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THERMAL LANCES WITH OXYGEN



NORMS OF USE

IMPORTANT INFORMATION

Use of thermal lances with oxygen is not really difficult or dangerous. It is important to remind some rules of prevention and information in order to have the best use of equipment :

a/ Oxygen

Oxygen is a gas indore and colourless which is present for 23% in the air, it is not burn but it can favour combustion of almost all materials, and it is very concentrated.

Moreover air has a density superior that the oxygen and that provoke his accumulation in low parts of pieces. Consequently working with excess of oxygen in a small piece increase the risk of immediate combustion. You must have a good ventilation in all pieces.

b/ Thermal lances

For motives explained above lances must be absolutely exempt from fat or other lubricants, as a consequence when it is necessary to cut or to link sleeve with lance, it is avoided the use of lubricants.

c/ Equipment

There is a n oxygen source, a reducer of pressure, an alimentation tube and a fast tie for lances.

These devices, have to be according to current norms, of adapted dimensions, in bronze or other approved alloys and it is necessary to have a safety valve on the channeling.

For works in a short period we can also use a single bottle, it is evident that source will have to be proportional in time of work.

The reducer of pressure have to maintain a stream of at least 0,5 Nm³/min with a lance of 3/8 in a pressure of 10-12 atm.

d/ User

User must have :

A helmet with a visiere or a similar thing

A garment anti-sparks

A protection for hands and feet

It is necessary to avoid smoking in a zone saturated in oxygen.

Instructions for use

Connect the reducer at the source of oxygen. Insert lance into the place of sleeve. Close the curtain on lance and adjusting on the reducer the basic branch pressure so that the pressure is 10/12 kg / cm². By means of an incandescent tube light the free extremity of the lance with a red flame. Open slowly the curtain until have the lance. Regulate the combustion by increasing the exit of oxygen. Apply the tip lit on the material to be drilled by exercising a light pressure. Continue the drilling by making small movements of rotation and of goes and comes to favor the unloading of fused material. The pressure have to be too strong to avoid suffocating the flame.

The instructions above are fundamental for the good functioning, but to obtain the best result with the minimum of consumption of the lance and the oxygen, it is necessary to acquire technique of work. In the use of these lances skills and experience of the user are very important, what is not however difficult to acquire.

We give in the following pages some useful advices to obtain good results in cases most collectively met.

Horizontal hole

Begin the drilling with a reduced distribution of oxygen to avoid an excess of sparks, increase the stream can of time after the penetration. Do not increase the pressure not to suffocate the flame. If possible drill with a light inclination what facilitates the evacuation of fused material.

Horizontal hole in a space restricts

Fold the lance in a convenient angle and to move by making it a figure.

Drilling of downward

We can work with the folded lance and with the smaller tips of lance.

It is convenient to increase the pressure of oxygen of 10-15 % to favor the drainage of the lava.

To protect the cement surrounding with the hole of drilling of the lava, it is necessary to scatter some sand around the hole.

Opening of a hole of big diameter

It is possible to act as in the figure opposite, by practising three holes or more, these are arranged around the central axis. The material between the holes affected by the heat is easier to expel.

Holes in a very thick wall

It is possible to make holes until approximately 2m10 with the same type of lance, but in that case it is advisable to use a lance of big diameter for the first part of the hole and to end with a smaller diameter.

Drilling of bottom upward

A drilling of this type can be made by using a simple lance folded to avoid the projection of fused material on the user.

For cut of opening in ceiling

Until 25 cm thicknesses it is possible to use the method detailed on the figure opposite. It is necessary to begin with a vertical hole which it is necessary to widen until allow the insertion of a folded lance which operates the cut in a central zone.

With a good action of percussion you manage easily to end blow.

Wall cut by leaving an already existing opening

The opposite figure illustrates clearly the method of the most economic cut.