



Indian Institute of Technology Kanpur

Department of Materials Science & Engineering

Enquiry no.: IITK/MSE/KB/2012-2013/09

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Last Date: 12 February 2013

Enquiry for Arc melting –cum-suction casting facility

We would like to purchase a Arc Melting –cum-suction casting facility for our laboratory scale experimentation. Offered product should take into account specifications given below.

Specifications for the facility:-

1. Modular Non consumable vacuum arc melting furnace with accessories and spares.

Vacuum arc furnace for melting metals and metal alloys capable of operation in standing position with spring supported electrode mechanism which is bellows sealed for vacuum integrity during electrode movement.

Chamber:

250mm dia (nominal) SS 304 chamber with appropriate ports for viewing and attaching accessories

Copper hearth:

2. Nos water cooled copper crucibles for melting alloy buttons and for suck casting. The one for melting alloys will have about 150mm dia with 9 nos hemispherical (dia 25mm) troughs and the other will have 2 nos of 100mm long and 15mm wide finger shaped troughs, (or as required) Hydraulic/motorised lifting and locking mechanism and LED lighting arrangement are required

Copper electrode:

Water cooled copper electrode for holding 6mm dia tungsten rod with a collet type mechanism (for ease of fixing and removing the tungsten rod), Teflon insulators and heat shield. Hangman type spring loaded electrode holder assembly for operation in standing position. The electrodes will be at about 60” from the floor level.

Suction Casting Facility

Suction casting facility along with 2 nos. of water cooled copper mould are required.

Vacuum and gas purging system

Pumps and gauges will be user provided. Gate valve, Dial gauge for above atmospheric pressure (upto 1.5 bar). Valves and vacuum manifolds consisting of three way combination valve, needle valve for gas and automatic excess pressure relief valve. The Vacuum System will consist of oil free rotary pump and Turbo pump.

Rack mounted Ar gas purifier system for oxygen and moisture removal purpose along with suitable piping and valves required.

Power supply: 400A solid state welding power supply with foot switch, water cooled flexible power cables for electrode and hearth. Water flow switch and necessary plumbing with SS manifold and flexible connections

Safety and interlocks: Lighting arrangement, water flow switch etc interlocked with arc striking. Auto darkening welding glass for viewing window (4 Din to 11 DIN controllable) Additional provision for fixing welding glass on the port.

Accessories and spares: Welding glass (DIN11 shade) 1 nos, tungsten rod 6mm dia 2 nos,

Acceptance criteria: He leak testing upto 10-10 torrlit/sec, and any melting trial by user designated person at our factory.

Inspection and installation: Inspection will be done at manufacturer's facility and installation at user facility at free of cost.

Term and conditions

1. Delivery period 12 weeks valid of P.O
2. Free delivery. (road permit will be provided)
3. Excise exemption certificate to be provided

Address the quotations to:



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