



Models 15LH and 15LHX Small Volume High Pressure Regulator (Loader)

INSTALLATION AND OPERATION INSTRUCTIONS

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NOTE: The following drawings form a part of this Instruction:

Installation Drawing	W-15L-B01
Assembly Drawing	As Applicable

General

Model 15LH and 15LHX regulators may be used in either gas or liquid systems with 6000 psi maximum inlet pressure. The Model 15LHX is designed from small flow than 15LH, with greater accuracy of control. Both models are available in a variety of outlet pressure ranges and port connection types and sizes. Non-metallic parts are available in various materials to suit service requirements. These design variations are identified by a basic figure number, followed by code letters.

Check pressure range and port connection fittings against service requirements. Do not use in systems where pressure may exceed ratings given on the nameplate.

Operation

The Model 15LH/15LHX is a combination reducing and relief regulator, designed to maintain a constant reduced or delivered fluid pressure in a line or closed vessel where variations may occur in inlet pressure or in flow volume requirements.

There are two main cavities in the regulator, separated by the controlling diaphragm. The lower cavity, in the body, contains the line fluid at the outlet pressure. The upper cavity, which houses the operating parts, is vented to the atmosphere to allow free escape of fluid from the relief valve.

When the handwheel is turned clockwise, the operating spring is compressed and drives the diaphragm assembly down to open the inlet valve. Line fluid is admitted through the inlet valve of the regulator into the body cavity, and out through the outlet port. The flow of fluid through the regulator builds up the pressure in the outlet system. This outlet pressure acts

upward on the diaphragm in opposition to the operating spring. As this upward force builds up, the diaphragm closes, thus reducing or shutting off the flow and holding the outlet pressure constant.

If the outlet pressure should build up beyond the set pressure of the regulator, the increases pressure drives the diaphragm assembly up against the relief stem. This opens the relief valve in the diaphragm assembly, and allows line fluid to bleed to atmosphere until the outlet pressure falls back to its adjusted level.

Sensitivity of the relief mechanism is set by the relief adjusting screw, but regardless of screw setting the relief valve will always vent at some fixed level above the set outlet pressure.

Changing the compression of the operating spring by turning the handwheel will cause a corresponding change in outlet pressure, thus allowing outlet pressure to be set at any point within the design range of the regulator.

Installation

1. The 15LH/15LHX Regulator may be installed in any positions, at the location most convenient for adjustment and service. It may be panel, pipe, of flush mounted. Refer to Installation Drawing W-15L-B01 for mounting dimensions and diagrams.
2. Before connecting the regulator, blow out the supply line thoroughly to eliminate scale, chips, etc.
3. Turn handwheel counterclockwise to limit and admit upstream pressure to inlet port.

Adjustment

1. Turn handwheel clockwise to increase, counterclockwise to decrease the outlet pressure. Set at desired outlet pressure.
2. Remove cap nut at top of handwheel and turn relief adjusting screw clockwise until a slight flow is detected through side slot in spring barrel.

NOTE: If it is not possible to obtain a relief flow as described above, unit must be disassembled and bearing shim 012-00407 inserted between thrust bearing and spring barrel. Refer to W-15LH-B00-2 MAINTENANCE INSTRUCTIONS, Performance Tests, step A-4.

3. Turn adjusting screw counterclockwise until venting stops. This gives the most sensitive relief setting.
4. If a more stable setting is desired, turn relief adjusting screw further counterclockwise until the desired "dead range" is produced. However, do not in any case exceed four turns.

NOTE: Relief adjusting screw must be re-set each time the handwheel setting is changed.

5. After setting relief screw, it may be necessary to readjust handwheel to give desired outlet pressure.
6. Replace cap nut.

The RedQ Model 15LH/15LHX Regulator is now in operation.

Service Suggestions

Minor difficulties can be corrected with the regulator in the line. If the regulator does not respond to the following check, it must be removed from the line and disassembled for cleaning and inspection.

Be sure to use only RedQ replacement parts. The Model 15LH/15LHX Regulator is manufactured to extremely close tolerances which must be maintained if the regulator is to function properly.

Instructions for complete overhaul are given in W-15LH-B00-2, MAINTENANCE INSTRUCTIONS.

1. Failure to deliver pressure when handwheel is turned indicates inlet trouble.

- a. First check supply pressure.
- b. If supply is satisfactory filter unit may have become clogged. Filter is mounted inside inlet port fitting and may be replaced without removing regulator from its mounting. Proceed as follows:
 - i. Remove inlet pressure from regulator.
 - ii. Unscrew inlet port fitting from body unit, holding body against torque to avoid damage to mounting.
 - iii. Remove filter unit and inspect. If feasible, it may be cleaned and re-used. If not, discard and replace with a new filter unit.
 - iv. Replace inlet port fitting and tighten, using 140 ft-lb torque to ensure a tight metal-to-metal seal. Use a second wrench on the outlet port fitting to hold unit against torque and avoid damage to panel.

2. Small continuous venting through barrel indicates relief valve trouble.
 - a. Check relief valve setting as directed in Section IV., Adjustment.
 - b. If leak continues, blow out dirt or scale by turning relief adjusting screw clockwise one or two turns. This opens the relief valve wide and allows line fluid to blow out through it. Re-set as before.
3. Heavy flow of line fluid through spring barrel indicates diaphragm failure.
 - a. Remove regulator from line, for disassembly and replacement of damaged part. Refer to W-15LH-B00-2, MAINTENANCE INSTRUCTIONS.

Appendix

- Installation Drawing W-15L-B01
Assembly Drawing As Applicable
Parts List As applicable

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