



BHARAT HEAVY ELECTRICALS LIMITED
CENTRAL FOUNDRY FORGE PLANT

VERTICAL CENTRIFUGAL CASTING MACHINE

SPECIFICATION - FT/SP/48

1.0 DESCRIPTION:

This specification governs the requirements of Vertical Centrifugal Casting Machine for casting of cylindrical bush castings in different metal grades.

2.0 OBJECTIVE:

The vertical centrifugal casting machine will be used for casting of cobalt base stellite bushes for thermal projects, copper base alloy bushes for hydro projects and cylindrical steel castings requiring upto 1500 kg in permanent steel moulds or in sand moulds.

3.0 SCOPE:

Scope of supply includes design, manufacture, supply, erection and commissioning at our works of the vertical centrifugal casting machine. The specification covers the technical and general requirements of the machine.

4.0 TECHNICAL REQUIREMENTS

4.1 Machine Construction

4.1.1 MECHANICAL

1. The construction of the machine should be sturdy enough to take dynamic loads of the centrifugal die/sand mould and the molten metal used to cast the items. The machine is to be dynamically balanced and free from vibrations.
2. The machine should be complete with centrifugal die heating arrangement, die cooling arrangement by jet water and casting stripping arrangement.
 - 2.1 The die heater should be of LPG fired type, capable of uniformly heating the die to a temperature of 300 °C. The gas available is LPG-air mixture (1:5 ratio) having a calorific value of 550 BTU.
 - 2.2 Die cooling arrangement should be of water jet impinging throughout the height of the die and should uniformly cool the die.
 - 2.3 Casting pulling tong to be loaded on EOT crane hook, capable of pulling out casting with inside diameter in the range 300 to 700 mm should be provided.

3. The machine should be capable of making cylindrical castings of outer diameter upto 1000 mm and height of upto 1000 mm, dynamically balanced for taking total load of 2000 kg (inclusive of metal and die assembly). The adopted table diameter should be 1700 mm minimum.

4.1.2 ELECTRICAL

1. The machine is to be provided with electronically controlled variable speed drive including a digital speed indicator and integrally mounted brake for speed control.
2. Since the machine is to work in dusty and sandy atmosphere, the electricals including the motor should be suitable for such conditions. Motor and control panel should be dust and flame proof.
3. All electricals should be tropicalised for 50°C and 95% humidity.
4. The electricals should be suitable for 415±10%, 3-Phase, 50Hz. All motors and starters should be of reputed make.




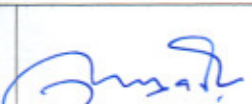
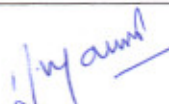
5.0 DETAILS TO BE INCLUDED IN THE OFFER:

Following details are to be included while submitting the offer

1. General arrangement drawing showing the
 - (a) Space requirements
 - (b) General features
2. Type of motors, starters, capacity and make
3. Max. and minimum RPM of the machine.

6.0 MISCELLANEOUS:

- 6.1 The equipment is to be guaranteed against defective workmanship, design and material for a period of 36 months from the date of commissioning.
- 6.2 Supplier should supply four copies of operational, maintenance and spare part manual alongwith the machine.

Prepared by	Checked & Approved by			
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