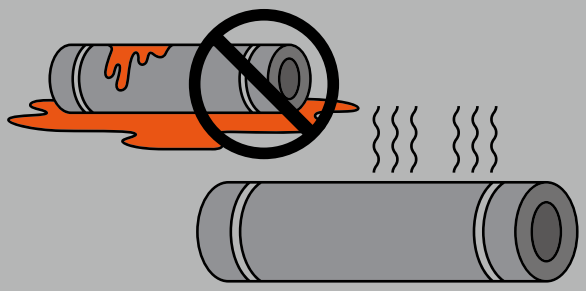
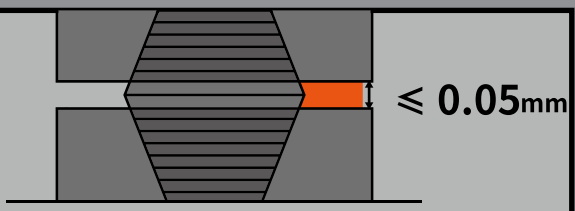
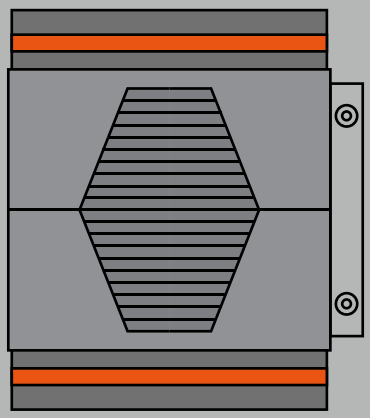
CAUTIONS IN USE OF GRAPHITE ELECTRODES:



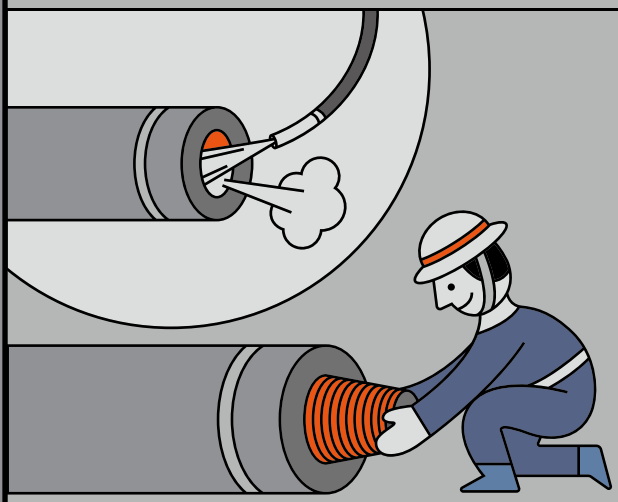
The damp electrodes should be dried before use. Take o☒ the foam cover in the socket and check the completeness of thread.



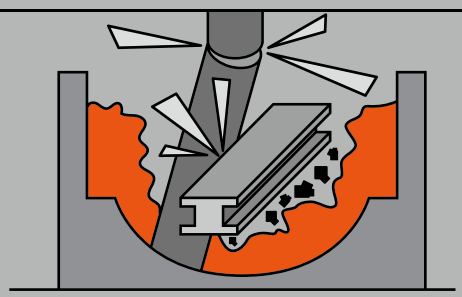
If there is any space between two connected electrodes, please find out the reason and reconnect them. The space should be less than 0.05mm.



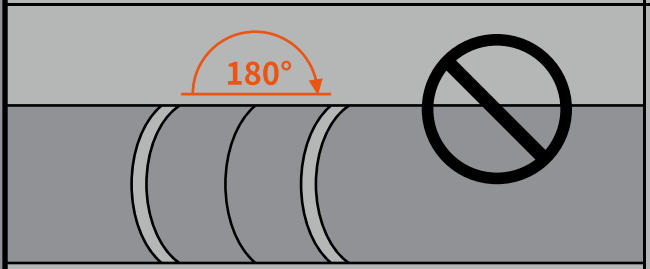
The electrode holder should be held below the safety line, to avoid clamping the socket or nipple.



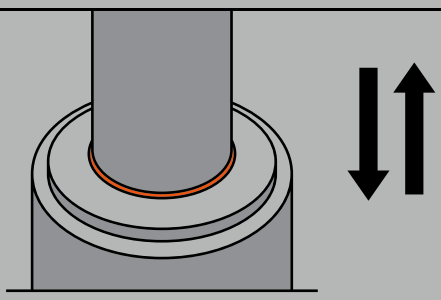
Before connecting the electrode and nipple, please make sure that the pitch plug won't fall o☒. Clean the dust on the electrode face and hole with compressed air, and the new nipple shall be aligned to the center of the socket, and twisted vertically and slowly. The force should be stable and even.



When charging the materials into the electric furnace, the bulk materials and insulators should be placed at the bottom of the electric furnace to avoid electrode fracture.



A set of connected electrodes shall not be placed horizontally to avoid fracture.



Please pay attention to avoid the damage of the electrode caused by the friction collision on the furnace cover when the electrode is rising or falling,

The consumption of graphite electrode in electric steelmaking is mainly related to the quality of the electrode itself, steelmaking operations (such as the grade of smelting steel, oxygen blowing time, charge situation, etc.) and furnace condition of the steel - making (such as old and new furnace, whether there is mechanical breakdown, contin - uous production, etc.). If we only discuss the consumption of the graphite electrode itself, the principle consumption and abnormal performance have shown as follows:

ANALYSIS ON COMMON PROBLEMS IN APPOLICATION

End consumption	End consumption includes the sublimation of graphite materials caused by high temperature of electric arc and the loss of chemical reaction between the end of the electrode and molten steel and slag. The rate of high temperature sublimation at the end depends mainly on the current density through the electrode, and secondly on the diameter of the bilateral electrode after oxida tion. The end consumption is also related to whether the electrode is inserted into the molten steel for carbon increment.
Lateral oxidation	The chemical composition of the electrode is carbon. Under certain condi tions, carbon reacts with air, water vapor and carbon dioxide. The amount of oxidation on the side of the electrode is related to the unit oxidation rate and exposure area. In general, the amount of oxidation on the side of the electrode should account for about 50% of total electrode consumption. In recent years, in order to increase the smelting speed of electric furnace, the frequency of oxygen blowing operation has been increased, resulting in an increase in oxidation loss of the electrode. In the steelmaking process, it is an intuitive method to measure the antioxidant capacity of the electrode by frequently observing the degree of redness of the electrode trunk and the taper of the lower end.
Stump loss	When the electrode is continuously used to connect the upper and lower electrodes, a small electrode or nipple (i.e. residue) is detached due to oxida tion of the body or penetration of cracks. The size of stump loss is related to the shape of the nipple, internal structure of the electrode, the impact and vibration of the electrode column.
Surface peeling and spalling	In the smelting process, surface peeling and spalling will occur upon sudden ly-changing temperature, due to poor thermal shock resistance of the electrode.
Electrode fracture	This includes electrode body fracture and nipple fracture. Electrode fracture is related to the quality of graphite electrodes and nipple themselves, and is also related to steelmaking operations.