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JZ-270 DSS Furnace

1 . Function and Character of JZ-270

The JZ-270 DSS furnace can produce 270kg high quality multi-crystal silicon ingots which are produced in less than 48 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-270 DSS Furnace

| No | Item and Name | | Parameter | Additional |
|----|--|---------------------------------------|-------------------|------------|
| 1 | Ingots/Run | Weight | 270 kg | |
| 2 | | Dimensions (L×W×H) | 690×690×245 mm | |
| 3 | Crucible Size | L×W×H | 720×720×420 mm | |
| 4 | Cycle time | One Run | 48h | |
| 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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