

**J R U**  
**AIR FILTER CUM PRESSURE REGULATOR -**  
**FPRTB SERIES**

**OPERATION AND MAINTENANACE**  
**INSTRUCTION MANUAL**

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# OPERATION AND INSTRUCTION MANUAL

## FOR “JRU” AIR FILTER CUM PRESSURE

### REGULATOR – FPRTB SERIES

#### GENERAL

“JRU” FPRTB Series Air Filter Cum Pressure Regulator are commonly used to regulate the Instrument Air and to Filter down the Dust particles and Moisture. The most common installation point is near the Instrument to which the Air Filter Regulator is going to be used as an Accessory.

The Air Filter Regulator is designed for maximum pressure of 18 Kg/cm<sup>2</sup> and a maximum operating temperature of 80°C. though in most of the Plants operating conditions do not exceed the above limitations, it is requested to take special care, so that the input pressure and the temperature do not exceed the above limits.

#### Preliminary Steps

1. Unpack Carefully.
2. Record Serial Nos. and other name plate details for future reference.
3. Verify the Model No.
4. Check the nuts, bolts, clamps and pressure gauges if ordered.

#### Principle of Operation: Refer Fig.

The primary air through the inlet part passes through the filter element, leaving down the contaminants in the bowl. When the knob is adjusted suitably, the spring acts on the diaphragm which in turn actuates the main valve to allow the pure secondary air at a particular pressure to the outlet. The output pressure is fed back to the diaphragm through the feedback hole to push back the diaphragm for maintaining the set pressure. The main valve is supported between the reliefs Valve and the main valve spring eliminating the need for stem guiding. Toggle action between main valve and relief valve completely eliminates the alignment problems and thus erratic output pressure.

The Regulator is usually supplied with two mounting Bolts, nuts and a clamp. Though the Regulator is designed to operate at any angle, VERTICAL mounting is preferred. Connect the input air line to the Regulator port marked "IN". The other 2 ports are outlets. Check the leakage at the pipe connections. See the drain valve for closed position. Supply the air to the inlet port and adjust the knob to get the required outlet pressure. Ensure that the inlet pressure is always at least 1kg/cm<sup>2</sup> more than the outlet pressure.

### **Maintenance: Refer Fig**

The standard bowl capacity is 200 cc which do not require daily draining under normal working conditions. In plants where the compressed air carries more than the normal limit of Moisture, it is recommended to drain often. However, this depends upon the concerned plant operating conditions and the frequency of opening the drain valve has to be fixed in view of the above.

In order to avoid operations of the adjusting screw by unscrupulous persons, it is recommended to use the CHECKNUT provided for locking the top screw.

Usually, JRU Air Filter Regulators are trouble free instruments. However after long period of service, servicing will be required.

1. Remove the Regulator bolts. (71) and Bowl (718)
2. Remove the castings separately. (703, 709, 718)
3. Remove the diaphragm assembly. (706)
4. Remove the baffle and take out the filter. (716) & Filter Guard (715)
5. Remove the spring holder by  $\frac{3}{4}$ " spanner (712)
6. Remove the main valve and main valve spring separately (710, 711)
7. Clean all the parts and wipe with clean cloth.

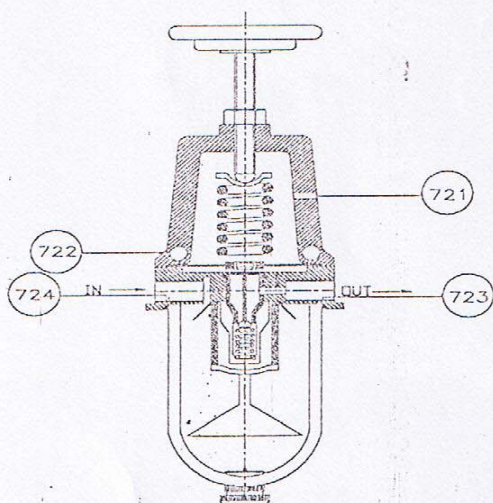
8. If the main valve seating portion is damaged change the main valve with a new one.
9. If the valve seating of AF Centre (707) has deep marks or is out of shape change it with a new one.
10. Change the AF centre small 'O' ring (708) with a new one.
11. Press fit the AF Centre (707) into centre casting (709) and put the new small 'O' ring
12. If the 'O' ring Part No. (717) is damaged, replace with a new one.
13. Check the diaphragm and the relief valve seating. If required replace with a new diaphragm assembly.
14. Assemble back the parts and check the instrument performance.
15. Tighten the Drain Valve Nut (725) in Drain Valve (727) (M) if leak present.

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- 701. KNOB
- 702. LOCK NUT
- 703. TOP PIECE
- 704. KNOB SEAT
- 705. MAIN SPRING
- 706. DIAPHRAGM
- 707. A F CENTER
- 708. SMALL 'O' RING
- 709. CENTER PEICE
- 710. MAIN VALVE
- 711. MAIN VALVE SPRING
- 712. SPRING HOLDER
- 713. FILTER
- 714. FILTER FIXING PLATE
- 715. FILTER GUARD
- 716. BAFFLE
- 717. BIG 'O' RING
- 718. BOWL
- 719. BOLT
- 720. DRAIN VALVE(F)
- 721. VENT HOLE
- 722. MOUNTING HOLE
- 723. OUTPUT PORT
- 724. INPUT PORT
- 725. DRAIN VALVE NUT
- 726. DRAIN VALVE 'O' RING
- 727. DRAIN VALVE(M)
- 728. DRAIN 'O' RING

