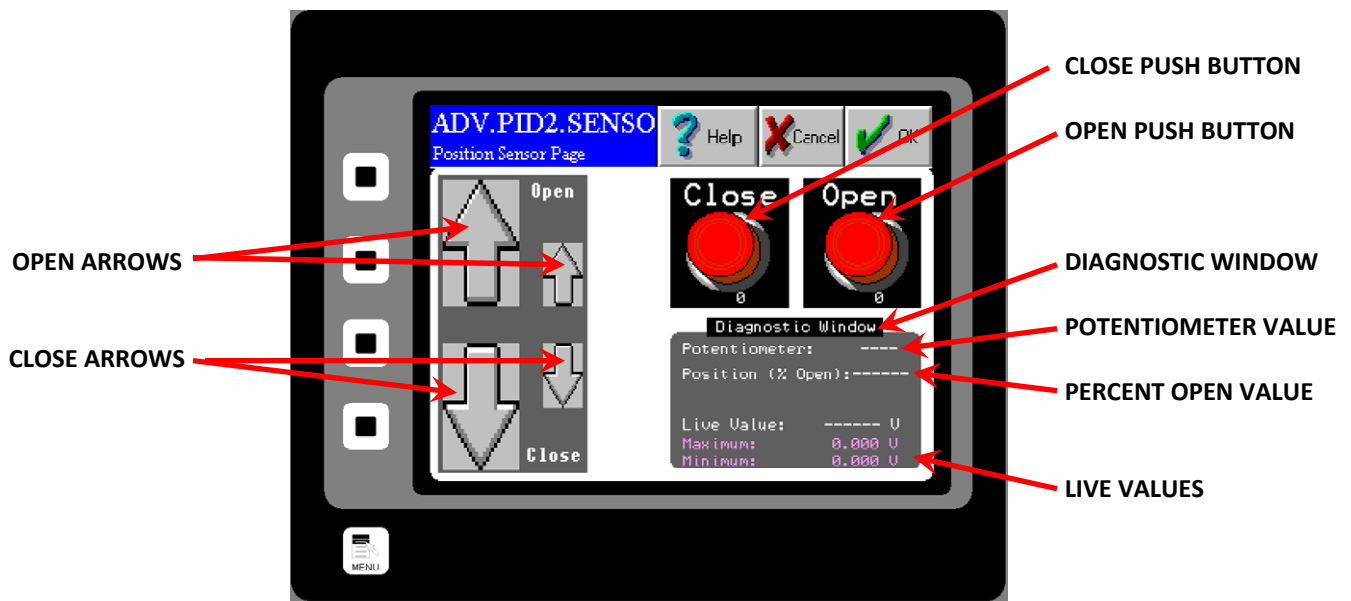


## Stroking the Valve

Stroking the Integrated Control Valve is a way of setting the position sensor output to correspond to the actual stroke or range of travel of the valve's blade. Stroking the valve may be required if the electronics package is replaced or the HMI is reprogrammed, however, new installations will typically include a properly stroked valve that will not need to be adjusted.

Please note that the operating stroke of the valve is 2.5". Mechanical Stops are the actual, mechanical endpoints (fully open and fully closed) of the valve's stroke. In order to properly stroke the valve, the electronic endpoints should be moved from these actual stops to 1% under the defined closed position and to 4% over the defined open position. This will prevent damage to the valve.

To stroke the valve, you must access the Position Sensor page. To access this page press the ADV Button from the TOP (Main Menu) page. Then, press the PID #2 Tuning Button and finally, press the Position Sensor Button. You should now be on the ADV.PID2.SENSOR page seen below.



**Step 1:** Move the valve to the mechanical stops by depressing the Open or Close arrows. **DO NOT PRESS THE RED CLOSE or OPEN PUSH BUTTONS.** The large arrow produces a hard movement command and the small arrow produces a softer movement command. Use the small arrow for all movements towards the stops. Do not use the large arrow against the stops. It should only be used to bring the valve off the stops, if needed. The speed of travel is about the same for both arrows and takes less than a minute for a full stroke. The valve is at the end of its stroke when it quits moving as indicated in the Potentiometer value in the Diagnostic Window. Confirm the end of the stroke by moving off and then back on to the mechanical stop.



- Step 2:** Check your Percent Open values in the Diagnostic Window. The Percent Open values should read **+104% ( $\pm 0.4\%$ )** against the open stops and **-1% ( $\pm 0.2\%$ )** against the closed stops. The Maximum Live Value should be 2.0V,  $\pm 0.25V$  the Minimum Live value should be 0.5V,  $\pm 0.25 V$ .
- Step 3:** If conditions described in Step 2 are met, then the valve is properly stroked and the valve position is correctly read into the system. If the conditions described are not met, continue to Step 4.
- Step 4:** Move the valve to the fully open position against the mechanical stops as described in Step 1 and press the Open Push Button. ***Please note that the Open Push Button and Open Arrows are not the same button!*** This will set the Percent Open Value to 100% in the Diagnostic Window.
- Step 5:** Close the valve to the fully closed position against the mechanical stops as described in Step 1 and Closed Push Button. ***Please note that the Closed Push Button and Closed Arrows are not the same button!*** You have now set your 0% and 100% values to the mechanical stops, so you must now set the Operating Stroke of the Valve
- Step 6:** Since you are on the Closed mechanical stop, move the valve off the mechanical stop by 1%. You are now at the defined Closed Valve position. Again, press the Close Push Button. The Percent Open value should now be 0%. If you move the valve back to the mechanical closed stop, the value should read -1.0%.
- Step 7:** Now move the valve to the fully open position as described in Step 1. Ease it against the fully open mechanical stop The Percent Open value should be 100%. Back the valve off of the mechanical stop until the Percent Open value is 96%. You are now at the defined Full Open position. Press the Open Push Button. The Percent Open value should now be 100%. You may check by easing the valve back to the mechanical stop and confirm a reading of 104%. To verify that the stroking of the valve was successful, check your values against those specified in Step 2.

**Helpful Hint:**

If the valve becomes, inadvertently stuck against the mechanical stops, it can be freed by removing the access cover and with a large screwdriver, moving the large timing belt pulley in the direction required to free the valve. There is a direction arrow on the pulley indicating which direction causes the valve to open. If the valve is stuck in the open position, then the pulley should be turned in the closed direction. Do the opposite if stuck in the closed position. If you are unsure of the position, it may be determined by the Mechanical Position Indicator on the side of the valve.