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JZ-450 DSS Furnace

1 . Function and Character of JZ-450

The JZ-450 DSS furnace can produce 450kg high quality multi-crystal silicon ingots which are produced in less than 60 hours cycle time. The output of the equipment is large, the operation is simple and the interface is easy and clear for the operator. This design saves a lot of time for the operator to deal with the equipment. Thus the handling is optimized and costs are reduced. These DSS furnaces use quartz crucibles coated with high-purity silicon nitride. Through the rise of a temperature at gradient in the thermal insulation layer, directional solidification crystallization is in process. In the whole process of crystallization, only movement occurs in the separated thermal. Therefore, this design of DSS furnace greatly reduces the occurrence of the fault and greatly improves the stability of the furnace.



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2 . Technical Parameters for JZ-450 DSS Furnace

No	Item and Name		Parameter	Additional
1	Ingots/Run	Weight	450 kg	
2		Dimensions (L×W×H)	840×840×270 mm	
3	Crucible Size	L×W×H	870×870×420 mm	
4	Cycle time	One Run	60h	
5	Inner Chamber Vacuum Level	Maximum	Below 1 Pa	
6	Temperature and measurement of Inner Chamber	Maximum Temperature	1575°C	
7	Chamber Size	Inner Diameter	φ1850 mm	
8		Inner Height	2300 mm	
9		Moving Distance of Lower Chamber	900 mm	
10		Moving Distance of Steel Cage	380 mm	
11		Main Chamber (L×W×H)	3800×3200×5000 mm	
12		Platform (Include ladder) (L×W×H)	4950×4760×4960 mm	
13	Weight	Main Chamber	5500kg	
14		Platform	3350kg	

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15	Compressed Air	Pressure	0.4 ~ 0.7MPa	
16		Volume	100L/min	
17	Argon	Pressure	Above 0.3MPa	
18		Consumption	50 ~ 55m ³ /Ingot	
19		Flow Volume Control Range	0 ~ 200L/min	
20	Helium (Optional)	Pressure	Above 0.3MPa	
21		Consumption	5 ~ 6m ³ /Ingot	
22	Cooling Water	Inlet Pressure	Maximum 0.45MPa	
23		Pressure Difference Between Inlet and Outlet	0.25 MPa	
24		Inlet Cooling Water Temperature	≤31°C (Recommend 24±1°C)	
25		Flow Volume	150-180 L/min	
26	Power for Vacuum Pumps	Voltage	380V	
27		Power	11.5kw	
28		Frequency	50Hz	
29		Phase	3 Phase	
30	Power for Electronic Control System	Voltage	380V	
31		Power	10kw	
32		Frequency	50Hz	
33		Phase	3 phase	
34	Power for Heating System	Voltage	380V	
35		Power	165kw	

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36		Frequency	50Hz	
37		Phase	3 Phase	
38	Connector for Tubes	Diameter of the Tube Connector for Pressure Relief Safety Valve	φ150 mm	
39		Diameter of Argon Tube Connector	φ16 mm	
40		Diameter of helium Tube Connector	φ16 mm	
41		Diameter of Inlet and Outlet of the Cooling Water	Rc2"	
42	Vacuum Pump System	Vacuum Speed	300L/S	
43		Diameter of Main Inlet of the Pump	φ150 mm	
44		Diameter of Subsidiary Inlet of the Pump	φ16 mm	
45		Diameter of the Outlet	φ76 mm	
46	Forklift (Optional)	Lift Height	Maximum 1686 mm	
47		Lift Weight	Maximum 1200kg	
48		Length of the Fore	1588 mm	
49		Width of the Fork	1120 mm	

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3. Standard Configuration :

No	Item and Name		Additional
1	Main Chamber	Main Chamber Frame	
2		Vacuum Chamber	
3		Lower Chamber Driving	
4		Insulation Driving	
5		Hot Zone	
6		Gas Circle and other Driving System	
7		PC and PLC Control System	
8		Heating Power	
9		Temperature Measurement	
10		Pressure Measurement	
11		Pressure Relief Protection Device	
12		Coolant Water System	
13	Vacuum Pump System		
14	Platform		
15	Forklift		Optional

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