

INSTALLATION, OPERATION & MAINTENANCE

INTRODUCTION:

The Exact-XL electro-pneumatic positioner controls the position of a rotary actuator and its final control element by modulating the flow of supply air to the actuator in response to an analog control signal of 4~20 mA.

The positioner can be installed on a Spring Return or Double Acting rotary actuator.

MOUNTING PROCEDURE (For Namur Actuators): The mounting hardware is of a three-piece design. The bottom mounting brackets are two separate “L” shaped pieces, one small and large plate; the top mounting bracket is one-piece “U” shaped. (See Figures 1.1 & 1.2).

EXACT-XL

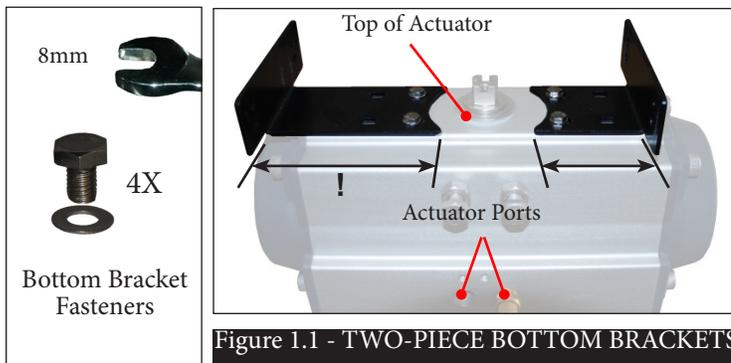


Figure 1.1 - TWO-PIECE BOTTOM BRACKETS



Figure 1.2 - ONE-PIECE TOP BRACKET

1. Mount the two brackets to the top of the actuator as shown in Figure 1.1 above.
Finger tighten the bolts only at this time.
A standard bracket is available for Namur compliant actuators.
2. Install the one piece bracket on the bottom of the positioner, making sure the positioner shaft extends through the large cutout in the bracket as shown in Figure 1.2 above.
3. Verify that the orientation of the flats match up to the positioner shaft flats as shown in Figure 1.3. If necessary, rotate the cam before installing the positioner (see “Cam Adjustment”).

Note: Actuator should be in the orientation corresponding to the zero input signal.

4. Fasten the two bottom brackets to the top bracket using the supplied phillips head machine screws and washers (See Figure 1.4).
Tighten securely.
5. Refer to the Pneumatic Connection portion on the next page for all piping instructions.
6. Stroke the actuator/valve two or three times to align the positioner and actuator. With 50% input (Actuator at 45 degrees), tighten the mounting bolts. Stroke the actuator/valve again to verify there is no misalignment throughout the stroke.

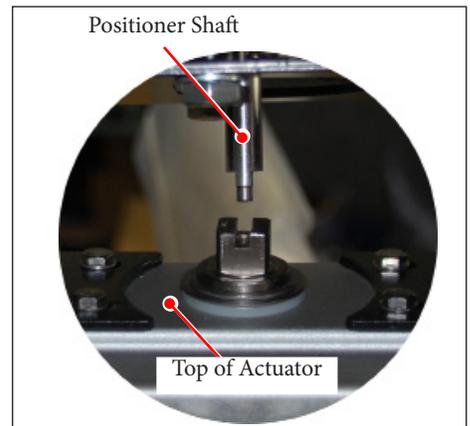


Figure 1.3 - SHAFT ALIGNMENT

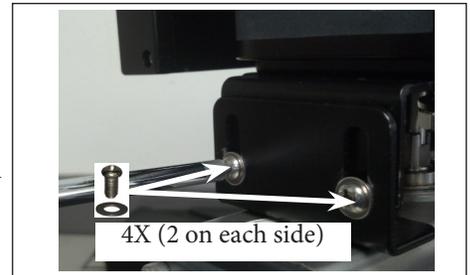


Figure 1.4 - BRACKET SCREWS

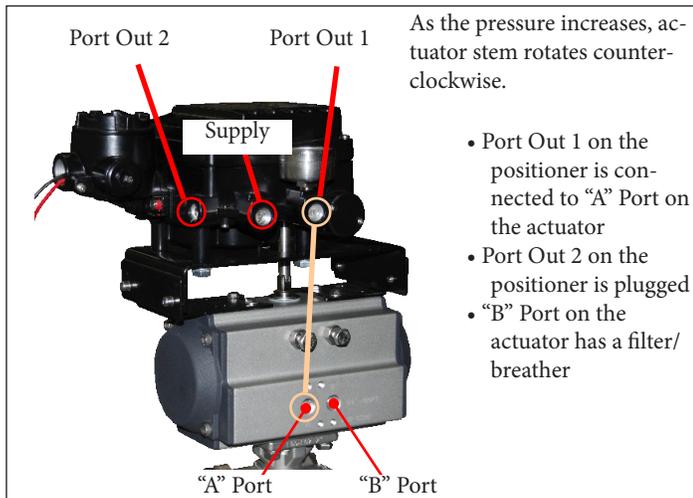
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PNEUMATIC CONNECTIONS:

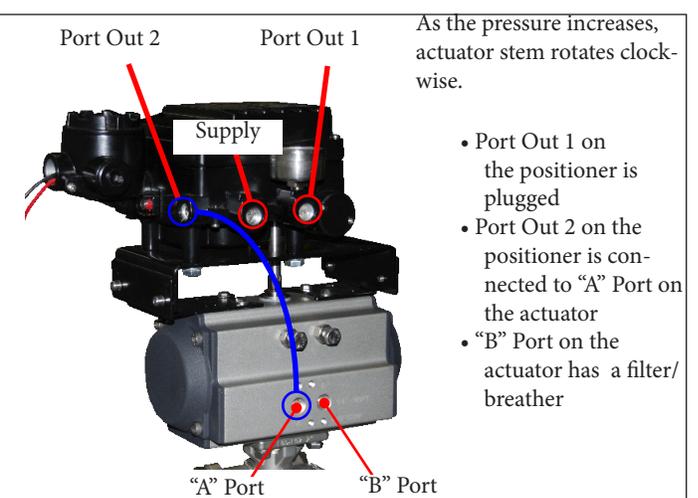
Before referring to the piping connections illustrated below:

1. Purge the pipe to remove any foreign matter.
2. Use clean supply air to remove any humidity and dust.
3. Install the pneumatic connections using best practices.
4. Note the two Port Out locations on the positioner. Each Port Out is clearly marked on the top.
5. Determine the type of actuator - Spring Return or Double Acting.
6. Confirm whether your application requires a counter-clockwise connection (Reverse Action) or a clockwise connection (Direct Action).

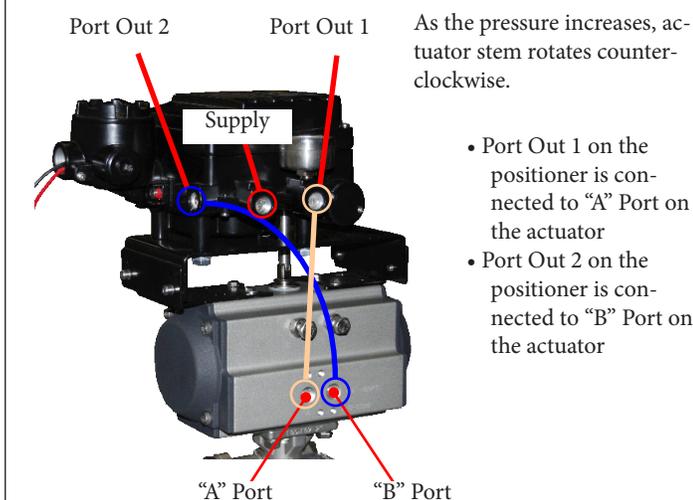
REVERSE ACTION FOR SPRING RETURN ACTUATORS



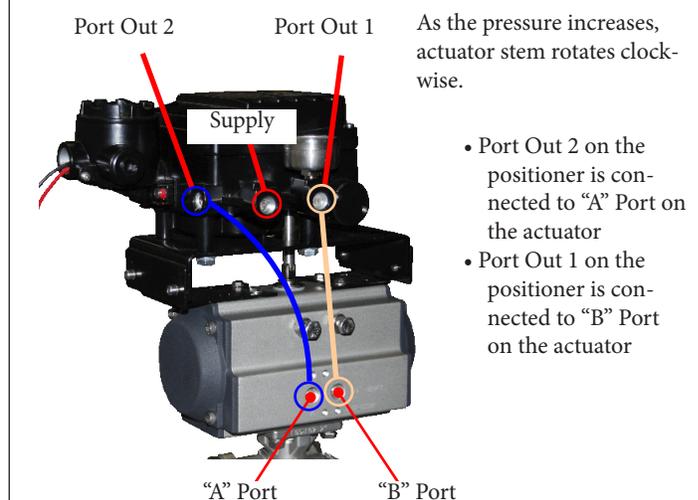
DIRECT ACTION FOR SPRING RETURN ACTUATORS



REVERSE ACTION FOR DOUBLE ACTING ACTUATORS



DIRECT ACTION FOR DOUBLE ACTING ACTUATORS

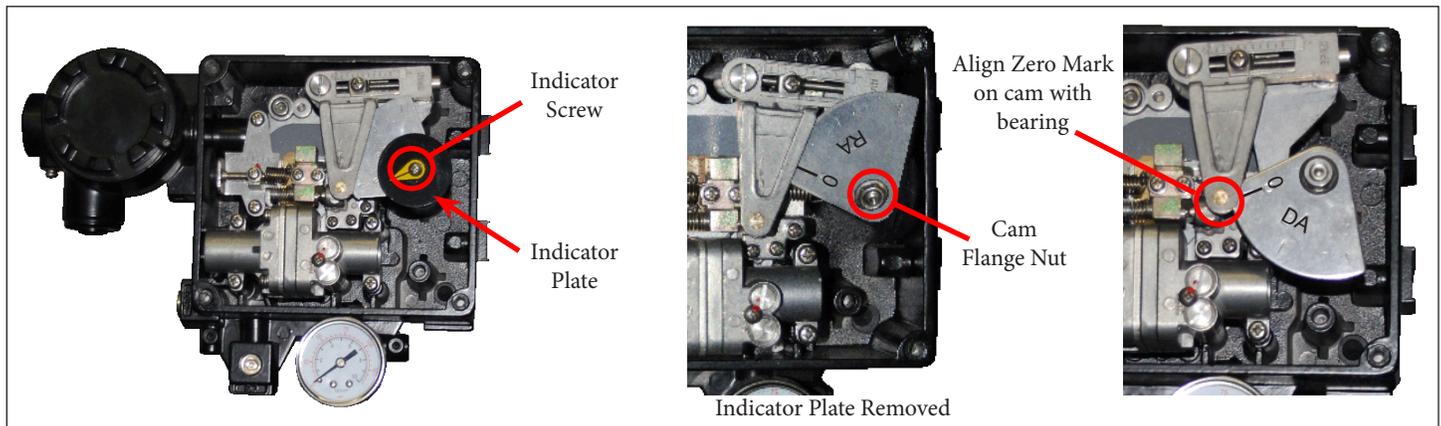


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CALIBRATION: Note that the Mounting & Calibration should be performed in a safe, clean and non-hazardous area. The unit is shipped from the factory pre-calibrated for 90 degree travel. For most applications, the closed position is much more critical than the valve open position. Most attention should be made to the closed valve position. Always start calibration procedure by applying the 0% input signal, then adjusting the zero position.

CAM ADJUSTMENT: The unit is shipped from the factory set for Reverse Action (counter-clockwise) operation. Follow these instructions for setting the unit to Direct Action (clockwise) operation. The Positioner type is etched on the cam as RA for Reverse Action or DA for Direct Action.

1. Remove the (4) captive phillips head screws to remove the cover.
2. Remove the indicator screw and remove the indicator plate.
3. After removing indicator plate, remove the flange nut on the cam.
4. Remove cam and flip it over to the side marked DA.
5. Align the zero mark ("0") on the cam with the center of the bearing as shown below.
6. Tighten the cam flange nut after setting the cam.
7. After cam installation, proceed to adjust zero and span (see next page) before re-installing the Indicator Plate.

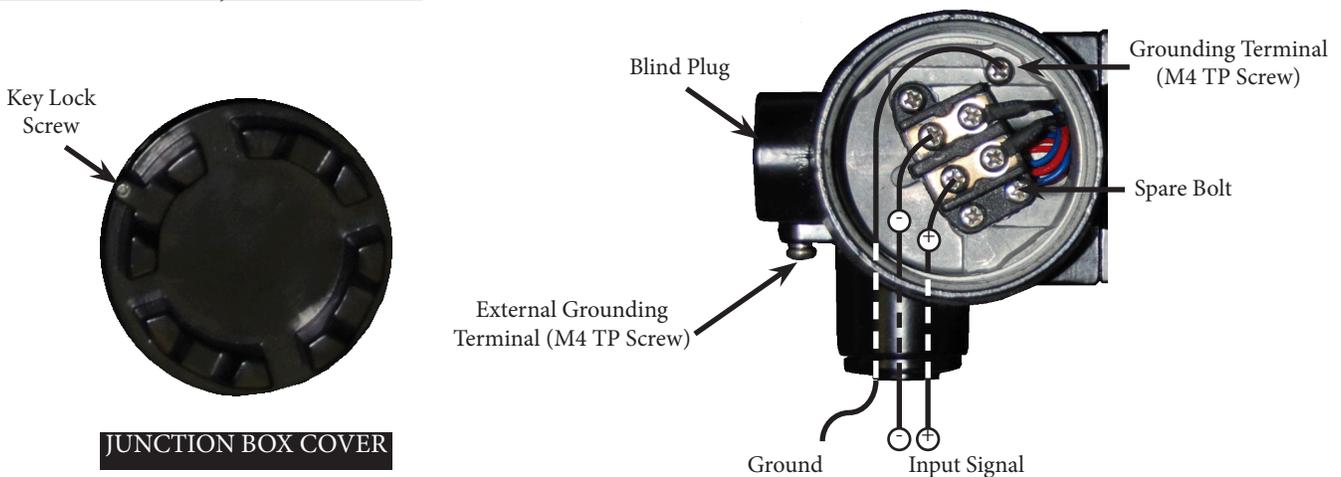


EXACT-XL WITH COVER REMOVED

CAM SET FOR REVERSE ACTION

CAM SET FOR DIRECT ACTION

WIRING DIAGRAM/JUNCTION BOX

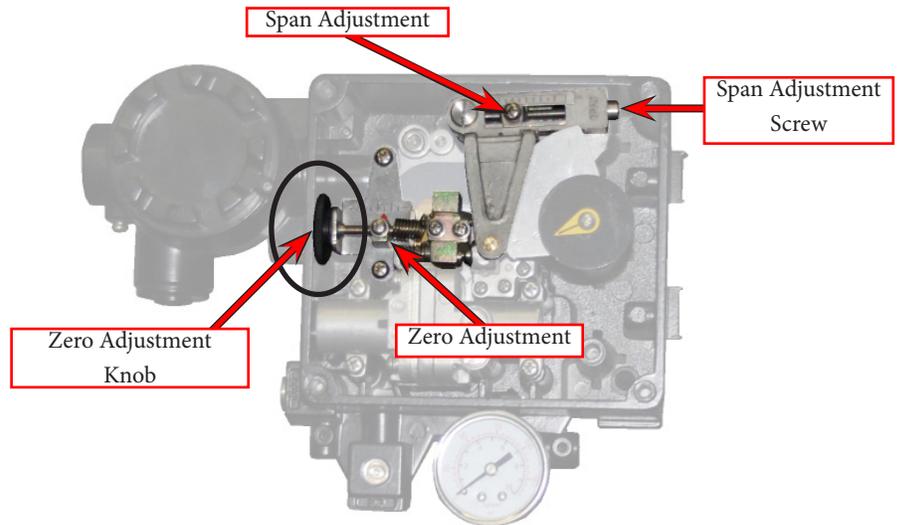


JUNCTION BOX COVER

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ZERO AND SPAN ADJUSTMENT:

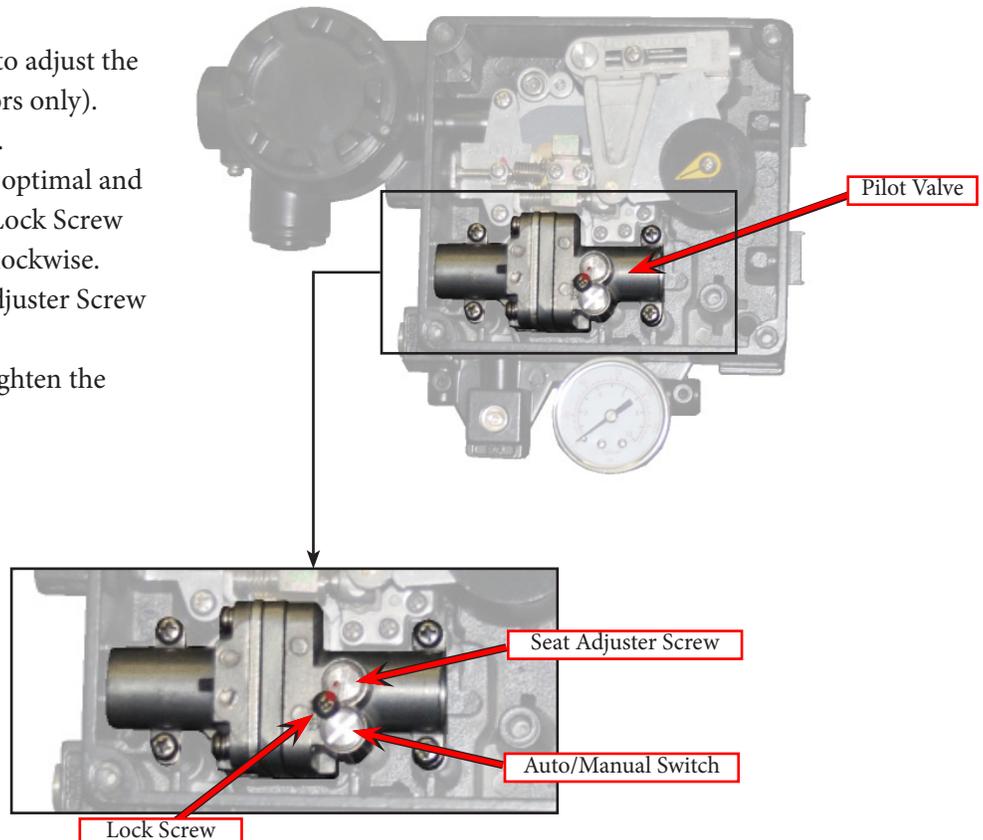
1. Set the input signal to 4 mA while the positioner is at 0%.
2. Turn the zero adjustment knob clockwise or counter clockwise to set the zero position.
3. Set the signal to 20 mA to check the stroke of the actuator.
4. If the stroke does not meet 100%, turn the span adjustment screw clockwise or counter-clockwise until 100% is reached.
5. Set the input signal back to 4 mA and adjust the zero adjustment screw until the starting point is reached.
6. Repeat the process until the desired set point is reached.



PILOT VALVE SEAT ADJUSTMENT

For Double Acting Actuators Only:

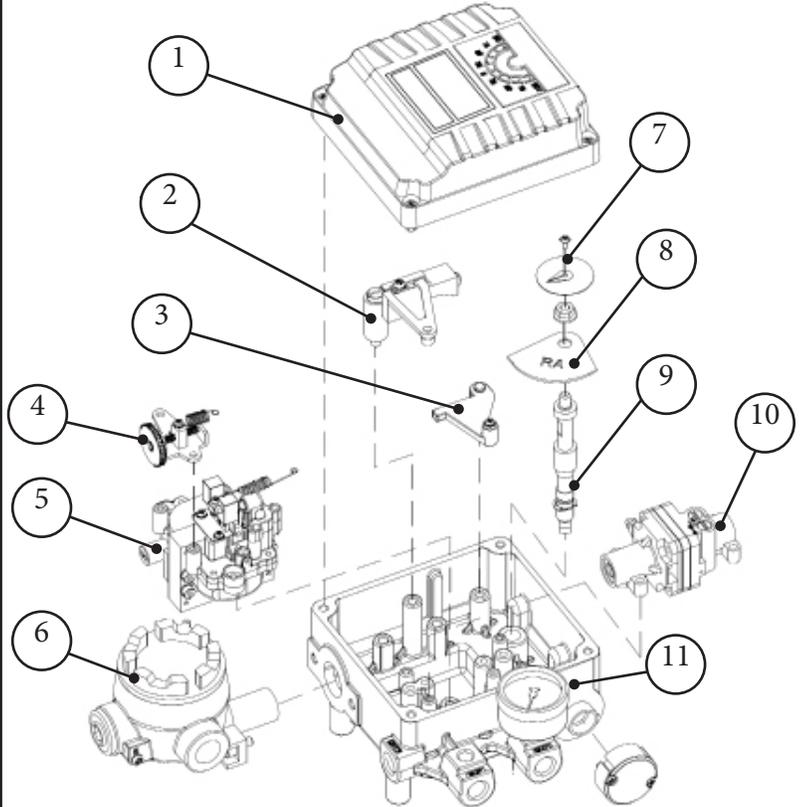
The Pilot Valve seat adjuster is used to adjust the positioner (for double acting actuators only). Normally, no adjustment is required. However, when the sensitivity is not optimal and adjustment is necessary, loosen the Lock Screw and rotate the Seat Adjuster Screw clockwise. If there is hunting, rotate the Seat Adjuster Screw counter-clockwise. When adjustments are completed, tighten the Lock Screw.



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Notes:

MATERIALS OF CONSTRUCTION



Item	Description	Material
1	Cover	Die-cast aluminum
2	Span Unit	Die-cast aluminum
3	Connector	Die-cast aluminum
4	Zero Unit	Stainless Steel
5	Torque Motor	Precision alloy steel
6	Junction Box	Die-cast aluminum
7	Indicator	Aluminum (Sheet)
8	Cam	Stainless Steel
9	NAMUR Shaft	Stainless Steel
10	Pilot Valve	Die-cast aluminum
11	Base Body	Die-cast aluminum