Operating Instructions

These instructions are for experienced operators who know the general principles of operation and safe practices which should be understood before using oxy-acetylene equipment. If you are not familiar with these principles, we recommend your reading the PUROX Instruction Manual (in addition to these instructions) which you may obtain free of charge from any LINDE office.

To Connect—(1) Open the cylinder valve slightly, for only an instant, to blow dust or dirt from the valve outlet. Never crack an acetylene cylinder valve near welding or cutting work, or near sparks, flames or any possible source of ignition. (2) Attach the regulator to the cylinder valve. (3) Make sure the regulator pressure-adjusting screw is released by turning it to the left (counter-clockwise) until it spins freely. (4) Open the cylinder valve slowly a fraction of a turn, then open it 1-1/2 turns—no more. Do not stand directly in front of the gauges when opening the cylinder valve. (5) Attach the acetylene hose to the regulator outlet and to the blowpipe. Make sure that all connections are gas-tight.

To Adjust Pressure—Open the blowpipe acetylene valve one-half turn. This valve 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 (counter-clockwise) to decrease pressure.

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 cylinder valve. (2) Open the blowpipe valve. (3) Release the pressure-adjusting screw. (4) Close the blowpipe valve. Follow the same procedure before removing the regulator from a cylinder.

Operating Hints—(1) If a regulator is to be out of use for a few weeks or more, turn in the pressure-adjusting screw enough to move the seat off the nozzle. (2) Unless cylinders are mounted on a suitable truck, always remove regulators before moving cylinders. (3) Remember that this regulator is a precision instrument designed to control acetylene at pressures up to 250-lb. per sq. in. and that the long service life which it is built to give will depend largely on the care it receives.

Maintenance Instructions

Don't make any repairs to any equipment, other than those mentioned below. If any of your equipment should need further repairs or replacements, send it to the dealer from whom you bought the outfit, or to the nearest repair station of The Linde Air Products Company.
A. Regulator Valve Leakage

When you shut off the blowpipe the reading on the delivery-pressure gauge goes up a little. If it continues to rise after the blowpipe valve has been shut off a few seconds the regulator valve is leaking. As a further check turn adjustment screw out (counter-clockwise) to release pressure and detach hose from regulator outlet connection. Apply a film of soapy water (use Ivory soap) to the outlet connection. If it bubbles, you have a leak in or around the valve seat assembly. To get rid of the leak proceed as follows:

1. Close the cylinder valve and remove the regulator from the cylinder.
2. Hold the regulator in your hand; don’t clamp it in a vise, because you will damage it.
3. Unscrew the rear cap plug with a wrench.
4. Turn the pressure-adjusting screw several turns to the right.
5. Remove the valve locking screw from the yoke with a screwdriver.
6. Turn the damper upside-down. Shake out the vibration damper, valve seat locking screw, valve seat spacer washer, and valve seat.

NOTE: If the valve seat does not drop out, you can loosen it by turning the pressure-adjusting screw to the left or slightly tapping the head of the adjusting screw.

7. The valve seat is not reversible.
8. After the valve seat has been removed, it always should be replaced with a new valve seat.

RE-ASSEMBLY OF THE REGULATOR

10. Release the tension of the pressure-adjusting screw.
11. Screw the rear cap plug tightly into the rear cap.
12. Connect the regulator to a full cylinder.
13. Make sure that the pressure-adjusting screw is released.
14. Stand to one side of the regulator and open the cylinder valve slowly.
15. Test for leaks at the outlet connection with soapy water (use Ivory soap only).
16. Hold your thumb over the outlet connection. Turn in the pressure-adjusting screw until the delivery pressure gauge indicates about 10 pounds. Test with soapy water for leaks between the body and the front and rear caps and at the screw heads and rear cap plug.

B. Vibration

If you hear a chatter or hum in the regulator when it is in normal service or operation, it is due to vibration. Vibration is controlled by adjusting the vibration damper. To adjust this proceed as follows:

1. Attach the regulator to a closed cylinder valve, or hold it in your hand.
2. Screw in pressure-adjusting screw.
3. Take out the rear cap plug.
4. Adjust the vibration damper so that it will make a firm contact with the inside of the recess in the rear cap plug.

NOTE: The dimension across the prongs of the vibration damper, when it is in place in the regulator, should be between 9/32 and 17/64 of an inch. If the prongs are not spread enough, humming of the regulator may result. If the prongs are spread too much, the regulator may be sluggish in operation.
5. Screw the rear cap plug into the rear cap and tighten in well with a wrench.
6. Test the regulator on a cylinder, as described above in steps 12-16 under "REGULATOR VALVE LEAKAGE," Section A, before it is returned to service. Use soapy water (Ivory soap only) to do the testing.

C. Valve Nozzle Leakage

If there is still leakage at the outlet of the regulator after the valve seat has been changed, there might be a leak at the valve nozzle. To correct this do the following:

1. Repeat step 1 through 6 under "REGULATOR VALVE LEAKAGE," Section A.
2. Remove the eight nuts which hold the rear cap to the body.
3. Remove the rear cap, rear cap gasket and valve spring.
4. Remove the two screws which hold the guide diaphragm to the yoke. Remove the guide diaphragm.
5. Un-screw the four yoke screws and remove the yoke.
6. Remove the valve nozzle from the body crossbar, with a socket wrench, for inspection.
7. Examine the valve nozzle. If it is marred or nicked replace it with a new one.
8. Replace the valve nozzle, making sure that it is properly seated in the regulator body crossbar.
9. When you have replaced the nozzle in the body crossbar reassemble the regulator as described in Section D below, starting at step 14. Be sure you test it with Ivory soap solution before putting it back in service.

D. Diaphragm Leakage

When you are testing the regulator with a soapy solution and you get leakage from the holes in the front cap of the regulator, the chances are you need to replace the diaphragm or gasket. To do this proceed as follows:

1. Disassemble as outlined under "VALVE NOZZLE LEAKAGE," Section C, steps 1 through 5.
2. Remove the front cap assembly, pressure-adjusting spring guide washer, and pressure-adjusting spring.
3. Disassemble the yoke cap, diaphragm, and diaphragm plate by unscrewing the diaphragm nut.
4. Put the new diaphragm over the stem of the yoke cap, and then place the diaphragm plate over the stem with the flat side against the diaphragm and

(Continued on page 4)
Parts Illustration—No. 34 Acetylene Regulator

**REPLACEMENT PARTS LIST**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>3039-1</td>
<td>Inlet Nut</td>
</tr>
<tr>
<td>3039-2</td>
<td>Inlet Nipple</td>
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<tr>
<td>3390</td>
<td>Acetylene Outlet Connection</td>
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<tr>
<td>72A70</td>
<td>Beveled Gauge Crystal</td>
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<tr>
<td>51K03</td>
<td>Rear Cap</td>
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<td>51K04</td>
<td>Yoke Cap</td>
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<td>51K05</td>
<td>Yoke</td>
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<td>Diaphragm Plate</td>
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<td>51K14</td>
<td>Spring Retaining Washer</td>
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<td>51K15</td>
<td>Yoke Screw (4 Used)</td>
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<tr>
<td>51K25</td>
<td>Front and Rear Cap Gasket (2 Used)</td>
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<tr>
<td>51K26</td>
<td>Guide Diaphragm</td>
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<tr>
<td>51M01</td>
<td>Valve Seat</td>
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<tr>
<td>XE6856</td>
<td>30 lb. Acetylene Gauge</td>
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<tr>
<td>XE6857</td>
<td>500 lb. Acetylene Gauge</td>
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<tr>
<td>31Y16</td>
<td>Front Cap Assembly (Includes 77Z55)</td>
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<tr>
<td>35Y03</td>
<td>Pressure-Adjusting Screw</td>
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<tr>
<td>28Z89</td>
<td>Pressure-Adjusting Spring</td>
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<td>29Z19</td>
<td>Valve Spring</td>
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<td>29Z20</td>
<td>Vibration Dampener</td>
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<td>Valve Nozzle</td>
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<td>34Z19</td>
<td>Rear Cap Plug</td>
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<td>34Z72</td>
<td>Valve Seat Locking Screw</td>
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<td>34Z73</td>
<td>Rear Cap Screw (8 Used)</td>
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<td>36Z05</td>
<td>Diaphragm Nut</td>
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<tr>
<td>77Z55</td>
<td>Nut (Included in Part No. 31Y16)</td>
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<tr>
<td>78Z54</td>
<td>Pressure-Adjusting Spring Guide Washer</td>
</tr>
<tr>
<td>78Z55</td>
<td>Spacer Washer</td>
</tr>
</tbody>
</table>

**HARDWARE**

- N-H-48  #10-32 Hex. Steel Nut (8 Used)
- S-FL-B-3 #2-56 x 1/4-in. Flat Head Brass Machine Screw (2 Used)
- W-L-PB-23 #10 x 3/32-in. x 3/64-in. Phosphor Bronze Lock Washer (8 Used)

**ACCESSORY**

- 78Z52 OXWELD No. 54 Anti-Friction Compound (for Pressure-Adjusting Screw)
5. Screw the diaphragm nut tightly on to the stem of the yoke cap.
6. Make sure that when the bolt holes of the diaphragm are exactly lined up with the bolt holes in the regulator body, the straight sides of the yoke cap are exactly at right angles to the regulator body crossbar.
7. Place the spring retaining washer, pressure-adjusting spring and diaphragm assembly in the front cap.
8. Make sure that the screw holes in the front cap and diaphragm line up.
9. Press the diaphragm into the recess in the front cap with a small screwdriver.
10. Insert two rear cap screws directly across from one another through the body from the rear to line up the regulator.
11. Line up the screw holes in the body, diaphragm, and the front cap.
12. Make sure that the straight sides of the yoke cap are exactly perpendicular to the regulator body crossbar so that when the yoke is assembled to the yoke cap it will not touch the body crossbar.
13. Hold the front cap firmly to the body, with the two screws that you are using to line up the regulator still in position.
14. Assemble the yoke to the yoke cap by means of the four screws which hold the yoke in place.
15. Be sure not to damage the valve nozzle, when replacing the yoke.
16. Make sure that the yoke clears the crossbar after the yoke screws have been tightened.
17. Insert the remaining six body screws through the front cap to line up the regulator.
18. Reverse the two screws previously used as guides.
19. Hold the front cap and diaphragm firmly in position with the fingers.
20. Make sure the seating surfaces between the body and the rear cap are clean.
21. Place a new rear cap gasket in position on the rear of the body.
22. Assemble the guide diaphragm to the yoke with two screws.
23. Assemble gasket on guide diaphragm (one gasket below and one gasket above guide diaphragm).
24. Replace the valve spring.
25. Replace the rear cap.
26. Place the lock washers on the body screws and then the nuts. Tighten the nuts firmly and evenly all around until the lock washers are flat against the rear cap.
27. Before replacing the valve seat turn the pressure-adjusting screw a few turns to the right to prevent injury to the seating surfaces of the valve seat and valve nozzle.
28. See Section A, beginning at step 9, for completion of assembly and testing of regulators.

Never test an acetylene regulator near welding or cutting work, or near sparks, flames, or any possible source of ignition.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
General Office: New York, N. Y. Offices in Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto
Manufactured in U. S. A.

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