

COMMISSIONING INSTRUCTIONS

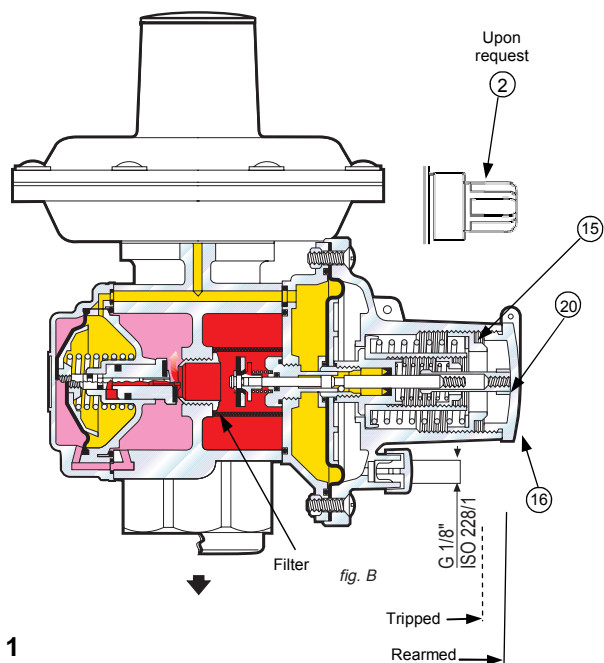
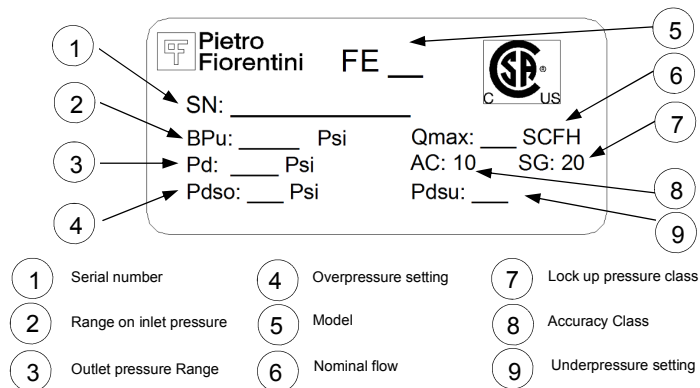


Fig. 1

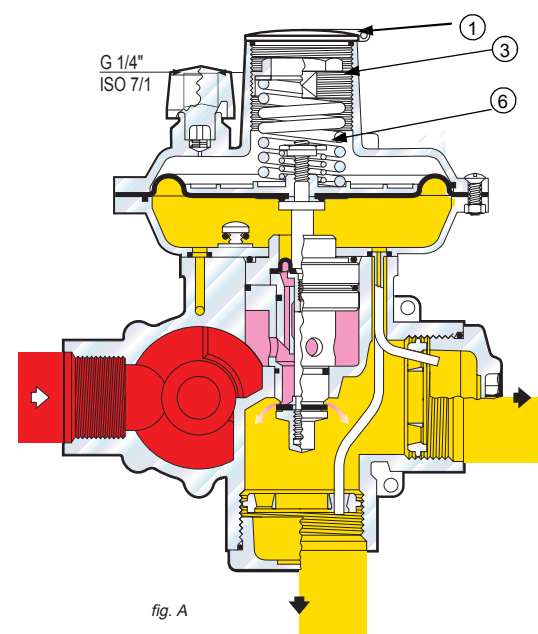


Fig. 2

INSTALLATION INSTRUCTIONS FOR MODEL FE REGULATORS MANUFACTURED BY PIETRO FIORENTINI.

1 GENERAL SPECIFICATION

The FEX series pressure regulators are suitable for use with non-aggressive gases such as pipeline quality natural gas or propane distributed in North America. The characteristic of the FE regulator is the 2nd stage design.

- Maximum design pressure (MAOP): 125 PSIG
- Gas temperature: - 4°F to 140 °F
- Ambient temperature: - 40°F to 140 °F
- Outlet pressure 5.2" w.c. to 7.5 PSIG
- Maximum flow rate 4,500SCFH at minimum of 7.25 PSIG inlet pressure suitable for use with Natural gas, LPG, Propane-air and any non-corrosive gas
- Designed for indoor or outdoor installations

NOTE: Installers and servicers must be trained, competent and should have the knowledge on how to install and maintain the equipment correctly.

2. INSTALLATION AND START UP

All work should be carried out by trained, qualified and authorized personnel using the correct tools and equipment to install and adjust the regulator to all relevant standards, local codes, requirements and procedures. Ensure the installation is approved and the piping is clear of all oil and debris and has been tested for leaks. Make sure the piping is supported and no stressful force is placed upon the regulator. If not otherwise specified, the regulator can be mounted in horizontal and vertical position with the directional flow arrow facing in the direction of the flow.

Verify that the regulator is installed according to the following:

- cut-off valve upstream, such as curb valve or meter riser valve.
- Adequate buffer volume between regulator and appliance (approximately 1:500 of the nominal flow rate in volume) or ensure that downstream appliance regulators and gas valves, can handle pressures up to 4.35 psig.
- Note that freezing water inside the regulator might stop the accurate operation of the regulator and safety devices immediately.

Supply pipelines must be cleaned before installing the regulator. The regulator may be installed outdoors but should not be exposed to any corrosive chemicals. The equipment must be installed by qualified technicians. Due to the high safety and reliability, the regulator may have an internal relief valve which discharges a small amount of gas. When installed indoors, the regulator needs to be vented outside with an external vent pipeline. The manufacturer doesn't provide vent line and its connection I required. Installer shall verify Federal, local codes and regulations compliance before installing, including ventilation requirement in case of indoor installation with vent limiter.

3. START UP (ref. fig. 2)

To avoid an increase of downstream pressure tripping the slam-shut, the creation of a small leak by venting the line downstream (such a loosening the meter nut) is recommended (open the plug pos.4 if available). Slowly open the shut-off valve upstream of the regulator and ensure that gas is in the line. Remove the cap (pos.16) that covers the over pressure slam shut. The reset knob is mounted on the cover, remove the knob and screw it onto the slam shut stem. Slowly pull the knob, (pos.20); the inlet pressure will create a resistance to this operation. Higher inlet pressure generates higher resistance.

Direction of pulling should be straight out in direction of the knob. The knob should be pulled out about 3/8" and the knob will remain in position if the pressure rearming is successful.

ATTENTION: take care not to bend the stem during this operation! Press the UPSO button (pos.2 if present) to reset the low pressure shutoff. Reinstall the cap (pos.16) after successful startup.

4. ADJUSTMENTS

Initial settings of regulator and safety devices must be carried out according to the following: The data indicated on the regulators name plate gives the initial regulator setting. To change the regulation pressure: remove the cap (pos. 1). Use a 27 mm socket wrench to screw the nut (pos. 3) to adjust the regulator pressure. If you increase the regulation pressure, you may need to increase the relief and the over pressure slam-shut valve setting as well. To adjust the regulator, turn the nut (pos.3) clockwise to increase the pressure. To reduce the pressure, turn the nut (pos.6) counter clockwise. To adjust the relief use a 16 mm socket wrench to turn the nut (pos.6) clockwise to increase the pressure. To reduce the pressure, turn the nut (pos.6) counter clockwise. To change the over pressure slam shut valve setting, remove the cap (pos.16). Use a 13 mm socket wrench. Turn the nut (pos.15) clockwise to increase the pressure. Turn the nut (pos.15) counter clockwise to reduce the pressure. Replace all removed caps after adjustment is done.

DOWNSTREAM PRESSURE ADJUSTMENT SPRINGS

SPRINGS P/N	SPRINGS COLOR	SPRINGS RANGE [° w.c.]	SPRINGS RANGE [PSI]	SPRINGS RANGE [kPa]
US64470171BI	White	5.2 - 7.6	0.18 - 0.27	1.24 - 1.86
US64470130AR	Orange	8 - 10.4	0.22 - 0.37	1.51 - 2.5
US64470131VE	Green	10.8 - 15.6	0.38 - 0.56	2.6 - 3.8
US64470132RO	Red	16.0 - 23.7	0.57 - 0.85	3.9 - 4.99
US64470133BL	Blue	24.1 - 31.7	0.86 - 1.14	5.1 - 8.81
US64470134AZ	Light Blue	32.13 - 39.78	1.31 - 1.43	9 - 9.6
MP HEAD				
US64470134AZ	Light Blue	40.1 - 47.8	1.44 - 1.73	9.9 - 11.8
US644701135GI	Yellow	48.22 - 83.98	1.74 - 3.0	11.99 - 20.2
US64470136GR	Grey	84.39 - 140.65	3.04 - 5.07	20.9 - 34.69

OPSO ADJUSTMENT SPRINGS

SPRINGS P/N	SPRINGS COLOR	SPRINGS RANGE [° w.c.]	SPRINGS RANGE [PSI]	SPRINGS RANGE [kPa]
US64470111VE	Green	12.8 - 21.7	0.36 - 0.50	2.50 - 3.49
US64470113AZ	Light Blue	22.1 - 39.78	3.49 - 0.72	3.49 - 4.98
US64470114MA	Brown	40.1 - 64.29	0.58 - 0.72	3.98 - 4.98
US64470115GR	Gray	46.2 - 32	0.72 - 1.16	4.98 - 7.97
US644701116GI	Yellow	84.3 - 132.2	1.16 - 1.59	7.97 - 10.96
US64470051BI	White	132.6 - 200.9	1.40 - 2.10	9.65 - 14.48

5. TRIPPING OF OVER PRESSURE SHUT OFF VALVE (OPSO)

The over pressure slam shut valve trips if the downstream pressure exceeds the set-point. Tripping could be caused by internal leakage at the second stage during stand by or by dirty gas. Sudden interruptions of the gas flow can be caused by solenoid valves downstream (boiler or oven burners).

6. TRIPPING OF UNDER PRESSURE SHUT OFF VALVE & EXCESS FLOW VALVE (UPS0) (Optional)

The UPSO trips in the case of decreasing of the regulation pressure beyond 70% when occurs one of the following conditions:

- The total volume of equipment served by the regulator shall not exceed the nominal value of flow rate indicated on the plate (see point 1). If this occurs, the UPSO trips when the flow rate is included between 110% and 150% of the nominal value of flow rate indicated on the plate (see point 1).
- Decreasing of upstream pressure under the minimum value indicated on the plate (see point 1).

7. INTERNAL RELIEF VALVE (IRV)

The IRV opens only in the case of little anomalies when downstream pressure value increases avoiding the intervention of the OPSO. The IRV closes when the downstream pressure decreases to the normal operating conditions (see Fig.2).

8. RESETTING THE SAFETY DEVICES AFTER TRIPPING (if installed)

Find what caused the failure tripping and repair it, before rearming any safety device. Tripping of the OPSO also causes the UPSO to trip. To reset the two devices follow this procedure:

- Remove the cap (pos.16) that covers the over pressure slam shut
- Create a small leak by venting downstream of the regulator
- Slowly pull the knob, (pos.20) the stroke of the knob is about 3/8" and the it will remain in position if the pressure rearming is successful.
- Press button (pos. 2)
- Close the small leak

If only UPSO has tripped follow this procedure to reset the device:

- Create a small leak by venting downstream of the regulator
- Press button (pos. 2)

If the operation has not been carried out properly, the OPSO may trip. In this case, the reduction of downstream pressure is required then proceed as explained in the instruction for rearming both the devices (OPSO and UPSO). **ATTENTION:** the OPSO valve cannot be reset if the downstream pressure is not reduced to a suitable level.

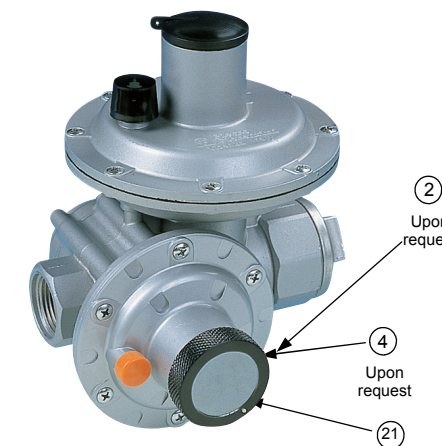


Fig. 3

9. SUGGESTIONS TO PREVENT TRIPPING OF THE SAFETY DEVICES

Do not exceed the maximum flow set-point values of the regulator. Do not feed the regulator with pressures lower than the minimum values indicated. Make sure you bleed the piping downstream to displace the air in the piping when the regulator is installed. Do not supply on-off type service loads (such as solenoid valves) if they are located close (approx. within 10 feet) to the regulator, unless a suitable downstream buffer volume is provided.

10. PERIODICAL INSPECTIONS

When inspections are performed on the regulator installations, checking the set points and good maintenance practices are recommended.

10.1 CLEANING THE FILTER

When necessary, the inlet filter (Fig.2) may be cleaned without removing the regulator from the line. Proceed as follows:

- Close the upstream cut-off valve
- Release the pressure inside the system.
- Remove the cap (pos.16) that covers the over pressure slam shut
- Unscrew the nut (pos.15) counter clockwise till the end of the thread
- Insert the cap (pos.16) in the knob (pos.20) and pull to rearm the OPSO
- Remove the screws on the OPSO cover (pos.21 Fig. 3)
- Remove the cover and the slam shut pulling the cap (pos.16)
- ATTENTION:** take care not to bend the stem during this operation and the OPSO has not to trip when unmounted.
- Remove the filter and clean it
- Fit the over pressure slam shut assembly and cover on the regulator body. Take care to align the sensing hole of the body with the sensing hole of the cover.
- Fasten the screws to fasten the cover

