C-62 CUTTING TORCH

A. 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 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.)

1. To Connect
   (a) Using your fingers, check the valve packing nuts to see that they are tight.
   (b) After connecting the oxygen and acetylene (or fuel gas) hose to the torch, check to see that they are gas-tight.
   (c) Attach the correct nozzle to the torch. Tighten the nozzle nut with a wrench.

2. To Adjust Pressures
   (a) Open the cutting-oxygen valve, adjust the oxygen regulator to the correct pressure. (See the chart on Pages 5 and 6.) Close the cutting-oxygen valve.
   (b) Open the acetylene valve about one full turn. Adjust the acetylene or fuel gas regulator to the correct pressure. (See chart on Pages 5 and 6.) Close the acetylene valve.

3. To Light
   (a) Open the preheat-oxygen valve a small fraction of a turn.
   (b) Open the acetylene valve about one-quarter to one-half a turn and light, using a friction lighter. DO NOT USE A MATCH.
   (c) Open the acetylene valve two turns, and then adjust the flame to neutral by gradually opening the preheat-oxygen valve further.
   (d) Open the cutting-oxygen valve and readjust flames to neutral by readjusting the preheat-oxygen valve.

4. To Shut Off
   (a) Close the cutting-oxygen valve.
   (b) Close the acetylene valve.
   (c) Close the preheat-oxygen valve.

5. Operating Precautions

   a. BACKFIRE
   Improper handling of the torch may make the flame backfire -- go out with a loud snap. This may be caused by one of the following:
   (i) Touching the work with the nozzle.
   (ii) Overheating the nozzle.
   (iii) Operating at incorrect pressures.
   (iv) A loose nozzle.
   (v) Dirt on the nozzle seat.
   When the trouble has been determined and corrected, the torch may be relighted in the usual manner.

   b. FLASHBACK
   A flashback occurs when the flame burns back inside the torch, usually with a shrill hissing or squealing. Should a flashback occur proceed as follows:
   (i) Immediately close the preheat-oxygen valve.
   NOTE: This is an exception to the normal procedure for shutting off given in 4 above.
   (ii) Close the acetylene and cutting-oxygen valves.
   (iii) After a moment, relight the torch in the usual manner.
   (iv) Flashbacks are avoided by following correct operating procedures and maintaining correct pressures.

   If flashbacks occur, even after correcting the possible sources of trouble listed above under "backfire", send the torch and nozzle to the nearest Linde repair station for a complete checkup.
B. Maintenance Instructions

For all repairs and replacements other than those mentioned below, send the torch to the nearest Linde repair station or Linde Distributor.

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. Economical repair service is offered through Linde region offices or through your Linde Distributor.

1. Needle Valve Leakage

If tightening the packing nut does not stop the leak, replace the valve packing washer. To do this:

(a) Unscrew the packing nut and valve stem until the complete valve stem assembly can be removed from the torch.

(b) Cut the valve packing washer off the valve stem. Then place the split replacement washer around the stem, and push it into packing recess in the nut.

(c) Screw the valve assembly into the body, tighten the valve packing nut very tightly with a wrench. To seal properly, the packing material should be molded in place. To do this, the packing nut should be tightened until it is difficult to turn the valve. If possible, set the torch aside for 3 or 4 hours (preferably over-night); then back off the packing nut slightly until the proper friction is obtained for satisfactory valve adjustment.

(d) Test for leakage around the nut and stem.

2. Cutting Valve Leakage

If leakage develops around the cutting valve stem, replace cutting valve packing bushing. If leakage develops through the cutting valve, replace cutting valve seat. Replacement procedure follows:

(a) Compress the fulcrum spring by means of a small drill or wire inserted into the hole on top of the cutting lever.

(b) While the fulcrum spring is compressed, push the fulcrum pin out through the hole in the side of the lever. (Drill used to compress spring will permit pin to start out of lever.) Using pliers, pull the fulcrum pin out.

(c) Lift the lever off the cutting valve stem.

(d) Remove the cutting valve stem guide and cutting valve assembly.

(e) Use soapy water to moisten cutting valve stem head, then remove cutting valve bushing and ferrule.

(f) Remove the spring washer from the bushing—replace the bushing with a new one.

(g) Place the spring washer on the new bushing with the rounded side against the bushing.

(h) Replace the cutting valve seat (stem) if necessary.

(i) Place spring over seat.

(j) Position ferrule in cutting valve bushing—moisten bushing and slip over stem.

(k) Place cutting valve assembly in valve and carefully screw into body.

(l) Place lever in position, compress fulcrum spring as described in step (a) and push fulcrum pin into position. (When it hits drill used to compress spring, remove drill and push pin home.)

3. Leakage Through Valves

(a) If either torch valve does not shut off tightly, remove the valve assembly from the torch body.

(b) Wipe the seating surfaces of the valve stem and torch body with a clean cloth. If the valve stem is damaged or the seat is marred, install a new valve stem assembly. If the valve still leaks, the torch body should be reseated at a Linde repair station.

4. Cleaning the Mixer

To clean the mixer proceed as follows:

(a) Remove the rear plug and the two springs.

(b) If gentle tapping of the torch on the bench (or block of wood) does not cause the mixer to fall out, screw a 10-32 machine screw into the end of the nozzle. Then pull out the screw and mixer.

Three sealing washers (one plastic and two brass) will be removed with the mixer nozzle. If the plastic washer appears to be cut or distorted, discard and replace it.

(c) Clean the mixer with a No. 35 drill. Other tools might enlarge or bellmouth the orifice, hence they should not be used.

(d) Examine the mixer carefully. If it is bent or if its tip has been nicked or marred (examine particularly the tip face projections), it should be replaced with a new mixer.

(e) Before reassembling, inspect the seat in the torch body to make sure that it is free of chips and clean. Insert the mixer making sure that the mixer tip is bottomed in the torch mixer tube.

(f) Make sure the plastic washer is clean. Place it between the two brass washers and insert them in the body so that they squarely contact the shoulder backing in the upper section of the body.

(g) Insert the two springs. A small screwdriver can be inserted around the mixer tube to press the packing into place.

(h) Screw the sealing plug into position and tighten to form a gas-tight seal.

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FIG. 1 - C-62 Cutting Torch

302X85 (180°)
27X02 (75°)
27X03 (90°)