips, scale, oil or grease, and other foreign material.
2. Install the valve so the controlled fluid will flow through the valve body in the direction indicated by the arrow cast on the valve body.
3. A three-valve bypass must be used to permit removal of the control valve from the line without shutting down the system.
4. In case of a heat-insulated installation, insulate the valve body only, not the bonnet.

CAUTION

The PTFE valve body insert protrudes slightly beyond both sides of the valve body (key 1); it is highly recommended that the included PTFE encapsulated line flange adapter gaskets (key 21) be utilized. (Refer to figures 3, 2, and 4).

Air Piping

1. For an air-to-extend actuator (air-to-close action), connect the actuating air pressure line to the 1/4 NPT opening in the upper diaphragm case. For an air-to-retract actuator (air-to-open action) connect the actuating air pressure line to the 1/4 NPT in the lower diaphragm case.
2. Use 6.4 mm (1/4 inch) O.D. tubing or equivalent for all air lines. If air line exceeds 8 m (25 ft) in length, 9.5 mm (3/8 inch) tubing is preferred. Air lines must not leak. Air pressure not to exceed 2.5 bar (35 psig).

Packing Adjustments

Refer to figures 3, 2, and 4)

Should seat leakage or leakage by the bonnet (key 8) occur, try to retighten the internal packing (key 17) by disconnecting the air line to the actuator, loosen the hex clamp nut (key 12) and turn the bonnet (key 8) clockwise into the valve body (key 1). This rotation will compress the packing (key 17) around the plug and stem assembly (key 4) and against the valve body interior. Retighten the hex clamp nut (key 12) and recheck for leakage.

Should the valve stem packing (key 14) need to be adjusted, turn the packing follower (key 10) clockwise to tighten or counterclockwise to loosen.

Disassembly

Significant wear or contamination may require replacement of the plug or seals. Proceed as follows:

1. Loosen the yoke clamp nut (key 9) and disconnect the actuator (see appropriate actuator instructions).
2. Loosen the packing follower (key 10) and the hex clamp nut (key 12).
3. Unscrew and remove the bonnet (key 8) from the valve body (key 1).
4. Remove the packing (key 17) from the valve body (key 1) by flowing air into port A. This will drive the V-ring packing seals and plug out of the top opening of the valve body.

CAUTION

The PTFE valve body insert protrudes slightly beyond both sides of the valve body (key 1); it is highly recommended that the included PTFE encapsulated line flange adapter gaskets (key 21) be utilized.

Reassembly and Calibration

1. Lay out all parts and clean the valve body thoroughly.
2. Hold the valve body (key 1) upside down, see figure 5.
3. Insert the lower (half round) packing ring.

Note

The flat side should rest in the bottom of the housing bore.

4. Insert the first packing V-ring with the V opening facing the lower ring. Tip the ring slightly to prevent the ring from hanging up at the corner of the outlet port, see figure 5.
5. For $C_v < 1.0$, insert a spacer ring (key 3) with the V opening towards first packing ring. **Note: The cross hole must line up with the hole B in a radial direction and within 1/16 inch in the vertical direction.** The spacer ring (key 3) is not required in $C_v = 2.5$ or $C_v = 4.2$.
6. Insert the remainder of the packing V-rings (key 17) as shown, one at a time. Tip each ring slightly to ease installation.
7. Move the valve body (key 1) right-side up and clamp in a vise or test fixture, using the line flange adapter gaskets (key 21).
8. Screw the hex clamp nut (key 12) all the way onto the lower thread of the bonnet (key 8).
9. Screw the bonnet seal (key 50) all the way onto the lower thread of the bonnet (key 8) until it touches the nut (key 12).
10. Lubricate the lower bonnet thread with anti-seize lubricant and insert the valve plug and stem assembly (key 4) into the bonnet (key 8).
11. Screw the bonnet (key 8) with the plug and stem assembly (key 4) loosely into the valve body (key 1).
12. Push the stem all the way down until the plug is fully seated.
13. Install the valve body in the test fixture or between a pair of appropriate mating line flanges.
14. Apply 50 psi air pressure to the fixture or the flange connected to valve port A and connect port B to a flow meter or bubble indicator (tube in water).
15. For $C_v < 1.0$, slowly screw the bonnet (key 8) into the valve body with a 1-1/4 inch wrench until the air flow stops completely. Push the valve stem up and down several times and repeat the leakage test. For $C_v > 1.0$, screw the bonnet (key 8) down until it touches the packing and then turn an additional 180 degrees.

Note

The force to pull up or push down the stem should not exceed 25 lbs.

16. Close off air flow leaving port B and pull up the stem. This will pressurize all parts of the valve body.
17. Apply leak detection fluid or soap solution to the thread between the valve body and bonnet (key 8). There should be no leakage.
18. Hold the bonnet in place and tighten the nut (key 12) firmly (this will compress the bonnet seal (key 50)).
19. Install the secondary packing kit [packing spring (key 6), washer (key 16), stem packing rings (key 14), packing spacer (key 20) and packing follower (key 10)] into the bonnet as shown in figure 6. Tighten by rotating the packing follower (key 10) nut clockwise.
20. Attach the actuator to the bonnet. Turn the actuator to thread the actuator stem onto the valve stem until the yoke touches the shoulder of the bonnet.
21. Lock the drive nut (key 9), see figures 3, 2, and 4.
22. Apply 4 to 5 psi to the actuator for air-to-open or 13 to 14 psi for air-to-close.
23. With 50 psi air applied to port A, counter tighten the jam nuts (key 27) and slowly turn the valve plug and stem assembly (key 4) clockwise to thread it into the actuator stem. Stop and lock the stem with the jam nut (key 27) when port B shows some minimum flow.
24. Adjust the zero position of the travel indicator to the present position of the travel indicator disk (key 58).
25. Reduce air pressure to 3 psi for air-to-open or increase air pressure to 15 psi for air-to-close. For $C_v < 1.0$, there should be no seat leakage (Class VI). For $C_v > 1.0$, the allowed leakage is Class IV. If leakage is noted, loosen the jam nuts (key 27) and turn the plug and stem assembly (key 4) further into the valve bonnet (key 8).

-
26. At the lowest actuator travel position, the indicator disk (key 58) shall be at least 0.040 inches below the zero travel position. If not, move the stem (key 4) further into the bonnet (key 8) and recalibrate the travel indicator.
 27. Check the valve travel for a full 1/2 inch from the zero point on the indicator scale.
 28. Check the dead band of the actuator. The difference between the signal to move the stem up and the signal to move stem down shall not exceed 2 psi. If it does exceed 2 psi, the secondary packing (key 14) is too tight.
 29. See appropriate actuator instructions to set the travel stops. (Refer to illustrations in the appropriate actuator instruction manual to determine what type of stops are being used).
 30. Attach and calibrate the positioner.

Note

Travel should commence from the zero travel indicator mark at 3.2 psi (4.3 mA) air-to-open or at 14.8 psi (19.7 mA) air-to-close. The flow should enter only through the lower port A to help energize the V-ring packing set (key 17).

Parts Ordering

When corresponding with your Emerson Process Management sales office about this equipment, always mention the valve serial number. When ordering replacement parts, also specify the key number, part name, and desired material using the following parts tables.

WARNING

Use only genuine Fisher® replacement parts. Components that are not supplied by Emerson Process Management should not, under any circumstances, be used in any Fisher valve, because they may void your warranty, might adversely affect the performance of the valve, and could cause personal injury and property damage.

Table 1. Parts List

Key No.	Description	CL150 / PN 10, 16, & 25	CL300
1	Valve Body with PTFE Insert, Cv= 0.001 - 1.0	26514	26514-3
	Valve Body with PTFE Insert, Cv= 2.5	26526	26526-3
	Valve Body with PTFE Insert, Cv= 4.2	26532	26532-3
3*	Spacer (Cv = .001 - 1.0 ONLY)	26507	26507
4*	Plug & Stem Subassembly, Cv=0.001	26520-008-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.005	26520-007-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.01	26520-006-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.02	26520-005-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.05	26520-004-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.1	26520-003-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.2	26520-002-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.4	26520-001-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=0.8	26545-001-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=1.0	26545-000-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=2.5	26527-002-999 ⁽¹⁾	
	Plug & Stem Subassembly, Cv=4.2	26535-002-999 ⁽¹⁾	
8	Bonnet	26505	
	Bonnet, Extension	26528	
9	Drive Nut (Yoke)	011757-003-153	
10	Packing Follower	24490-1	
12	Hex Clamp Nut	26542	
14*	Secondary Packing Kit, V-Ring, standard	24494T001	
17*	Primary Packing, Cv < 1.0 (6 rings)	26516	
	Primary Packing, Cv = 2.5 (7 rings)	26523	
	Primary Packing, Cv = 4.2 (9 rings)	26536	
21	Line Flange Adapter Gaskets, qty 2	86814	
27	Jam Nut, qty 2	971514-002-250	
50	Bonnet Seal	26539	
58	Travel Indicator	24299	

1. Add letter T or H to the end of the part number to indicate Tantalum or N10276 nickel alloy plug material.

Figure 2. Valve Body for Cv Rating of 2.5
(Class IV Seat Leakage)

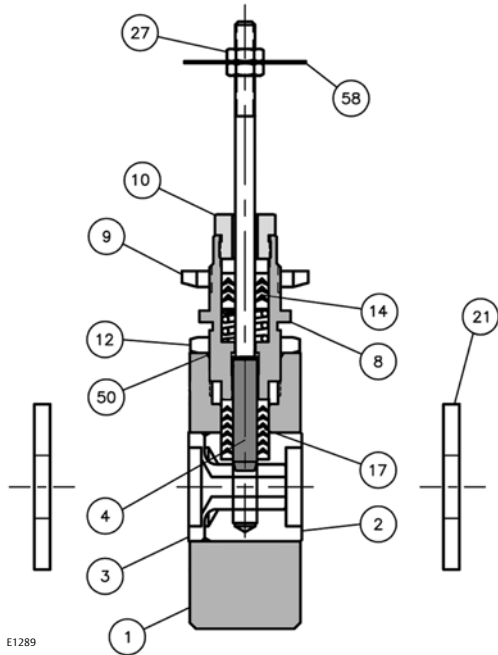


Figure 4. Valve Body for Cv Rating of 4.2
(Class IV Seat Leakage)

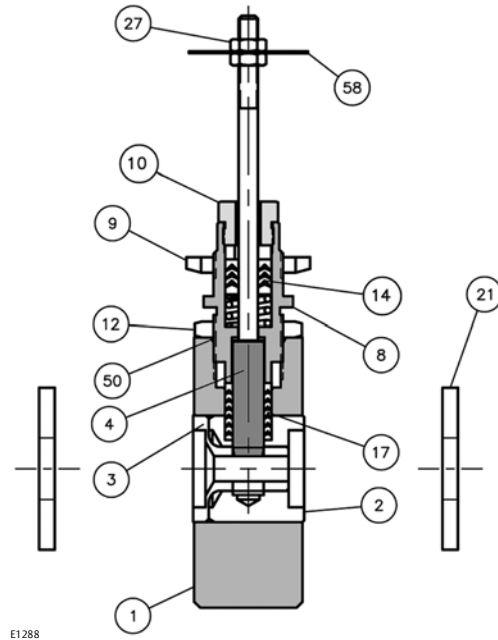
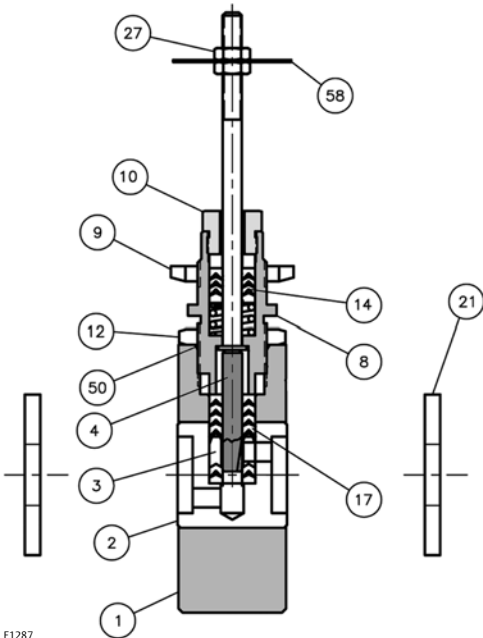


Figure 3. Valve Body for Cv Ratings of 0.001 to 1.0
(Class VI Seat Leakage)



CAUTION

It is highly recommended that the included PTFE encapsulated line flange adapter gaskets (key 21) be utilized.

Figure 5. Baumann 26000 Valve Body Shown Upside Down for Assembly Procedure

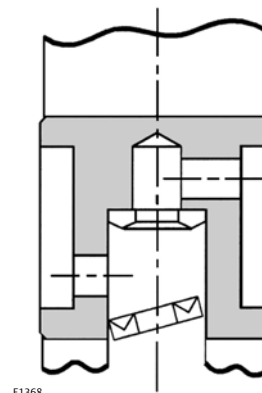


Figure 6. Secondary Packing: Spring-Loaded PTFE V-Ring Packing Kit

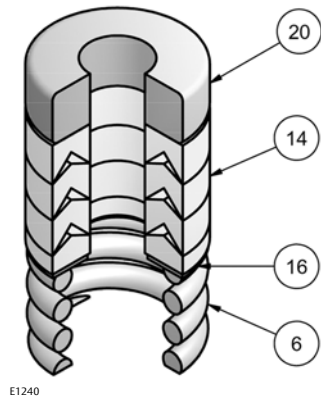


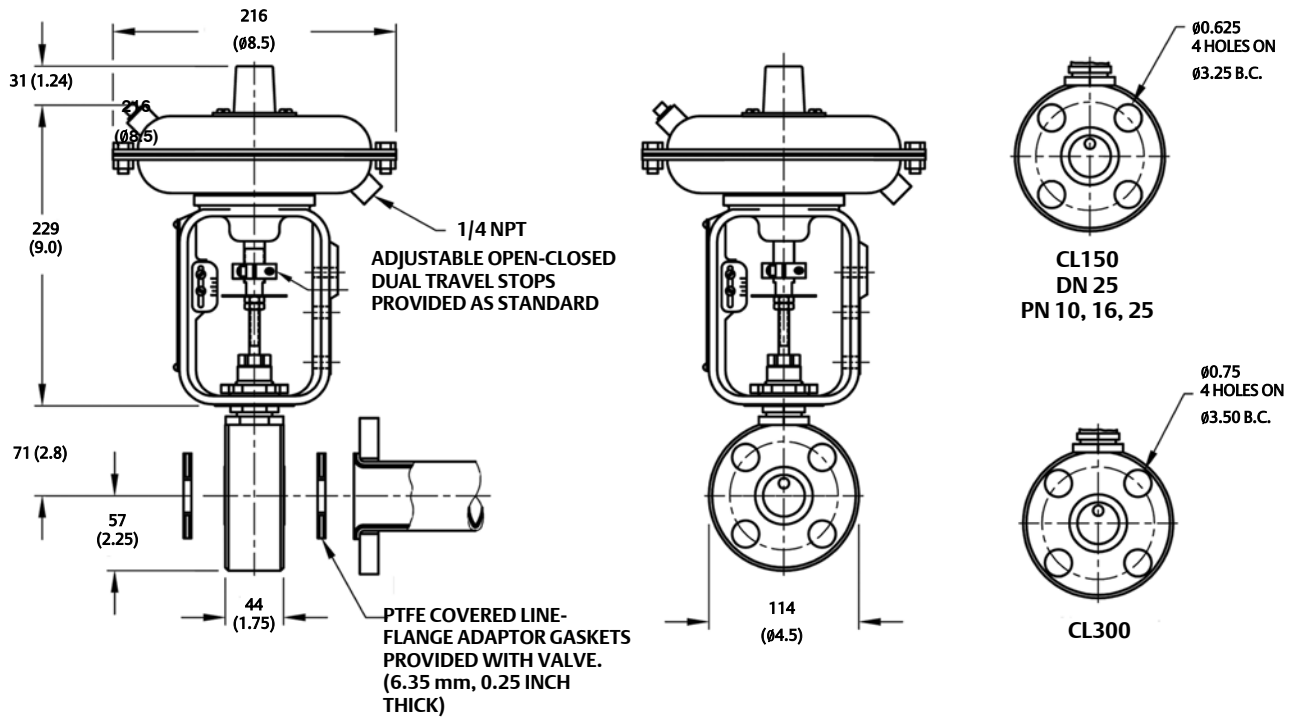
Table 2. Secondary Packing Spring-Loaded PTFE V-Ring Packing Kit, Part Number 24494T001

Key Number	Description	Material
6	Spring	ASTM A313 S30200
14	Packing Set	PTFE/carbon-filled PTFE
16	Washer	ASTM A240 S31600
20	Spacer	J-2000 (filled-Polytetrafluoroethylene)

Table 3. Baumann 26000 Valve and Actuator Weights

VALVE WEIGHT		ACTUATOR WEIGHT	
kg	lbs	kg	lbs
3.3	7.3	4.5	10

Figure 7. Dimensions NPS 1 26000 Valve with Baumann 32 Actuator and Dual Travel Stops

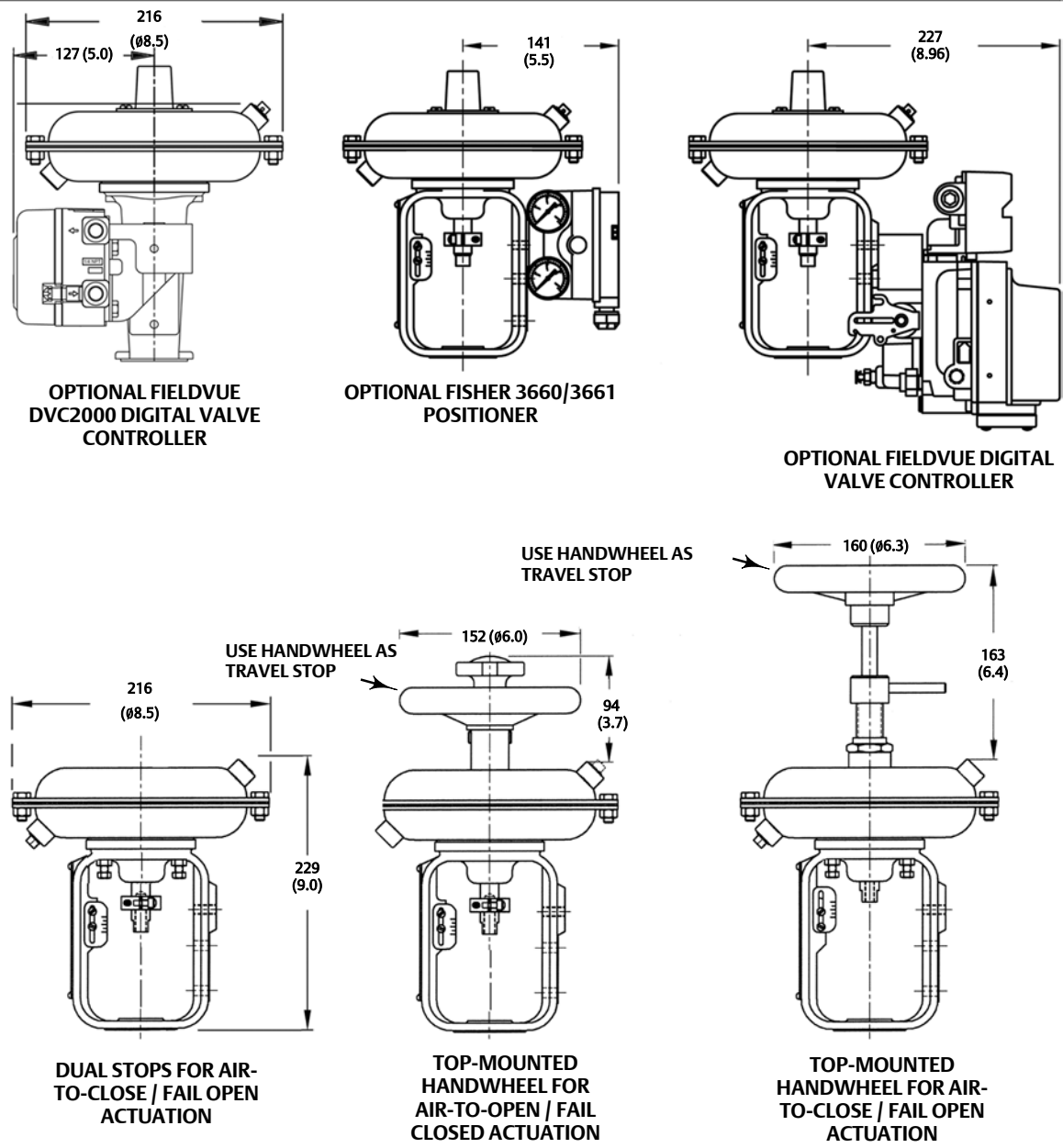


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mm
(inch)**CAUTION**

The PTFE valve body insert protrudes slightly beyond both sides of the valve body (key 1). It is highly recommended that the included PTFE encapsulated line flange adapter gaskets (key 21) be utilized.

Figure 8. Dimensions for Baumann 32 Actuator with Options



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