INSTRUCTIONS for PUROX TRADE MARK
R-208 OXYGEN AND R-209 ACETYLENE STATION REGULATORS

Listed Under Re-examination Service of Underwriters' Laboratories, Inc.
Approved and Listed by Factory Mutual Laboratories.

Never connect an R-209 to a cylinder. It is for use only on the station of an acetylene piping system.

I. Operating Instructions

IMPORTANT

Except as otherwise noted, the instructions contained in this booklet apply equally to the R-208 and the R-209 regulators. It is assumed that the operator knows the general principles of operation and safe practices to be followed in operating oxy-acetylene equipment.

If you are not sure that you understand these principles fully, we urge you to read Linde's booklet "Precautions and Safe Practices", in addition to these instructions. You can get a copy of this booklet (Form F-2035) without charge from any Linde office. (The same basic information on operating principles and safe practices is in Chapters 5, 6, and 7 of "The Oxy-Acetylene Handboook." This handbook, of more than 500 pages, contains many valuable chapters on welding, cutting and other uses of oxy-acetylene equipment. It may be purchased from any Linde office or from any Linde Distributor.)

A. To Connect

1. Open the station valve slightly, for only an instant, to blow dust or dirt from the valve outlet.

2. Attach the regulator to the station valve.

   NOTE: Oxygen equipment connections have right-handed threads and acetylene connections have left-handed threads.

3. Make sure the regulator pressure-adjusting screw is released by turning it to the left (counterclockwise).

4. Open the oxygen station valve slowly, a fraction of a turn, wait about a half-minute to permit pressure to bleed into the line, then open the valve fully.

   NOTE: When opening an acetylene station valve, it is not necessary to wait for the pressure to bleed into the line, simply open the valve slowly.

   CAUTION: Never stand directly in front of a regulator when opening a station valve.

5. Attach the hose to the regulator outlet and to the torch (Oxygen connections have right-handed threads; Acetylene connections have left-handed threads.) Make sure that all connections are gas-tight.

B. To Adjust Pressure

Open the torch oxygen or acetylene valve. These valves should always be open when the pressure-adjusting screw is being turned to adjust pressure. Turn the pressure-adjusting screw to the right (clockwise) to increase pressure, to the left (counterclockwise) to decrease pressure.

C. To Release Pressure

If work is to be stopped for a half-hour or more, release pressure from the regulator as follows:

1. Close the station valve.

2. Open the torch valve.

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Be sure this information reaches the operator. You can get extra copies through your supplier.
3. Release the pressure-adjusting screw.
4. Close the torch valve.

Follow the same procedure before removing the regulator from a station valve.

II. Maintenance Instructions

IMPORTANT: Never attempt to repair both regulators simultaneously. To avoid interchanging parts always complete repairs on the one type before starting on the other.

For all repairs and replacements other than those specifically described below, return the regulator to your Linde Distributor for reconditioning at a Linde apparatus repair station.

The specific repair information shown on the drawing is provided for experienced and qualified persons engaged in the repair of oxy-acetylene apparatus. Improperly repaired apparatus may be hazardous. Linde offers economical repair services through its distributors and region offices.

A. To Disassemble the Regulator

1. Hold the regulator upright in a vise by means of the flat surface on the under side of the body.

2. Turn the pressure-adjusting screw out (counterclockwise) until it spins freely.

3. Unscrew the regulator cap and lift it off. Lift off the spring and spring washer.

4. Lift off the diaphragm assembly and diaphragm rings.

5. Using a socket wrench, unscrew the valve locking screw and lift out the parts located within it. Lift out the valve closing spring.

6. Hold the diaphragm assembly in a vise by means of the clamping screw and unscrew the 5/16-in. hex nut. Lift off all parts.

B. To Inspect the Regulator Parts

1. Using a clean cloth, wipe all the parts clean, then examine them for defects or excessive wear. Here is what you look for:

   (a) Diaphragm: Should be free from cracks and signs of excessive wear. (It should compare favorably with a new one.)

   (b) Valve Stem: Should be clean, straight and unmarred; examine especially the plastic seating surface which closes against the valve seat screw.

   (c) Valve Screw: Examine especially the seating corner against which the valve stem seats. It should be clean and unmarred.

   (d) Valve Closing Spring: Should not have acquired a permanent set. It should be full length (compare it with a new one).

C. To Reassemble the Regulator

1. Reassemble the diaphragm and associated parts to the diaphragm attaching screw to form a subassembly. To do this:

   (a) Hold the diaphragm screw in a vise.

   (b) Wash the diaphragm in clear water and dry it with a clean cloth.

   (c) Assemble the parts to the screw in this order; diaphragm, plate, guide and hex nut. Tighten the hex nut securely -- but don't use excessive force.

   (d) Lay the sub-assembly aside.

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Do not use oil on this apparatus. Oil and grease are easily ignited and burn violently in the presence of oxygen under pressure.
R-208 Oxygen Regulator (Part No. 04X60)

R-209 Acetylene Regulator (Part No. 04X61)
2. Hold the regulator upright in a vise.
3. Place the valve closing spring (large end down) in the regulator.
4. Place the valve seat and stem on the valve closing spring so that the 3/32-in. diameter of the sleeve is located inside the top of the spring.
5. Place the valve screw over the parts so that the valve stem protrudes through the hole in the top of the screw.
6. Press down, and screw the valve screw in a few threads. (To start the valve screw into the body, it is necessary to depress the valve spring until the valve screw "catches.")
7. Turn in the valve screw and tighten it securely with a socket wrench.
8. Before going further, test the valve assembly for leaks. To do this:
   (a) Connect the regulator to a station valve. (The R-208 may be connected to a full cylinder of oxygen.) Tighten the connection.
   (b) Slowly open the station valve (or cylinder valve). Stand to one side, not in front of the regulator.
   (c) Using a solution of grease-free soap (such as Ivory brand) and water, test around the valve for leakage.
   (d) Close the station valve and remove the regulator.
9. Place the diaphragm sub-assembly in position.
10. Place the two diaphragm rings in position (the paper slip ring against the diaphragm).
11. Assemble the spring, spring washer and cap. Tighten the cap securely with a wrench.

D. To Replace the Safety Release Disk
   (R-208 only)
If the safety disk ruptures, close the cylinder valve and remove the regulator from the cylinder. Remove the safety release cap and place a new disk (NEVER MORE THAN ONE) between the two washers in place of the old disk. Replace the safety cap. Then disassemble the regulator, replace all worn parts, reassemble, and test before returning the regulator to service.

E. To Replace the Inlet Nipple Filter
If the filter becomes plugged to such an extent as to materially reduce the capacity of the regulator, it may easily be removed and replaced. For reasons of safety and continuous good regulator operation, a regulator should never be connected to a source of supply unless the filter is in place in the inlet nipple. To replace the filter: Insert a No. 1 "EZY-OUT" (or a No. 6 wood screw, 2-in. long) into the filter and pull it out. Place the new filter in the nipple and press it into position against the shoulder with a 1/4-in. metal rod.

NOTE: In the R-209, press the filter into the nipple leaving approximately 1/8 inch clearance between the filter and the end of the nipple.

F. To Test for Leakage
1. Connect the regulator to a station valve. (The R-208 may be connected to a full cylinder of oxygen.) Tighten the connection.
2. Fully release the regulator pressure-adjusting screw.
3. Slowly open the station valve (or cylinder valve).
4. Place a film of soapy water over the regulator outlet. If bubbles form and burst, it indicates that the regulator valve stem and valve screw is not forming a perfect seat, and that the regulator should again be disassembled, and one or both parts replaced.
5. Blank off the regulator outlet. This can be done by connecting the torch to the regulator and closing the torch oxygen valve.
6. Set the R-208 delivery pressure at 100 psi or set the R-209 delivery pressure at 15 psi and test for leaks around the regulator cap threads and at the vent holes in the cap.

NOTE
If you have followed these instructions carefully and the regulators still do not function properly, send them to the distributor from whom the regulators were purchased, or to nearest apparatus repair station of Linde Company.