CALIBRATION PROCEDURE
PNEUMATIC SECTION

NOTE: The VRC Positioner is calibrated at the factory for 0–90 degree rotation. Small adjustments may be needed due to mounting or differences in actuator rotation.

PRIOR TO CALIBRATING:

NOTE: REF. PAGE 6A FOR DRAWINGS

1. Tools required:
   Regular screwdriver (for removing HSG cover)
   For VE models: 4–20MA calibrator
   For VP models: 3–15 psi signal source

2. This procedure assumes the positioner is correctly mounted to an actuator and supply pressure is on.

3. For VE models, verify the I/P module is calibrated by referring to page 7 of these instructions.

4. For CLOCKWISE and COUNTERCLOCKWISE orientation, the front of the positioner is where the supply air port is located. Ref. figure 3.

5. DIRECT and REVERSE ACTING. Determine which positioner response you require:
   DIRECT ACTING–is when the actuator is required to rotate Counterclockwise with Increasing control signal.
   REVERSE ACTING–is when the actuator is required to rotate Clockwise with increasing control signal.

After determining your requirement, verify the positioner feedback cam is installed correctly for your application. A "D" is molded on one side of the cam and on the opposite side an "R" is molded.
–For DIRECT ACTING the "D" side should be facing up.
–For REVERSE ACTING the "R" side should be facing up.

CALIBRATION PROCEDURE

ZERO ADJUSTMENT

NOTE; ZERO is defined as the START point of actuator rotation.

1. With 3 psi signal pressure applied, verify the actuator is at it's start point by manually deflecting the Balance Beam toward the front of the positioner housing while observing the Feedback Cam and Bearing Holder arrow (ref. figure 3A). The arrow should be pointing at the "0" on the Feedback Cam. If not, turn off supply air and reposition the Cam by removing the Wing Nut and unsplining the Cam. Reposition the Cam as required. Reinstall Wing Nut and turn supply air on.

2. Apply 3 psi signal pressure.

3. Rotate the ZERO Thumbwheel as required
   –Clockwise rotation moves the Zero point upscale on the Cam (toward 90 degrees)
   –Counterclockwise rotation moves the Zero point down scale on the Cam (toward 0 degrees)

NOTE: The Zero Thumbwheel is designed to give a feel for the amount of adjustment being made. Each click of the Thumbwheel is a .5 degree adjustment change.

CAUTION: Do not force the rotation of the Zero Thumbwheel, the Thumbwheel will rotate freely throughout it's adjustment range and forcing the rotation could damage the adjuster.

4. Zero is adjusted properly when increasing signal pressure from 3 psi to 3.5 psi causes the actuator to rotate away from it's start position (away from 0). Repeat step 3 if required.

SPAN ADJUSTMENT

NOTE: SPAN is defined as the full travel position of the actuator.

1. Apply 15 psi signal pressure to the positioner.

2. Determine if more or less actuator rotation is required.

NOTE: A quick check to verify if the actuator is against the actuator stops is to manually deflect the Balance Beam away from the front of the positioner. If the actuator continues to rotate when the Balance Beam is deflected, an increase in Span adjustment is required.

3. Rotate the SPAN Adjuster as required.
   – Clockwise rotation of the adjuster decreases SPAN.
   –Counterclockwise rotation of the adjuster increases SPAN.

NOTE: The Span Adjuster is designed to give a feel for the amount of adjustment being made. Each click of the adjuster is approximately 1 degree of change at the 90 degree setting.

4. SPAN is adjusted properly when decreasing signal pressure from 15 psi to 14.5 psi causes the actuator to move away from the actuator stops (away from 90 deg.). Repeat step 3 if required.

5. Recheck Zero addjustment.

CALIBRATION PROCEDURE
PNEUMATIC SECTION

NOTE; Figure 3A shows the correct relationship for the Cam and Bearing Holder for a DIRECT ACTING application when the actuator is at it's start point of rotation (3psi applied).

FIG. 3A

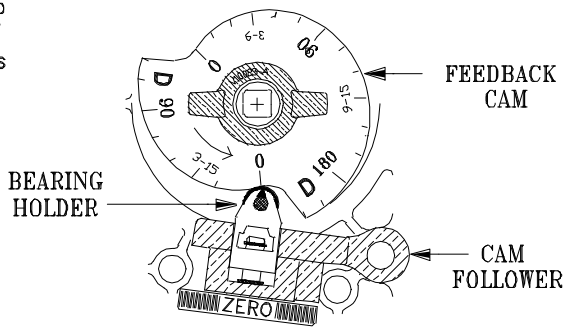
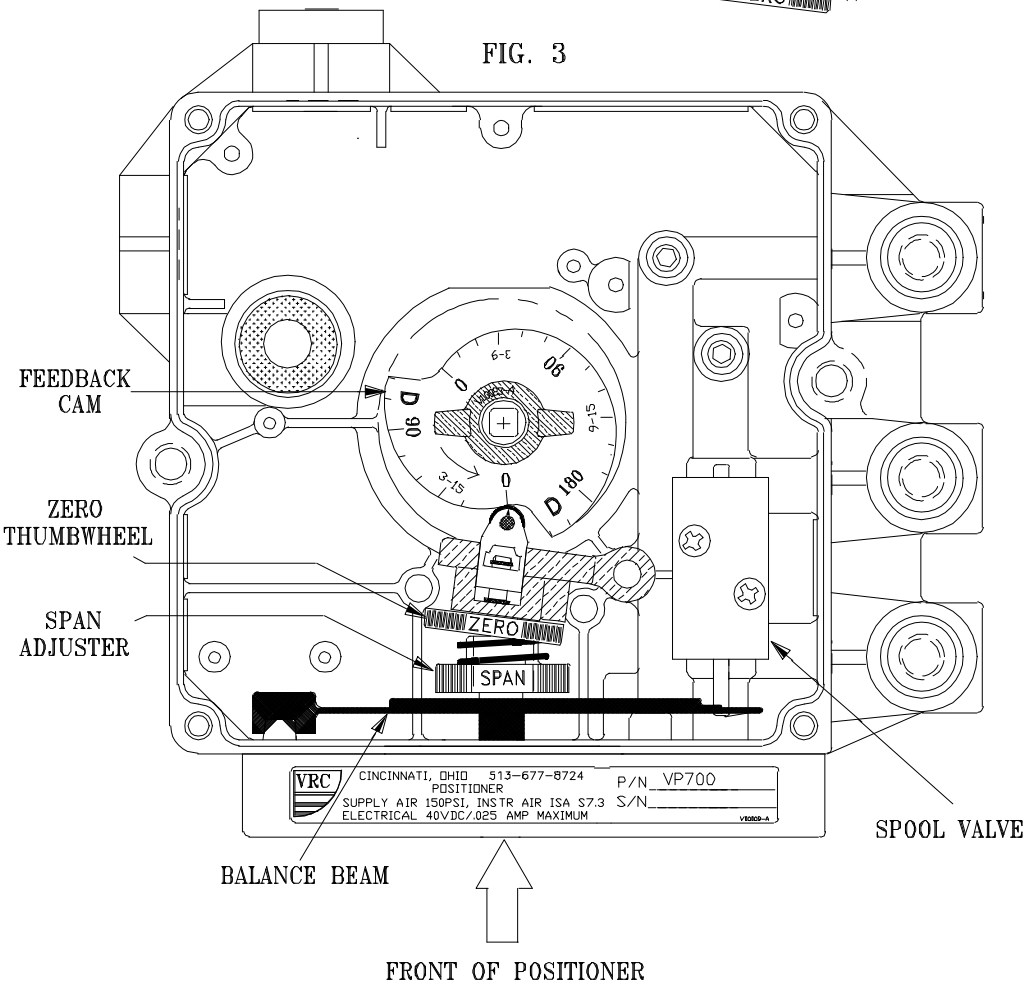


FIG. 3



VK02 I/P MODULE
CALIBRATION PROCEDURE

CALIBRATION PROCEDURE (POSITIONER MODEL VE)

The VK02 I/P Module comes from the factory pretested and fully calibrated and should not need recalibration on new installations. If the unit appears to need calibration check all pipe fittings and connections for air leaks prior to performing the calibration proceedure.

NOTE: To calibrate the **I/P MODULE** the following is required:

a. 0–30 PSI pressure gauge in **SIGNAL PORT**
b. 4–20 MA calibrator (mim. 12volt output)
c. Small regular screwdriver
d. 3/16 Allen wrench

Reference figure 4.

BIAS PRESSURE ADJUSTMENT

This adjustment ensures a proper mechanical relationship between the **CONTROL NOZZLE** and the teflon coated **DIAPHRAGM**.

1. With supply pressure applied and NO electrical signal applied, check the signal pressure gauge. The gauge should read 2.5 to 3.0 PSI.

2. If required, using the 3/16 Allen wrench, adjust the **BIAS PRESSURE SCREW** to obtain 2.5 to 3.0 PSI. Clockwise decreases pressure, counterclockwise increases pressure. Typically only small adjustments will be required.

NOTE: If the pressure does not adjust or there is no pressure showing on the SIGNAL PRESSURE GAUGE there may be an air leak, check to ensure the SIGNAL PORT has been plugged and all o-rings are installed, also check for any leakage at the gauge.

CONTINUING TO ADJUST THE BIAS PRESSURE SCREW UNDER THESE CONDITIONS CAN DAMAGE THE MODULE.

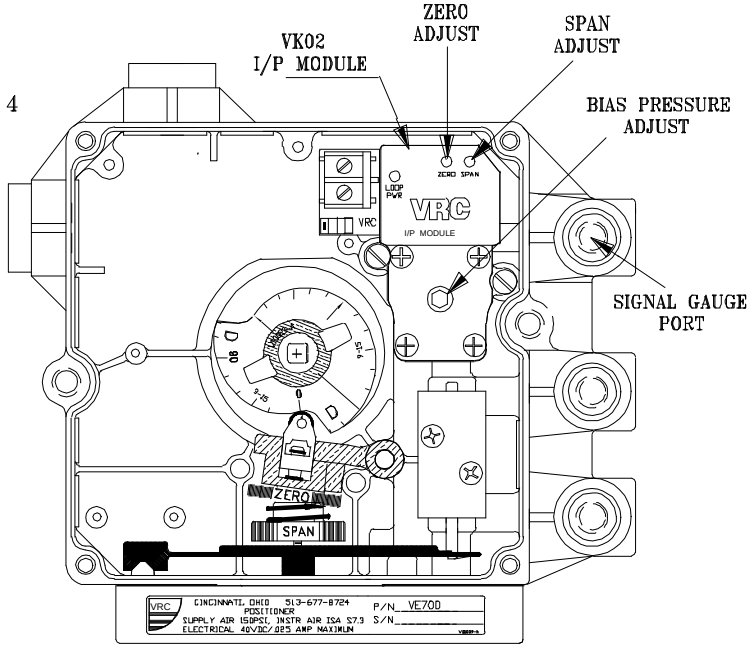
ZERO/SPAN ADJUSTMENT

1. With supply pressure still on, apply 4 milliamps to the **I/P MODULE**, adjust the **ZERO POT** for 3 PSI.

2. Apply 20 milliamps, adjust the **SPAN POT** for 15 PSI.

3. ZERO and SPAN interact, repeat steps 1 and 2 and readjust as required.

FIG. 4



POSITIONER
DIMENSIONAL DRAWING