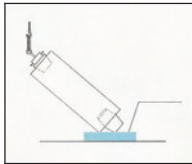


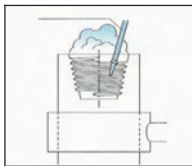
OPERATION GUIDELINES

Graphite electrodes are highly conductive and resistant to high temperature and spallation.

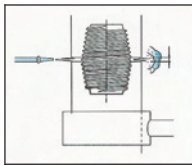
Graphite is a brittle material, with limited flexibility. Handle your graphite electrodes carefully, following the suggestions and directions provided here:



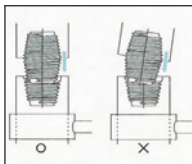
Sketch 1



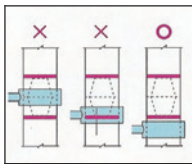
Sketch 2



Sketch 3



Sketch 4



Sketch 5

Storage and Transportation

- Keep all graphite electrodes dry and clean. Avoid potential damage from water, rain and snow.
- Keep the protective caps at each end in place and undamaged.
- Protect the threads from damage by bumping and other abrasions.
- Use care when loading, unloading, and transporting graphite electrodes. Use special hoist tools.
- To avoid damage to a graphite electrode, use a protective mat when moving or hoisting it. (SKETCH 1)

To join graphite electrodes prior to use

1. Remove the protective caps at each end.
2. Clean the sockets and nipples with compressed air to get rid of ash and impurities (SKETCH 2, SKETCH 3)
3. Carefully screw the hoisting plug in tightly. Keep it in good condition to ensure that the whorls of the electrodes are not damaged.
4. See that the electrode and the nipple are in the correct position before the nipple is screwed in to the socket. Use a moment clamp or other mechanical tool (SKETCH 4). Keep the moment clamp in good condition and ensure that it is operated steadily. If you are using a mechanical tool, the manometer should be in a normal state.
5. The hanging system should be reliable. The ropes or chains should run smoothly and move freely on all pulleys.
6. When the electrodes are being hoisted into position for placement in the EAF, prevent the joints from being loosened or dislocated by not allowing the electrodes to swing from side to side.

Use of Electrode Holders

The white mark at each end of the graphite electrode indicates the joining parts of the electrode. Do not allow the electrode holder to nip outside the white marks. Doing so can damage the internal surface of the socket or cause crackle or nipple shear (SKETCH .5)

Useful Tips

Using a steel electrode cover to prevent the upper part of electrode group from being oxidized by flame coming from the electrode inserting holes. The cover can prevent the electrode from being polluted by the ash coming from the electrode inserting holes.

To keep joining parts from loosening, place a nipple-pin on the nipple. At normal temperatures, the pin will remain in a solid state. As the temperature rises, the melting nipple pin will bind the electrode and nipple together.



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