

MINEX[®]

Fax : 033-2554 5741, 2555 7658
Phone : 2242 6853
E-mail : jkdey@cal3.vsnl.net.in
Website : www.jkdey.com

J. K. DEY & SONS

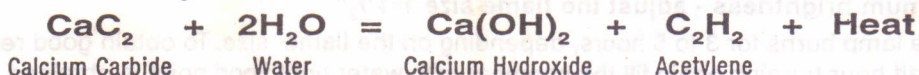
MANUFACTURERS & EXPORTERS

13, OLD CHINA BAZAR STREET,
KOLKATA - 700 001, INDIA

OPERATING INSTRUCTION OF MINEX CARBIDE LAMP

INTRODUCTION

When Calcium Carbide combined with Water, a chemical reaction produces Acetylene Gas. This gas is forced through the special constructed pin hole burner/jet and the emitted stream of gas is lit to produce a clear and bright flame.



We must add here that in May 1892 an American Thomas L. Wilson discovered Calcium Carbide by heating a mixture of coke and lime in an electric furnace which resulted a dark grey carbide formed in a melted state and after cooling it became hard and brittle.

Calcium Carbide is principally used as a source of Acetylene.

The Carbide being solid fuel it is easy to handle.

So far our knowledge goes most probably the acetylene light / lamp was first patented in England on November 1894.

CHARACTERISTICS

1. Acetylene is a colourless gas.
2. Its illumination power is nearly 15 times than that of the coal gas.
3. Acetylene combined with oxygen produces Oxyacetylene flame.

ADVANTAGES

1. It is very easy to handle for lighting purpose.
2. Emission of soft diffuse light.
3. It produces heat also.
4. It gives a dependable service so long, if properly maintained.
5. The Ceramic Tip of Jet/Burner runs so long, if care taken in every operation.
6. The light of a carbide will extend into the covers peripheral vision given broader illumination than incandescent bulb.
7. Maintenance cost is amazingly low.
8. Lamp can be ignited with minimum oxygen in atmosphere.

OBSERVATION

A) Just before lighted the lamp, it is necessary to check whether the following parts are in order :-

- | | |
|-------------------------------------|--|
| 1. Water Regulating Rod with spring | 4. Gasket |
| 2. Water Cap/Door | 5. Handle with screw |
| 3. Reflector | 6. Jet should be checked by pin cleaner brush. |

B) Now uncrewing the lamp, keep the lower and upper parts separately and follow :-

1. At first it must be noticed whether the water valve with disc (on the bottom of water tank) is in a correct position.
2. Next, unscrew the water cap and fill it up with clean water until flood point is obtained and then close the water cap.

3. Then, after water filling, open the water regulator slowly, by turning the knob anticlockwise for a quarter to half turn, Now see how the water drips out; you want to adjust it so that there is one drip every 1 to 2 seconds. Now gets the knob tightened. (To get best result it is advisable if the users make trial of this process just to acquire an idea of correct water dripping).
4. Now fill the carbide $\frac{1}{2}$ to Below $\frac{3}{4}$ of carbide chamber. Do not overfill the carbide chamber because calcium carbide will expand as it gets wet.
5. Fit the rubber gasket with the carbide chamber properly.

READY FOR LIGHTING THE LAMP :

At the beginning turn the water regulating knob as stated and wait for minimum 30 - 45 seconds to produce internal gas pressure, when the pressure is developed a gas smell is felt and some times a hissing sound is heard, then ignite the gas coming out of the jet immediately and get a flame appears at the jet.

After allowing gas production to stabilize, adjust the length flame by turning the water regulator.

1. For long time burning - adjust the flame size $\frac{1}{4}$ " to $\frac{1}{2}$ "
2. For optimum brightness - adjust the flame size 1-1 $\frac{1}{2}$ "

Generally the lamp burns for 3 to 5 hours, depending on the flame size. To obtain good result, after One and a half hour burning again fill the chamber with water until flood point is obtained.

When the flame shrinks to $\frac{1}{4}$ " or less, even with plenty of water, the carbide is exhausted. It is best to cut off the water and extinguish the flame at this point, as a small flame will leave a carbide residue and possible clog the jet.

Be sure there is simple ventilation as some gas will still be present. If the water is left on top of the chamber carbide residue will be remaining and new carbide will become a carbide residue and will not remove.

MAINTENANCE

1. The lamp should be thoroughly cleaned after every use so that no carbide residue is left inside the chamber.
2. To restore the Brass Polish, please use Brass cleaner and soft cloth.
3. Before and after every operation, the tip of jet should be cleaned with the help of tip cleaner brush.
4. Check the water valve periodically, as lime in the water may build up a residue.
5. Tension of spring should be maintained properly.
6. The Reflector should be always cleaned using finger by soft cloth just to keep up its polish.
7. The Striker flint, when exhausted, may be replaced with a standard lighter flint. The flint spring can be stretched to increase tension and produce a bigger spark.
8. Always ensure the rubber gasket on the lamp bottom remains clean and smooth, when it becomes so hard, replace immediately to avert the gas leakage.
9. Don't remove the jet/burner holding its head with the plier. Remove it smoothly just holding the middle portion of jet in order to avoid any crack on ceramic tip.

Note :

- 1) It is better to use jet opener special tools to open the jet/burner.
- 2) Clogged Tip - Carbon may build up inside the gas jet, and is easily removed by reaming the orifice with 'Minex' Burner/ Jet Cleaning brush. It is best not to remove the jet unless it is to be replaced, but it can be unscrewed and checked from the rear against a light to ensure the orifice is Clear.
- 3) Gas bubbles out through the water tank - This means gas is being produced too fast for the jet, or the jet is clogged. Reduce the water drip, and /or check the jet.
- 4) Do not detach the lamp during lighted condition.