Vacuum induction casting slice furnace

Application:

Vacuum induction casting slice furnace adopts vacuum induction melting method, mainly used to produce neodymium iron boron alloy slice.Under the vacuum or protective atmosphere, the furnce is to do the inductive heating, melting and refining to the material of neodymium iron boron, to achieve the constant flow casting and rapidly cool into the thin slice, and then to do the homogeneous treatment inside the water-cooling disc.

Features:

The furnace is vertical structure, composed of furnace body, cover, inductive coil, furnace tilting mechanism, tundish drainage deivce, water-cooling roller casting slice apparatus, furnace bottom, IGBT medium frequency power, vacuum system, water cooling system and electrical control cabinet.

1. Furnace cover uses the structure of double-shell end enclosure with the built-in water cooling jacket. Inner, outer shell and flange are made of stainless steel. Inner, outer sheel and flange are soldered into a integrated body. The cover is opened or closed easily, which brings the large space to facilitate the loading.
2.Furnace body is the double-shell structure with the built-in water cooling jacket. Inner, outer shell and flange are made of stainless steel. Inner, outer sheel and flange are soldered into a integrated body. The sealing groove is made on the surface of flange. O type silicon sealing ring is fixed into the groove.
3. Tundish drainage deivce with a resistance heater is installed below the inductive heater. Tundish drainage deivce comprises stainless steel plate, alumina shaping plate and boron nitride drainage groove. The angle of tundish drainage device can be adjusted according to requirements.
4. Water cooling roller casting slice device is fixed below the boron nitride of tundish drainage device. It consists of water cooling copper roller, driving shaft and vacuum sealing apparatus. The roller is cooled through the injected water so as to keep the roller cool. Driving motor is fitted outside the furnace, the rotary speed of water cooling roller can be regulated according to the requirements.
5. Medium frequency and electrical control cabinet take advantage of IGBT medium frequency power supply. Vacuum melting and casting system is controlled by PLC intelligent computer.
6. Inductive coil is made of rectangle copper pipe rolled into the spiral structure. The crucible is put into the inductive coil (crucible and the material to fix the crucible prepared by the customer). The electric rotary apparatus drives the electrode rotary and makes the crucible casting.
7. Vacuum system comprises oil diffusion pump, roots pump, mechanical pump, filter and controlling valves. Using manu or automatic vacuum valves and digital display vacuometer to achieve the automatic switch between the high and low vacuum.

Main technical parameters:

No.	Model	M.F. Power	Cooling Water consumption	Crucible Capacity	Leak Rate	Ultimate Vacuum	Medium power
1	ZGZ-25	100KW	20m^3/h	25kg	≤3Pa/h	10^{-3}Pa	IGBT
2	ZGZ-50	160KW	25m^3/h	50kg	≤3Pa/h	10^{-3}Pa	IGBT
3	ZGZ-100	200KW	30m^3/h	100kg	≤3Pa/h	10^{-3}Pa	IGBT
4	ZGZ-200	250KW	35m^3/h	200kg	≤3Pa/h	10^{-2}Pa	IGBT
5	ZGZ-500	500KW	50m^3/h	500kg	≤3Pa/h	10^{-2}Pa	IGBT