

CLOSEMOUNT ASSEMBLY FOR AIR OR ELECTRIC ACTUATORS

Technical Note 403

TWO POSITION VALVES

The valve and actuator arrive from the factory accurately aligned and ready to use. However, any time the clamp ring on the actuator is loosened to readjust or remove the valve from the actuator, the alignment must be checked.

NOTE: Much of the discussion in this technical note has to do with alignment issues on air and standard electric actuators. Since microelectric and universal actuators are self-aligning and misalignment is typically never a problem, those portions of the instructions do not apply.

DISASSEMBLY

The valve can be removed from the CR41/closemount standoff without affecting alignment by removing the two HWSC-SC6-10NT screws (Figures 1 and 2). The alignment is not changed as long as the HWSC-SC6-10B screw in the CR4 clamp ring is not loosened.

NOTE: P type 10 port valves have only one HWSC-SC6-10NT screw. W valves with more than 10 ports and UW valves with more than 8 ports have no mounting holes; they are held in place by a clamp ring (Figure 3), and cannot be removed from the actuator without affecting the alignment.

The CR4/clamp ring should not be removed from the actuator if at all possible. The clamp ring is attached with two HWSC-SC8-6TDH screws, which are 3/8" long.

NOTE: Never use screws longer than 1/2" to attach the CR4 to a standard electric actuator, as they will interfere with internal moving parts.

Figure 1: Valco valve (two mounting holes) on an actuator with closemount hardware

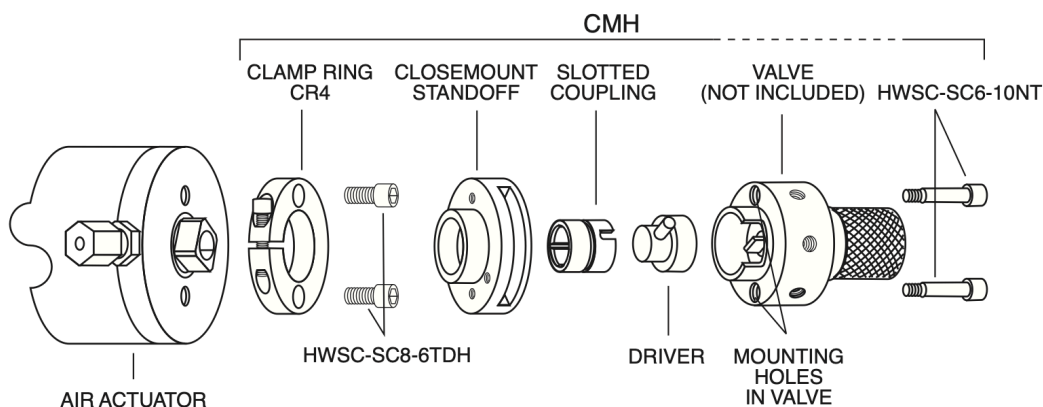
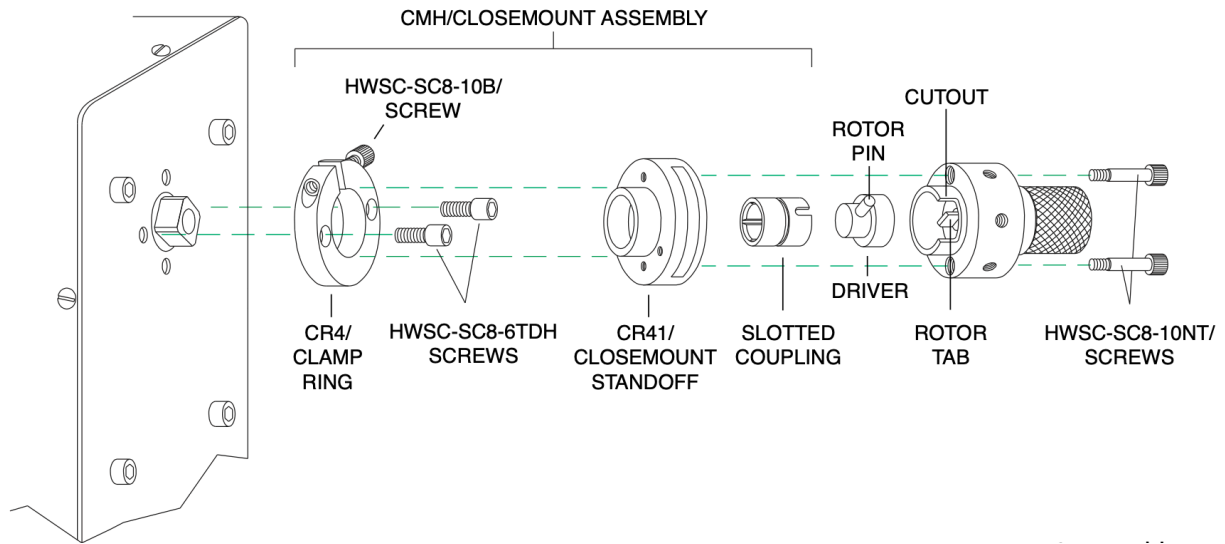


Figure 2: W Type valve installed on a standard electric actuator with a closemount assembly



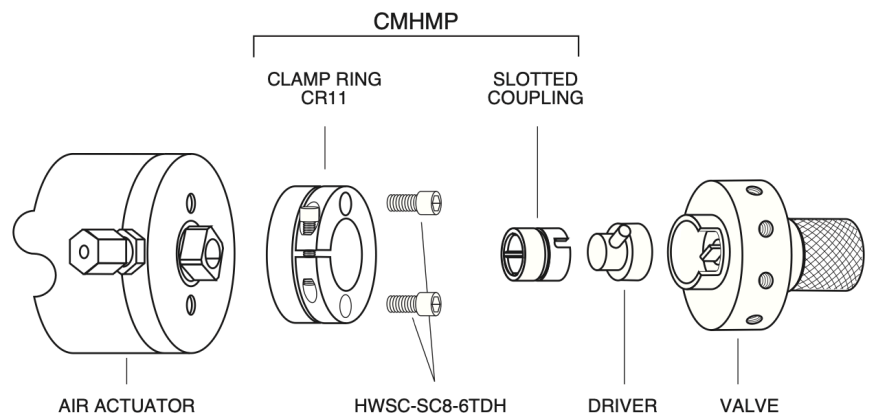
ASSEMBLY

1. If an actuator has been specified for closemount use, it will come from the factory with the CR4/ clamp ring already mounted. The clamp ring should not ever be removed from the actuator: however, if it has been removed, reattach it with the screws specified in Figures 1, 2, or 3, as appropriate.
2. For an air actuator, apply air pressure to the air inlet closest to the valve. For a standard electric actuator, switch to the LOAD position.
3. Turn the valve to the counterclockwise position. For Valco valves, this is shown by the position of the rotor tab in Figures 1 and 2. The valve and actuator are now both in the LOAD position.

CAUTION: The valve and actuator must be in corresponding rotational positions before assembly. If they are not, the valve or electric actuator may be damaged when operated.

4. Attach the valve to the CR41/closemount standoff with the HWSC-SC6-10NT screws. For Valco valves, choose the orientation that leaves the rotor pin and valve cutout visible. As described earlier, some valves have no mounting holes and mount directly to the CR4/clamp ring. (Figure 3)
5. Install the slotted coupling on the square output shaft of the actuator and slide the valve and CR41/ closemount standoff into the CR4/clamp ring, making sure that the slot in the coupling engages the rotor pin.
6. Check the alignment and align as necessary.

Figure 3: Valco valve (no mounting holes) on an actuator with closemount hardware

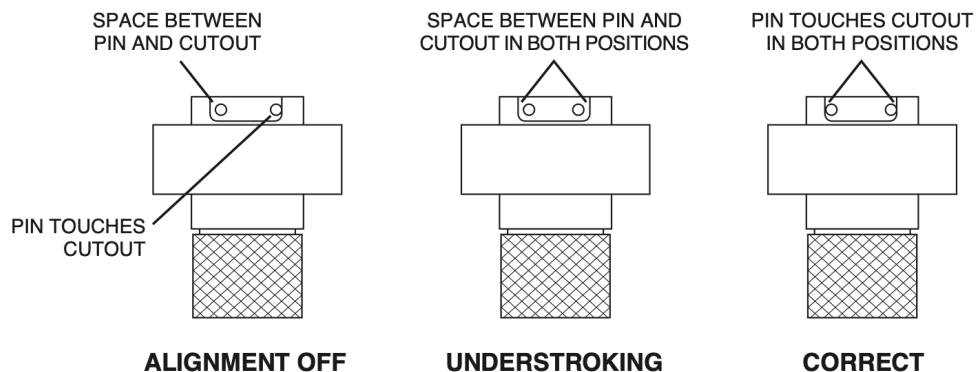


VISUALLY CHECKING THE ALIGNMENT ON VALCO VALVES

It is important to note that the actuator drives only the rotor within the valve body (via the slotted coupling): the valve body remains stationary with respect to the actuator. To check the alignment, cycle the actuator from one position to the other and observe the location of the rotor pin. (Figure 4) The rotor pin should come to rest against both sides of the cutout in the valve body. If it does not, realignment is necessary.

If the pin does not contact the stop in either position, the actuator does not stroke far enough. This should never be the case with newly purchased valve and actuator combinations, but it could come up if you are using these instructions to retrofit an actuator to a valve. Technical Note 408 and the two position standard electric actuator manual contain instructions for adjusting the stroke of an electric actuator. For an air actuator, consult the factory.

Figure 4: Visually checking the alignment (rotor pin shown in both positions)



ALIGNMENT PROCEDURE

NOTE: In air actuated valves, air must be maintained on the actuator throughout this procedure. Actuators which have been installed with a Valco Digital Valve Interface or with two 3-way solenoid valves will not allow this. The DVI or solenoids must be bypassed so that gas is supplied directly to the actuator.

1. After determining that alignment is necessary, actuate the valve so that the rotor pin is against one stop.
2. Loosen the clamp ring screw slightly. This will allow the actuator to complete its travel if it was being stopped by the end of the valve rotor travel. The valve will rotate slightly.
3. Tighten the clamp ring screw and cycle the actuator to the other position. The pin should come to rest against the stop. If it does not, repeat the procedure.

CHECKING THE ALIGNMENT WHEN A VISUAL CHECK IS NOT POSSIBLE

Since the pin cannot be seen on Cheminert valves and on Valco valves with no mounting holes, the only evidence of proper alignment is proper function. First, read the note above under Alignment Procedure. Then align the valve by slightly loosening and then re-tightening the clamp ring screw in both actuator positions. If flow is equal in both positions, the valve is aligned. (When comparing flow rates, be sure that there is no loop or tubing restriction masquerading as valve restriction.)