

The invention relates to metallurgical heat engineering and concerns plasma melting furnace. A furnace comprises cover with water-cooled rib, which forms a channel with the furnace wall. In lateral walls of furnace symmetrically one to another at an angle of $18-20^\circ$ to bottom plane plasmatrone of indirect action are placed. On furnace wall being opposite from existing taphole a mechanism for additional charge of charge material is disposed. An optimal clearance limit of furnace is proposed, taking into account power of disposed plasmatrone. Technical result: reduction in clearance limit of furnace, increase in degree of use of reducing gas and rate of iron reduction.