

Mounting a DVC6020/DVC6020 Digital Valve Controller on Fisher® Type 585 and 585R Size 100 Actuators, 2 to 3 Inch Travel

Installation Instructions

June 2007

Use these instructions to mount a FIELDVUE® DVC6020 or DVC6020f digital valve controller on Fisher® Type 585 and 585R size 100 actuators, with 2 to 3 inch travel.

actuator, releasing all pressure from the actuator. Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.

WARNING

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

- Always wear protective clothing, gloves, and eyewear.
- 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 control valve.
- Use bypass valves or completely shut off the process to isolate the control valve from process pressure. Relieve process pressure from both sides of the control valve.
- Vent the pneumatic actuator loading pressure and relieve any actuator spring precompression.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

Refer to figure 2 and the parts list for mounting parts identification. Refer to the FIELDVUE® DVC6000 Series Digital Valve Controller Instruction Manual, Form 5647, or the FIELDVUE® DVC6000f Series Digital Valve Controller Instruction Manual, Form 5774 for digital valve controller parts identification. Refer to the appropriate actuator instruction manual for actuator installation, operation, maintenance, and parts identification.

1. Isolate the control valve from the process line pressure and release pressure from both sides of the valve body. Shut off all pressure lines to the

WARNING

To avoid personal injury due to the sudden, uncontrolled movement of parts, do not loosen the stem connector cap screws when the stem connector has spring force applied to it.

2. Remove the cover plate screws and cover plate from the actuator, if present.
3. During the attachment of the cam bracket (key 11) to the valve stem connector it will be necessary to loosen the stem connector cap screws. Consult the appropriate actuator instruction manual for proper actuator disassembly and reassembly.
4. Attach the cam bracket (key 11) to the stem block using plain washers (key 1) and hex head cap screws (key 2).
5. Attach the cam (key 3) to the cam bracket using plain washers (key 12), lock washers (key 13), and hex head cap screws (key 14). Ensure that the cam is oriented as shown in figure 2.
6. Attach the mounting adapter (key 4) to the yoke using the four spacers (key 9) and four hex socket cap screws (key 5).
7. Remove the roller from the digital valve controller by removing the screw, lockwasher and nut (key 87, 89, and 90; refer to the appropriate digital valve controller instruction manual for parts identification, if necessary). Retain the screw, lockwasher, and nut.
8. In place of the roller, install the follower arm extension (key 10) on the digital valve controller, using two lockwashers (key 15), hex nuts (key 17), and machine screws (key 16), as shown in figure 1.
9. Install the roller on the follower arm extension as shown in figure 1, using the retained screw, lockwasher and nut (key 87, 89, and 90).
10. Install the vent adapter (key 10) and vent (key 11) on the digital valve controller pressure outlet.



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11. Mount the digital valve controller on the mounting adapter (key 4) using four hex socket cap screws (key 6).

12. Ensure that the roller is centered and resting on the cam surface.

13. Ensure that the cam is positioned so that when the actuator stem is fully extended, the roller lines up with either the lower mark on the cam (if valve travel is 2 inches) or the upper mark on the cam (if valve travel is 3 inches). See figure 2 for cam markings.

14. Make pneumatic and electrical connections to the digital valve controller as described in the digital valve controller instruction manual.

15. It may be necessary to fine tune the placement of the cam so that the digital valve controller receives the proper feedback. An easy way to do this is to place the valve/actuator at mid travel and adjust the cam while monitoring the feedback count values using a HART host. Refer to appropriate digital valve controller instruction manual to obtain the target count values for a DVC6020.

16. Setup and calibrate the digital valve controller as described in the digital valve controller instruction manual or quick start guide.

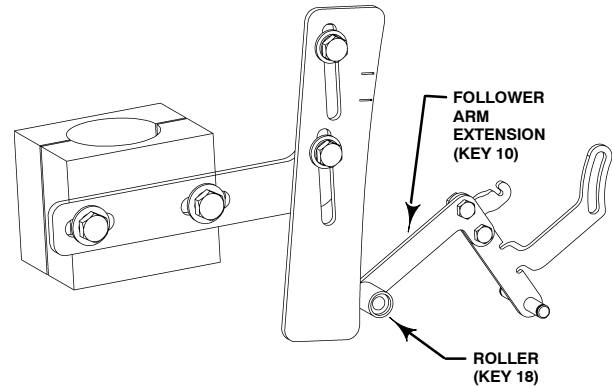


Figure 1. Installing Roller

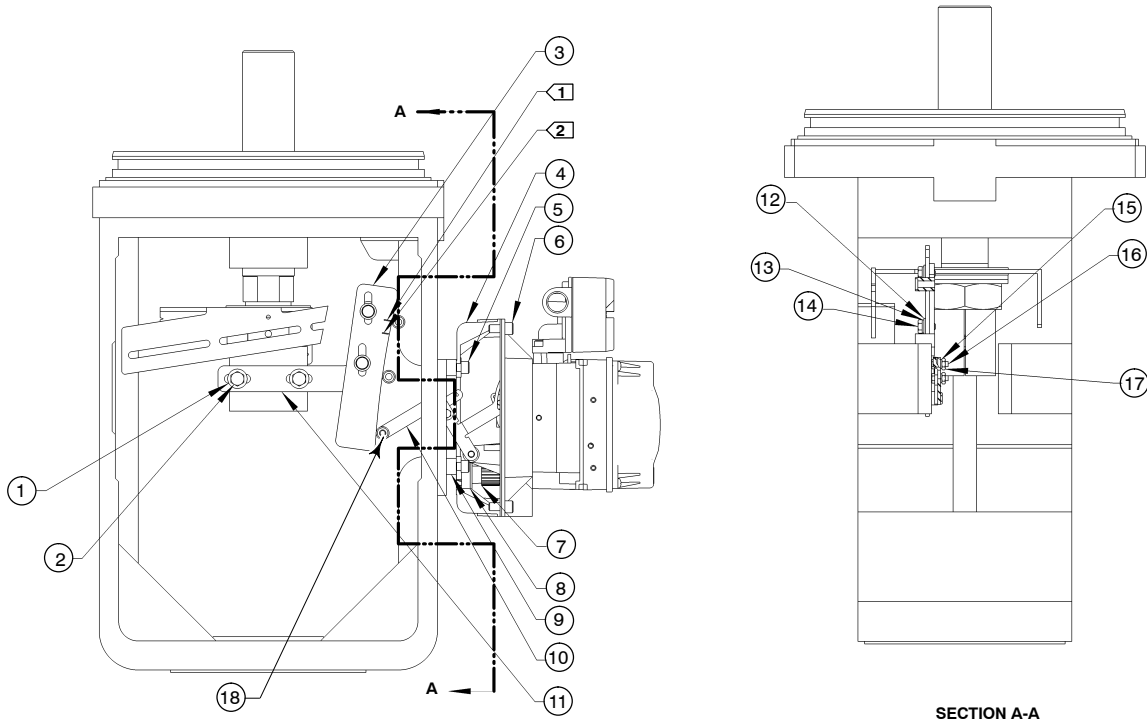
17. Re-attach the actuator cover plate, if necessary.

For additional information concerning mounting, setup, calibration, and maintenance of the DVC6000 or DVC6000f Series digital valve controller, refer to the appropriate instruction manual.

Note

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NOTES: A SCREEN AND HEX SOCKET PIPE PLUG ARE INCLUDED IN THIS MOUNTING KIT. THESE ARE ONLY NEEDED WHEN CONVERTING A DVC6020 OR DVC6020f FROM DOUBLE-ACTING TO SINGLE-ACTING.

- ① CAM/ROLLER POSITION MARK FOR 3.00 TRAVEL
- ② CAM/ROLLER POSITION MARK FOR 2.00 TRAVEL

GE03277 REV A

PARTS LIST		
KEY	QTY	DESCRIPTION
1	2	PLAIN WASHER
2	2	5/16-18 X 2.50 HEX HEAD CAP SCREW
3	1	CAM
4	1	MOUNTING ADAPTER
5	4	5/16-18 X 1.00 HEX SOCKET CAP SCREW
6	4	5/16-18 X 0.62 HEX SOCKET CAP SCREW
7	1	VENT ADAPTER
8	1	3/8-18 NPT VENT
9	4	.344 X .625 X .38 SPACER
10	1	FOLLOWER ARM EXTENSION
11	1	CAM BRACKET
12	2	PLAIN WASHER
13	2	LOCK WASHER
14	2	1/4-20 X 0.50 HEX HEAD CAP SCREW
15	2	LOCK WASHER
16	2	MACHINE SCREW
17	2	HEX NUT
18	1	ROLLER ASSEMBLY (PART OF DVC6020)

Figure 2. Mounting Parts Identification

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