Calibration of ELMA Actuator

This procedure trims the actuator circuit board to the Low and High ends of the input control signal.

Prerequisites

1. Locate and lock our power source to the pump motor.
2. Verify and bleed off any pressure in the discharge piping of the pump.
3. Verify correct wiring to the Elma Actuator and optional remote station according to the supplied wiring diagram in the documents package.
4. Verify that there is power to the Elma Actuator.
5. Remove the coupling guard and cover.
6. Remove the Elma Actuator cover by removing the seven screws.
7. Remove the top cover assembly from the gearbox by removing the four screws.
8. Visually verify that the piston is in the full forward position by manually rotating the pump motor shaft.
9. Reassemble the top cover assembly to the gearbox.

Presets

1. If an optional Remote Operator Station is being used then place the auto\manual switch to the AUTO position.
2. If an optional Ratio control is being used then position the Ratio Potentiometer to 100%.
3. Place the three DIP switches to the open position which are located on the Elma circuit board.

   # Place the auto\manual override switch located on the ELMA Actuator to the "Manual" position.

   # Using a voltmeter position the negative lead to TB1-1 and the positive lead to TB1-3

   # With the voltmeter in a VDC mode measure and record the DC voltage readings with an input signal of 4 mA and then 20 mA.

   Example: 4mA = 1VDC
   20mA = 5VDC

   # Remove the Input signal. This can be accomplished by either shuting off the signal source or by disconnecting the common side of the signal at TB1-1.

   # Manually adjust the pump stroke length setting to 0% indicated on the duo-dial.

Using a voltmeter in VDC mode place the negative lead to TB1-1 and the positive lead to the wiper terminal (black wire) of the feedback potentiometer.
Adjust the LO Cal trim pot, located on the ELMA circuit board, until the voltage matches that recorded earlier at 4mA input.

Manually adjust the pump stroke length setting to 100% indicated on the duo-dial.

Adjust the HI Cal trim pot, located on the ELMA circuit board, until the voltage matches that recorded earlier at 20mA input.

Reconnect the Input signal and place the auto\manual override switch, located on the ELMA Actuator to the "Auto" position.

Verify proper operation by changing the Input signal to both LO (4mA) and HI (20mA). Verify that the duo-dial travels to both ends and stops at 0% and 100%.

Verify that the HI and LO LED lights go out when the actuator stops at either end of the stroke adjustment.

Fine adjustment to the HI and LO trim pots may be required.

REMOTE AUTO/MANUAL CALIBRATION (Optional)

This procedure trims the manual control potentiometer to the low and high ends of the actual input control signals.

Place the remote selector switch, on the remote station, to the "Manual" position.

Place the auto/manual override switch located on the pump to "Auto".

Set the remote "Percent Stroke" control potentiometer at 0%.

The actuator will automatically adjust to 0% stroke.

Adjust the "LO" trim potentiometer on the small circuit board mounted on the back side of the percent stroke potentiometer so that the duo-dial indicator reads "0" and the "LO" LED goes out.

Set the remote "Percent Stroke" control potentiometer at 100%.

The actuator will adjust to 100% stroke.

Adjust "HI" trim potentiometer on the small circuit board mounted on the back of the percent stroke potentiometer so that the duo-dial indicator reads 100 and the

"HI" LED goes out.

METER READOUT CALIBRATION

This procedure trims the current output to the remote meter.

With the pump at 0% stroke, adjust the meter "Zero" potentiometer on the circuit board for a zero meter indication.

With the pump at full stroke, adjust the span potentiometer on the circuit board for 100% meter indication.