I. OPERATING INSTRUCTIONS

The instructions contained in this booklet are for experienced operators. They assume 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 "Precautions and Safe Practices" (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 Handbook." 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 an instant. (This is termed "cracking the valve.") This will blow out dust or dirt that may have collected in the station-valve outlet.
2. Attach the regulator to the station valve. Tighten the connection nut with a wrench.
3. Make sure the regulator pressure-adjusting screw is released. To do this, turn it to the left (counter-clockwise) until it will spin freely.
4. Open the station valve, slowly. Don't stand directly in front of the regulator gauge face when you open a station valve.
5. Attach the acetylene hose to the regulator outlet and to the blowpipe or other equipment. Before you start to work, test all connections with a solution of soap and water. (Always use a grease-free soap, such as "Ivory" soap.)

B. To Adjust Pressure

To increase delivery-pressure, turn the pressure-adjusting screw to the right (clockwise). To decrease delivery-pressure, turn the pressure-adjusting screw to the left (counter-clockwise).

The blowpipe acetylene valve, and any other valve in the delivery line, should be open whenever you are adjusting delivery pressure. If they are not open, you will not get a true working-pressure reading on the delivery-pressure gauge.

For the initial adjustment, before lighting the blowpipe, follow these steps:

1. Open the blowpipe acetylene valve.
2. Turn the pressure-adjusting screw to the right (clockwise), until the delivery-pressure gauge shows the desired pressure.
3. Close the blowpipe acetylene valve.
C. To Release Pressure

If work is to be stopped for a half-hour or more, you should release all pressure from the regulator. To do this, proceed as follows:

1. Close the station valve.
2. Open the blowpipe acetylene valve until the regulator gauge hand returns to the pin.
3. Release the pressure-adjusting screw by turning it to the left (counter-clockwise), until it will spin freely.
4. Close the blowpipe acetylene valve.

Always follow the steps outlined above before you remove a regulator from a station valve.

D. Operating Hints

If a regulator is to be out of use for a few days or more, turn in the pressure-adjusting screw enough to move the valve stem off the metal seat. When the regulator is returned to use make sure the pressure-adjusting screw is released before pressure is admitted to the regulator.

II. MAINTENANCE INSTRUCTIONS

For all repairs and replacements other than those specifically described below, send the blowpipe to a Linde Air Products Company 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 Air Products Company offers economical repair services through its district 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 (counter-clockwise) 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.
5. Using a socket wrench, unscrew the valve 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 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 sub-assembly. 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.

2. Hold the regulator upright in a vise.
3. Place the valve closing spring (large end down) in the regulator.
4. Place the valve stem in the valve sleeve and set the valve sleeve 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, (Continued on page 4.)

NEVER TEST AN ACETYLENE REGULATOR NEAR WELDING OR CUTTING WORK, OR NEAR SPARKS, FLAMES, OR ANY POSSIBLE SOURCE OF IGNITION.

The term "Purox" is a registered trade-mark of Union Carbide and Carbon Corporation.
### Replacement Parts List

**FOR**

**"PUROX" ACETYLENE STATION REGULATOR**

**TYPE R-209 PART NO. 04X61**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
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<td>Inlet Nut</td>
<td>48Z39</td>
<td>Valve Stem Sleeve</td>
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<tr>
<td>3390</td>
<td>Outlet Connection</td>
<td>82244</td>
<td>Diaphragm Ring</td>
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<tr>
<td>6354</td>
<td>Body Plug</td>
<td>82245</td>
<td>Pressure-Adjusting Spring Washer</td>
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<td>6868</td>
<td>Beveled Gauge Crystal</td>
<td>92202</td>
<td>Cap Bushing</td>
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<td>52M08-6</td>
<td>30-lb. Acetylene Gauge</td>
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<td>32Y30</td>
<td>Valve Stem</td>
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<td>35Y13</td>
<td>Pressure-Adjusting Screw</td>
<td>M-RI-1</td>
<td>HARDWARE</td>
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<td>Inlet Nipple</td>
<td>N-H-18</td>
<td>Cap Bushing Retaining Ring, National</td>
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<td>Valve Closing Spring</td>
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<td>Lock Washer Co.'s No. XRC-330</td>
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<td>Pressure-Adjusting Spring</td>
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<td>5/16-in.-24 Hex Steel Nut</td>
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<td>Shatterproof Gauge Crystal</td>
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<td>Diaphragm Plate Spring Guide</td>
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<td>OXWELD Anti-Friction Compound</td>
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<td>31Z78</td>
<td>Cap</td>
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<td>(for Pressure-Adjusting Screw</td>
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<td>35Z28</td>
<td>Diaphragm Screw</td>
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<td>Threads)</td>
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<tr>
<td>37276</td>
<td>Valve Screw</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
it is necessary to depress the valve spring until the valve screw "catches."

(c) Using a solution of soap (Ivory brand) and water, test around the valve for leakage.

(d) Close the station valve and remove the regulator from the cylinder.

9. Place the diaphragm sub-assembly in position.
10. Place the diaphragm ring in position.
11. Assemble the spring, spring washer and cap. Tighten the cap securely with a wrench.

D. To Test for Leakage

1. Connect the regulator to a station valve.
2. Fully release the regulator pressure-adjusting screw.
3. Slowly open the station 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 blowpipe to the regulator and closing the blowpipe oxygen valve.
6. Set the regulator 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 regulator still does not function properly, send it to the jobber from whom the regulator was purchased, or to the nearest apparatus repair station of Linde Air Products Company.

Linde Air Products Company
A Division of Union Carbide and Carbon Corporation
General Office: New York

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto