Summary

Range and zero setting is done using the positioner adjustment. In case of blockage due to contamination the air bleed can be adjusted externally without detaching the unit. The I/P unit may be detached from the positioner leaving the diaphragm assembly attached to the positioner.

CONTENTS

1. Description of Operation

Refer to fig.1: Supply air enters through filter 'A'. It passes through the restriction 'B' into the diaphragm chamber 'C'. The chamber 'C' is exhausted to cover the enclosure through the nozzle 'D'. The exhaust from the nozzle is restricted by the flapper 'E' which is pressed against the nozzle exhaust by the force of the coil 'F'. The force is produced by the 4-20 mA current reacting on the magnetic field produced by the magnet 'G'. The restriction of the nozzle by the flapper produces a back pressure in the chamber 'C', which acts as the control signal pressure for the positioner.

2. Operating Conditions

2.1 The I/P unit should be supplied with clean, dry, oil free air.

2.2 Supply pressure should be regulated and between 60-80 psi (4-5.5 bar). For lower pressure consult Kinetrol.

2.3 Temperature range -20 to 80ºC.

3. Setting Range and Zero

Range and zero are normally adjusted on the positioner. Range may be adjusted on the I/P using the preset potentiometer, however this is intended for factory setting and it is not necessary for the user to adjust it.

To adjust range and zero remove the positioner cover and follow adjustment instructions for the positioner (see Positioner I.O.M. TD 106 which is available to download from www.kinetrol.com).

4. Air Bleed Adjustment

If unit has been contaminated with oil etc, the air bleed screw can be removed for cleaning. Reset the unit with the 80 psi air supply and the 20 mA signal connected, then carefully open the needle valve until the positioner moves to 90º fully open.

5. Removal of I/P Unit from the Positioner (Refer to Fig.2)

I/P unit is detached from the positioner as a unit by removing the screws 'A'. The diaphragm assembly remains attached to the positioner. Electrical connections and air supply must be removed before detaching the unit.

6. Disassembly and Inspection of Magnet/Coil Assembly

6.1 Detach cover by removing two attachment screws. Detach magnet/coil assembly from I/P base by removing two fixing screws 'B'.

6.2 It is very important that the coil is COMPLETELY free to move in the magnet. (The force produced by the coil at 20 mA signal is only about 10 gm).

6.3 To check for free movement detach magnet/coil assembly from base as in '4' above. Stand assembly on flat surface (non-magnetic) with coil and flapper upwards. Apply 4mA signal to terminals; coil should rise by 1-2mm (full travel). Remove 4mA signal; coil should fall back to bottom of travel.

6.4 If coil is not free to move, the magnet may be detached from coil mounting block. Magnet gap should be checked for dirt or swarf. Great care should be exercised in refitting mounting block and coil to magnet.

FIGURE 1. I/P CONTROLLER POSITIONER DIAGRAMATIC

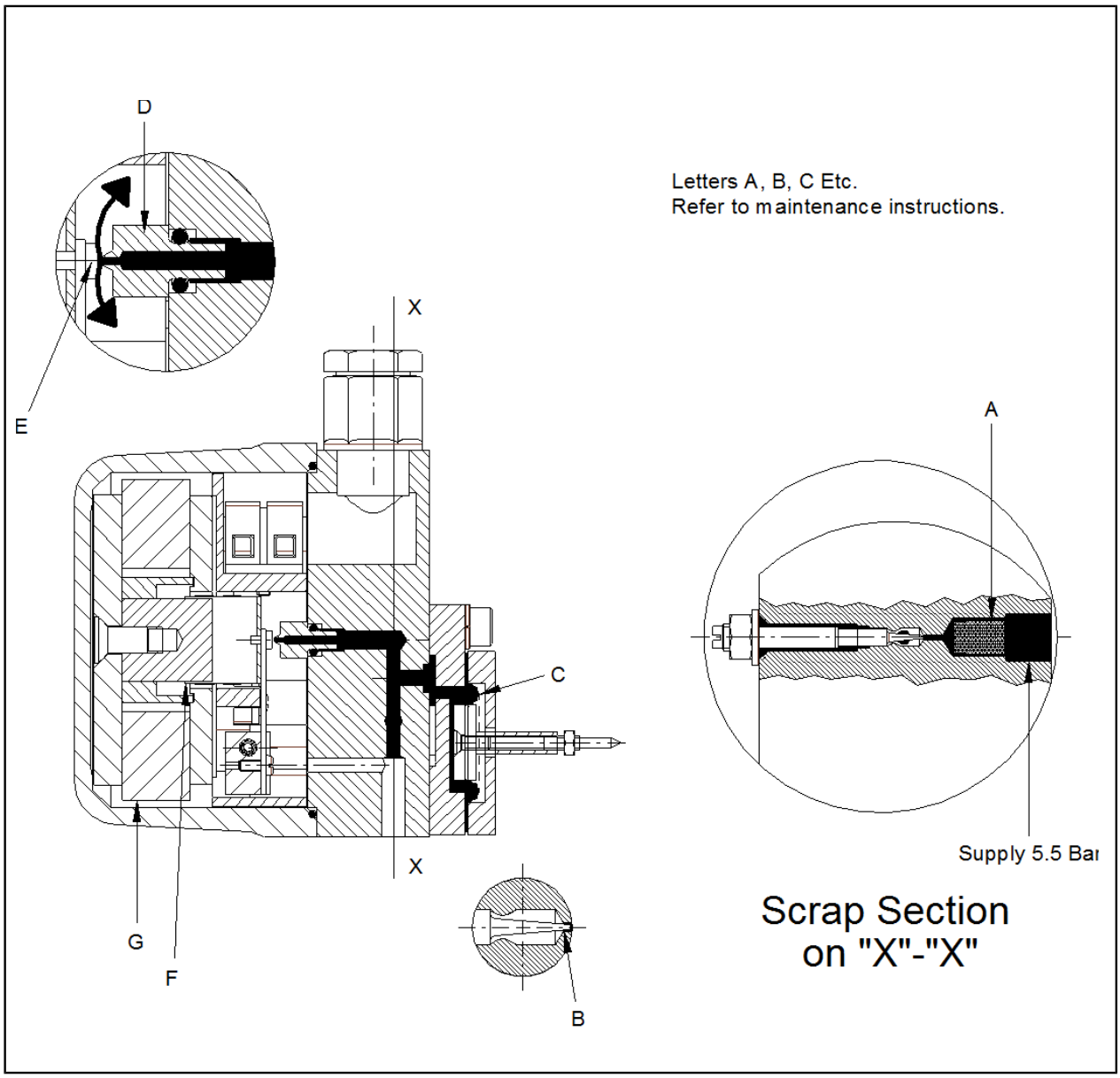

FIG 2. I/P CONTROLLER ASSEMBLY