CLASS F & CLASS F SPO Pressure Regulating Valves Installation and Maintenance Instructions.

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(A) **Symptom:** Outlet pressure setting rises slowly up to inlet pressure and regulator does not respond to adjustment.

Possible cause: Seat leakage due to foreign matter and/or damage to Body Seating or Valve Disc (2).

 $\pmb{Remedy:}$  Clean out as necessary and renew Valve Disc (2).

(B) Symptom: Leakage past Stop Valve when fully closed.

Possible cause: Seat leakage due to foreign matter and/or damage to Body Seating or Valve Disc (2).

Remedy: Clean out as necessary and renew Valve Disc (2).

(C) **Symptom:** Leakage from Vent Hole in Spring Chamber (12).

Possible cause: Failure of the Low Pressure Seal (9) or loose internal valve assembly.

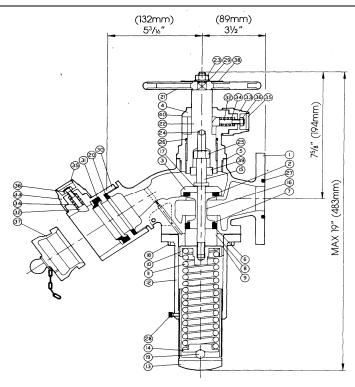
**Remedy:** Fit new Low Pressure Seal (9), tighten internal valve assembly.

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# **SPECIFICATION**

N°.	PART	MATERIAL	N°.	PART	MATERIAL
1	BODY	BRONZE	22	HANDWHEEL STEM	ALUMINIUM BRONZE
2	VALVE DISC	HYCAR	23	HANDWHEEL NUT	BRASS
3	DISC HOLDER	BRONZE	24	HANDWHEEL STEM BALL	STAINLESS STEEL
4	BONNET	BRONZE	25	VALVE STEM NUT	BRASS
5	BONNET JOINT	NAF	26	HANDWHEEL STEM 'O' RING	RM 0395-30
6	HIGH PRESSURE SEAL	AM 75	27	BODY 'O' RING	BS SIZE 329
7	H.P. SEAL RING	CHROMIUM PLATED BRASS	28	LOCK SCREW	STAINLESS STEEL
8	DISTANCE PIECE	ALUM INIUM B RONZE	29	HANDWHEEL WASHER	BRASS
9	LOW PRESSURE SEAL	NITRILE RUBBER	30	ADAPTOR BODY	BRONZE
10	PISTON	BRONZE	31	COUPLING WASHER	RUBBER
11	SPRING	ZINC PLATED STEEL	32	COUPLING BOLT	BRASS
12	SPRING CHAMBER	BRONZE	33	QUICK RELEASE CAP	BRASS
13	ADJUSTING SCREW	BRONZE	34	COUPLING SPRING	PHOSPHOR BRONZE
14	ADJUSTING SCREW PLATE	ALUM INIUM BRONZE	35	SCR EWED CAP	BRASS
15	VALVE STEM	ALUM INIUM BRONZE	36	PHILIDAS NUT	BRASS
16	VALVE STEM SLEEVE	ALUM INIUM BRONZE	37	CAP AND CHAIN	BRONZE
17	VALVE STEM JOINT	NAF	38	NAMEPLATE	ALUMINIUM
18	SETSCREWS	STAINLESS STEEL	39	RETAINING NUT	ALUMINIUM BRONZE
19	ADJUSTING SCREW BALL	STAINLESS STEEL	40	POSITION INDICATOR	ALUMINIUM
20	WASHER	RUBBER			
21	HANDWHEEL	MALLEABLE IRON			
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#### OPERATING PROCEDURE

#### **CLASS F**

#### Installation

- 1. Newly installed pipework should be flushed through to remove foreign matter before the Regulator is fitted.
- 2. Fit the valve onto the mating flange, ensuring that the flange faces are clean and that the inlet and outlet connections are completely free from packing materials.
- 3. For ease of operation the Regulator should be installed in the upright position with the Handwheel uppermost.
- 4. Provide adequate space above and below the Regulator for adjustment and dismantling purposes.
- 5. Under severe frost conditions, the Regulator should be suitably protected to prevent any residual water in the Regulator from freezing and adversely affecting its operation.

### **Setting Procedure**

- 1. Ensure that the Regulator Stop Valve element is fully closed.
- 2. Connect branch pipe to Regulator (instantaneous connection).
- 3. Close branch pipe Stop Valve or Cock.
- 4. Open the Regulator Stop Valve element slowly (anti-clockwise rotation of wheel) until fully open to mechanical stop point. Do **NOT** use force when stop point is reached.
- 5. Note the set pressure on the Pressure Gauge.
- 6. To increase the set pressure, remove the Adjusting Screw Lock Screw (28) and rotate the Adjusting Screw (13) **clockwise** (as viewed from below), to decrease the set pressure rotate **anti-clockwise**.
- 7. Open branch pipe Stop Valve or Cock slightly to create a small flow of water, then close again and check accuracy of setting.
- 8. Replace Adjusting Screw Lock Screw (28) and tighten.

### **Removing The Branch Pipe**

- 9. Fully close the Regulator stop valve element (clockwise rotation of Handwheel).
- 10. Slowly open the branch pipe stop valve or cock and carefully exhaust any pressure that may be trapped in branch pipe until the pressure gauge reads zero.
- 11. Disconnect branch pipe from Regulator. The Regulator is now set and ready for use.

# **Operation**

Under fire fighting conditions, the hose is first connected to the instantaneous connection in the normal way. The hydrant stop valve element must then be opened fully (by rotating the Handwheel in the anti-clockwise direction) to the mechanical stop point.

Thereafter, the pressure reducing valve element takes over and controls the pre-set outlet pressure supply to the hose nozzle. To close the Regulator, rotate the Handwheel in the clockwise direction.

# **CLASS F SPO**

# **Installation And Setting Procedure**

Prior to the installation **it is important that the position indicator shows that the valve is closed**. If not, close the valve by rotating the Handwheel in the clockwise direction. Once this is done installation and setting can be carried out in the same way as for the Class F.

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# **Regulated Pressure Operation**

Under fire fighting conditions, the hose is first connected to the instantaneous connection in the normal way. The hydrant stop valve element must then be opened by rotating the Handwheel in the anti-clockwise direction until the first stop position is achieved. Check that the position indicator shows the valve in the open position marked "**HOSE POSITION**".

Thereafter, the pressure reducing valve element takes over and controls the pre-set outlet pressure supply to the hose nozzle. To close the valve, rotate the Handwheel in the clockwise direction.

# **Unregulated (or High Pressure) Operation**

Open the valve until the first stop is reached. Twist the Quick Release Cap either to the right or left (it may be necessary to turn back the Handwheel ¼ turn to release the lever), then continue opening the valve until the second stop position is reached. The position indicator will show "**FOAM POSITION**".

The valve is now full open and will achieve downstream pressures very close to the available upstream pressure.

To close the valve, rotate the Handwheel in the clockwise direction until closure is effected. The Quick Release Cap will automatically click back into its first stop position during closure.

# Maintenance

#### Class F and Class F SPO

It is desirable to operate the regulator periodically to ensure efficiency. In addition, checks should be made, at least once a year, on the condition of the following components:

No.	Part description	Part description	
2	VALVE DISC	26	HANDWHEEL STEM 'O' RING
5	BONNET JOINT	31	COUPLING WASHER
6	HIGH PRESSURE SEAL	32	COUPLING SPRING
9	LOW PRESSURE SEAL	34	COUPLING SPRING
17	VALVE STEM JOINT	42	GLAND 'O' RING

# To **dismantle** the regulator, proceed as follows:

- 1. Remove Adjusting Screw Lock Screw (28).
- 2. Unscrew and remove Adjusting Screw (13), together with Adjusting Screw Ball (19), Adjusting Screw Plate (14) and Spring (11).
- 3. Remove Spring Chamber (12) by unscrewing the Setscrews.
- 4. Remove Bonnet assembly (4) complete, taking care not to lose Handwheel Stem Ball (24). On the SPO type, Retaining Nut (39) must be removed prior to removing the Bonnet from the Valve Stem. On re-assembly ensure that the nut (39) is correctly positioned by checking the valve opening with the position indicator.
- 5. Apply a box spanner to hexagon provided on the Valve Stem (15) and an open end spanner across the flats provided on the Piston (10). Unscrew the assembly and withdraw.
- 6. Check all parts for wear and renew as necessary.
- 7. Re-assemble regulator in reverse order, making sure all parts are fitted correctly and tightened securely.

#### **Important fitting note** (refer to drawing)

The Low Pressure Seal (9) is supplied in its natural shape, which is in the form of a "Top Hat", and has a fabric reinforced surface on the outside. Before fitting, the crown of the "Top Hat" must be depressed inwards to form a convolution, and when placed in position the fabric reinforced surface must be facing towards the Spring (11) and Piston (10).

It is essential when fitting the Spring Chamber (12) to ensure that it fits snugly over the convolution of the Low Pressure Seal (9) and does not pinch or trap it. It is essential also that the Adjusting Screw Ball (19) is properly positioned in the centre of the Adjusting Screw Plate (14) as this prevents twisting of the Low Pressure Seal (9) when the Adjusting Screw (13) is being rotated.

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