

Kit PN TGX:16152-496

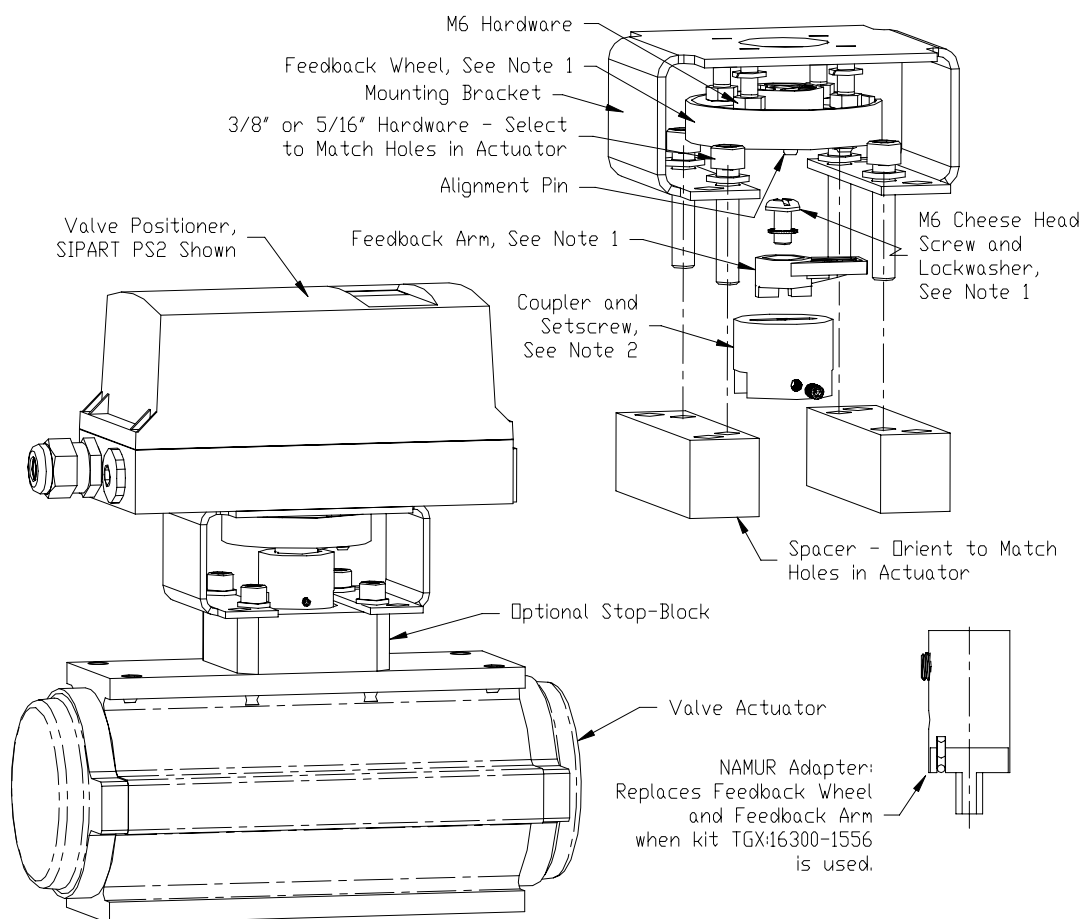
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Mounting a SIPART PS2 or ValvePAC Series 760 Valve Positioner on a Shafer Valve Actuator Model DS-17, 24, 33 or 48

This publication describes mounting a Siemens SIPART PS2 or ValvePAC™ Series 760 Valve Positioner to an above listed Shafer actuator and installing the mechanical feedback linkage. Typical PS2 installations are shown in the illustration below. The 760 installations are similar.



Drawing Notes

1. These parts supplied in kit part number 6DR4004-8D and used only in a PS2 installation. May be replaced by NAMUR Adapter Kit TGX:16300-1556.
2. The 760's NAMUR-style input shaft will directly engage the coupler on the actuator shaft. The input shaft can be either a single piece (Design Levels A and B¹) or the universal shaft plus the NAMUR adapter from kit TGX:16300-1556 (Design Level D).

¹ Positioner design level is the next to last character in the model number on the label inside the cover.

PARTS LIST

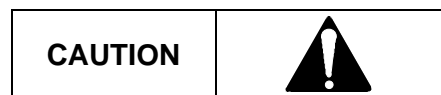
Positioner Installation Kit PN TGX:16152-496		Feedback Kits	
Description		Kit PN 6DR4004-8D (See Note)	
Description	Quantity	Description	Quantity
Mounting Bracket, DS-17, 24, 33, and 48	1	M6 x 12 Cheese Head Screw	1
Coupler with Setscrew, DS-33, DS-48	1	M6 Split Lockwasher	1
Coupler with Setscrew, DS-17, DS-24	1	Feedback Arm	1
Spacer, DS17, 24, 33, and 48	2	Feedback Wheel with Setscrew	1
3/8-16 x 1-5/8" Long Hex Hd Screw	4	Kit PN TGX:16300-1556 (See Note)	
3/8 Medium Split Lockwasher	4	Description	Quantity
5/16-18 x 1-5/8" Long Hex Hd Screw	4	NAMUR Adapter	1
5/16 Medium Split Lockwasher	4		
M6 x 12 Hex Hd Screw, DIN933-A2	4		
M6 Split Lockwasher, DIN127B-A2	4		

Note: Either kit 6DR4004-8D or TGX:16300-1556 will be used; see the illustration on page 1.

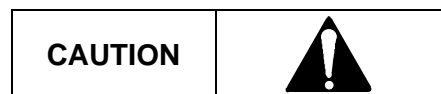
INSTALLATION

Refer to the following procedure and to the installation instructions for the positioner and actuator while performing the installation. The current revision of the positioner instruction is available at the Siemens Internet site. See Customer/Product Support in this publication for the URL.

Before beginning the installation, note the following cautions.



Do not apply supply pressure to the actuator or the valve positioner during the installation process. Applying supply pressure before the equipment is properly mounted could cause unexpected movement that could lead to personal injury or equipment damage.



Do not exceed the maximum actuator and valve positioner air pressures stated in the manufacturer's literature. Exceeding these ratings could cause personal injury or equipment damage.

This procedure describes mounting either a PS2 or a 760 positioner on the Shafer actuator. Feedback is provided by either of two kits. Most steps are performed for both positioners and both feedback kits. Where a step is performed for only one of these positioners, or for a particular kit, the step is prefaced by the positioner model (e.g. PS2 -) and, as needed, the kit part number. For example, perform Step 1 if you are installing a Series 760 positioner; if installing a PS2, begin at Step 2.

1. 760 – Free the input shaft so it rotates freely.
 - 1) Loosen four cover screws and remove the cover; refer to SD760 as needed.
 - 2) If installed, remove the beacon or flat indicator, shaft extension, and compression washer. Save for reassembly after positioner calibration.
 - 3) Loosen the cam locking screw and then loosen the cam locking nut 2-3 complete turns. Lift the upper cam index (gear) so it is **not** keyed on the input shaft.

2. Open the kit(s) and identify each component. Refer to the illustration on page 1 and the parts lists above.
3. Secure the mounting bracket to the PS2 or 760 Valve Positioner using four M6 hex head screws and four M6 lockwashers. Securely tighten the hardware – do not over tighten. Review the following options and proceed to the indicated step.
 - If installing a PS2 and kit 6DR4004-8D, perform step 4.
 - If installing a PS2 and kit TGX:16300-1556, go to step 5.
 - If installing a 760 (Design Level D) and kit TGX:16300-1556, go to step 5.
 - If installing a 760 (Design Level A or B) that has an input shaft with a NAMUR shaft end, go to step 6.
4. PS2 and Kit 6DR4004-8D:
 - 1) Refer to the figure on page 1 and note the orientation of the feedback wheel (the alignment pin near the wheel perimeter must point toward the actuator and later engage the feedback arm). Place the wheel on the positioner input shaft. The wheel should be close to, but not touching, the mounting bracket. Tighten the setscrew on the flat on the shaft - do not over tighten.
 - 2) Select the coupler (kit TGX:16152-496) that best fits the actuator shaft and place it on the actuator shaft.
 - 3) Insert the tongue on the feedback arm (kit 6DR4004-8D) into the slot in the selected coupler. Insert the M6 cheese head screw with the washer into the feedback arm and thread the screw into the coupling. Tighten the screw – do not over tighten. Go to step 6.
5. PS2 or 760 and Kit TGX:16300-1556:
 - 1) Install the NAMUR adapter (kit TGX:16300-1556) on the positioner input shaft. As needed, remove the setscrew from the adapter and apply a thread locking solution. Place the adapter on the input shaft and tighten the setscrew securely on the flat of the shaft. The adapter should not contact the positioner body or mounting bracket.
 - 2) Select the coupler (kit TGX:16152-496) that best fits the actuator shaft and place it on the actuator shaft. Go to step 6.
6. Remove the setscrew from the coupler on the actuator shaft and apply a thread locking solution. Thread the setscrew into the coupler, center the coupler on the actuator shaft, and secure it with the setscrew.
7. Use the hardware from the TGX:16152-496 kit (4, 3/8-16 x 1-5/8" screws and lockwashers and 4, 5/16-18 x 1-5/8" screws and lockwashers) to determine the size of the threaded holes in the top of the actuator. Set the screws and lockwashers that fit the actuator holes aside for later use. (The other screws and lockwasher will not be used.)
8. If the actuator does **not** have a stop-block, orient two spacers (kit TGX:16152-496) as shown in the illustration. Align the holes in the spacers with those in the actuator.
9. Refer to the illustration on page 1 and orient the positioner and mounting bracket over the actuator. Perform either a), b), or c) below, depending upon positioner model and kit.
 - a) PS2 and Kit 6DR4004-8D – Rotate the positioner input shaft to align the pin on the wheel with the recess near the end of the feedback arm. Then lower the positioner until the pin engages the feedback arm and the mounting bracket rests on either the actuator stop-block or spacers.

- b) PS2 or 760 and Kit TGX:16300-1556 – Rotate the positioner input shaft to align it with the coupling on the actuator shaft. Then lower the positioner until the adapter on the positioner input shaft engages the coupling and the mounting bracket rests on either the actuator stop-block or spacers. The NAMUR adapter, coupler, and actuator shaft centerlines must be in alignment to minimize friction and binding, and they must fully engage to minimize backlash.
 - c) 760 with a NAMUR shaft end – Rotate the positioner input shaft to align it with the coupling on the actuator shaft. Then lower the positioner until the positioner input shaft engages the coupling and the mounting bracket rests on either the actuator stop-block or spacers. The NAMUR shaft end, coupler, and actuator shaft centerlines must be in alignment to minimize friction and binding, and they must fully engage to minimize backlash.
10. Fasten the positioner and bracket to the actuator using the screws and lockwasher selected in Step 7.
 11. Tighten all hardware.
 12. 760 – Refer to SD760 to index the cam and tighten the cam locking nut and screw. As needed, the cam type can be changed at this time.
 13. Make the pneumatic connections needed to fully stroke the valve.
 14. Read the “Cautions” on page 2 and then apply the appropriate air pressures. Exercise the positioner/actuator assembly to ensure that the valve fully strokes. Calibrate the positioner as described in its manual.
 15. Reassemble the positioner.

CUSTOMER/PRODUCT SUPPORT

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