

मिश्र धातु निगम लिमिटेड

(भारत सरकार का उपक्रम)
(मिनी रत्ना कम्पनी)

सूपर आलाय्स प्लांट

डाकघर : कंचनबाग, हैदराबाद - 500058. भारत

दूरभाषा : 040-24343861, 24340149, 24340136

फैक्स : 040-24340764



AN ISO 9001 : 2008 COMPANY

PURCHASE DEPARTMENT
CIN : U14292TG1973GOI001660

MISHRA DHATU NIGAM LIMITED

(Govt. of India Enterprise)
(MINI RATNA COMPANY)

SUPERALLOYS PLANT

P.O. Kanchanbagh, Hyderabad - 500 058. India

Phone : 040-24343861; 24340149, 24340136

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21/05/2019

Subject: Corrigendum for Technical Modifications

Tender Ref. No: MDN/PUR/0490011/ADVT/029/19-20 Dt. 03/05/2019

Tender Title: DESIGN, MANUFACTURING, SUPPLY, ERECTION AND COMMISSIONING OF 8T CAPACITY VACUUM INDUCTION MELTING FURNACE

This has reference to subject Tender. The Corrigendum to the subject Tender is hereby issued. All participating bidders are requested to note the changes in respect of the above subject tender.

Technical Specifications (Referred as Part – II of the Tender):

<u>ORIGINAL SPECIFICATION</u>	<u>CORRIGENDUM</u>
<p><u>TECHNICAL SPECIFICATION OF VIM 8 T FURNACE</u></p> <p>3.1.1 Top pouring through tundish :</p> <p>a) 1 ingot : 550 mm dia x 5000 mm long or</p> <p>b) 1 ingot : 650 mm dia x 3600 mm long or</p> <p>c) 3 ingots : 350 mm dia x 4500 mm long or</p> <p>d) 2 ingots : 480 mm dia x 3600 mm long</p>	<p>3.1.1 Top pouring through tundish :</p> <p>a) ingot : 550 mm dia x 5000 mm long or</p> <p>b) ingot : 650 mm dia x 3600 mm long or</p> <p>c) 3 ingots : 350 mm dia x 4500 mm long or</p> <p>d) 2 ingots : 480 mm dia x 3600 mm long</p> <p>Max. Mould diameter is 1350 mm and height 5200mm</p>
<p>3.2 VACUUM SYSTEM :</p> <p>3.2.1 Ultimate vacuum : < 1×10^{-4} mbar in clean and dry melting chamber</p> <p>3.2.2 Working Vacuum : 1×10^{-2} to 1×10^{-3} mbar with min. of 8000 Kg Molten charge after refining .</p> <p>3.2.3 Pump down time :</p> <p>a) Melt chamber : 30 minutes max to attain < 1×10^{-3} mbar</p> <p>b) Mould chamber : 20 minutes max to attain < 1×10^{-3} mbar</p> <p>c) Bulk charger : 3 minutes max to attain < 1×10^{-3} mbar</p> <p>d) Tundish chamber : 3 minutes max to attain < 1×10^{-3} mbar</p> <p>3.2.4 Vacuum Gauges :</p> <p>Suitable digital vacuum gauges pirani / penning type of superior/reputed make ie Pfeiffer/Edwards/ Inficon/ Leybold shall be provided for melt, mould and Tundish chambers. A multi point system shall also be provided to monitor vacuum levels and shall give input to the PLC system, at different locations in vacuum manifold, in between various vacuum pumps and furnaces as well as to monitor performance of the pumps.</p>	<p>3.2 VACUUM SYSTEM :</p> <p>3.2.1 Ultimate vacuum : < 5×10^{-4} mbar in clean and dry melting chamber</p> <p>3.2.2 Working Vacuum : 1×10^{-2} to 1×10^{-3} mbar with min. of 8000 Kg Molten charge after refining .</p> <p>3.2.3 Pump down time :</p> <p>a) Melt chamber : 30 minutes max to attain < 1×10^{-3} mbar</p> <p>b) Mould chamber : 20 minutes max to attain < 1×10^{-2} mbar</p> <p>c) Bulk charger : 3 minutes max to attain < 1×10^{-2} mbar</p> <p>d) Tundish chamber : 3 minutes max to attain < 1×10^{-2} mbar</p> <p>3.2.4 Vacuum Gauges :</p> <p>Suitable digital vacuum gauges pirani/penning type of superior / reputed make ie Pfeiffer /Edwards /Inficon /Leybold/MKS (USA) shall be provided for melt, mould and Tundish chambers. A multi point system shall also be provided to monitor vacuum levels and shall give input to the PLC system, at different locations in vacuum manifold, in between various vacuum pumps and furnaces as well as to monitor performance of the pumps.</p>

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<p>3.3.12 MELTING CRUCIBLE :</p> <p>Suitable refractory lining design and specification of lining material for melting in crucible shall be made for melting at vacuum level $< 1 \times 10^{-3}$ mbar. Technical specification, lining preparation procedure, sintering cycle (if any) shall be provided. Lining material for 5 linings shall be provided along with supply along with necessary tools such as Electro-Mechanical Vibrator / compactor with suitable power and control panel</p>	<p>3.3.12 MELTING CRUCIBLE :</p> <p>Suitable refractory lining design and specification of lining material for melting in crucible shall be made for melting at vacuum level $< 1 \times 10^{-3}$ mbar. Technical specification, lining preparation procedure, sintering cycle (if any) shall be provided. Lining material for 5 linings shall be provided along with supply along with necessary tools such as Electro-Mechanical Vibrator / compactor with suitable power and control panel . Around 25 nos of tundish linings (with complete set) and three tundish steel frames shall be provided . Tundish and tundish lining drawings shall be provided along with GA drawings, as per clause No. 10.</p>
<p>9.0 CIVIL FOUNDATION</p> <p>All necessary civil foundation / cellars if any shall be made by the Purchaser. However all necessary civil drawings shall be submitted by the successful bidder , within one month after placement of order along with equipment loads and sizes. Tenderer shall supply necessary inserts and foundation bolts of required specification, for successful mounting of the equipments.</p>	<p>9.0 CIVIL FOUNDATION</p> <p>All necessary civil foundation / cellars if any shall be made by the Purchaser. However all necessary civil drawings shall be submitted by the successful bidder, within one month after placement of order along with equipment loads and sizes. Tenderer shall supply necessary inserts, rails, and foundation bolts, foundation embedments of required specification, for successful mounting of the equipments. (within 4 month of effective date of contract)</p>
<p>10.0 DRAWINGS AND DOCUMENTS</p> <p>The Tenderer shall submit Three Sets of General Arrangement, Layout, Foundation drawings including location of equipment control panels, furnace coil etc with dimensional details, elevation etc along with the offer.</p> <p>List of major sub-assemblies indicating rating, make, type and country of origin shall be submitted along with the offer. This will also include technical write-ups of major assemblies.</p> <p>The successful bidder shall forward following documents along with the supply:</p> <p>a) 5 sets of operating and Maintenance manuals for each system.</p> <p>b) 5 sets of drawings in hard copy form and one copy in soft copy form.</p> <p>The successful bidder shall submit the Assembly and Sub-assembly drawings of all systems of equipment, drawings for Wear-out parts and major sub-assembly</p>	<p>DRAWINGS AND DOCUMENTS</p> <p>The Tenderer shall submit Three Sets of General Arrangement, Layout, reference Foundation drawings including location of equipment control panels, furnace coil etc with dimensional details, elevation etc along with the offer.</p> <p>Civil assignment drawings with load data , details of trenches , etc, within one month from the effective date of contract .</p> <p>List of major sub-assemblies indicating rating, make, type and country of origin shall be submitted along with the offer. This will also include technical write-ups of major assemblies.</p> <p>The successful bidder shall forward following documents along with the supply:</p> <p>a) 5 sets of operating and Maintenance manuals for each system.</p> <p>b) 5 sets of drawings in hard copy form and one copy in soft copy form.</p> <p>The successful bidder shall submit the Assembly and Sub-assembly drawings of all systems of equipment, drawings for Wear-out parts and major sub-assembly which need</p>

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<p>which need replacement in long terms, Bill of Materials, Schematic Circuit diagrams for electrical, electronic and instrumentation, vacuum, hydraulic, cooling water and refractory systems.</p> <p>Repairing procedure for furnace coil such as replacement of section of winding, vacuum and temperature insulation against corona shall be indicated by the tenderer.</p> <p>The manuals shall comprise the information of all bought out items and standard accessories along with specification and source of supply.</p>	<p>replacement in long terms, Bill of Materials, Schematic Circuit diagrams for electrical, electronic and instrumentation, vacuum, hydraulic, cooling water and refractory systems.</p> <p>Repairing procedure for furnace coil such as replacement of section of winding, vacuum and temperature insulation against corona shall be indicated by the tenderer.</p> <p>The manuals shall comprise the information of all bought out items and standard accessories along with specification and source of supply.</p>
<p>11.0. SUPPLY , ERECTION AND COMMISSIONING OF EQUIPMENTS</p> <p>Supply, Erection and Commissioning shall be completed within 12 months, from the effective date of contract. (Detailed description given at Clause No. 19)</p>	<p>11.0 SUPPLY, ERECTION AND COMMISSIONING OF EQUIPMENTS</p> <p>Supply, Erection and Commissioning shall be completed within 14 months, from the effective date of contract. (Detailed description given at Clause No. 19)</p>
<p>12.0. UTILITIES AND SERVICES at MIDHANI :</p> <p>12.1 Electric Power</p> <p>12.1.1 Electric Power will be available in the shop as follows:</p> <p>a) 11000 Volts, 3 – phase, 50 Hz (within 30 meters)</p> <p>b) 415 / 440 volts, 3 – phase, 4 wire, 50 Hz. (within 15 meters)</p> <p>Both systems will be grounded at the transformer neutral. Variation in supply voltage and frequency will be limited to $\pm 5\%$ and $\pm 3\%$ respectively.</p> <p>12.1.2 If any equipment is designed for a supply different from the above, tenderer shall provide necessary transformers, conversion equipment, etc.</p>	<p>12.0 UTILITIES AND SERVICES at MIDHANI :</p> <p>12.1 Electric Power</p> <p>12.1.1 Electric Power will be available in the shop as follows:</p> <p>a) 11000 Volts, 3 phase, 50 Hz (within 30 meters)</p> <p>b) 415 / 440 volts, 3 – phase, 4 wire, 50 Hz. (within 30 meters)</p> <p>Both systems will be grounded at the transformer neutral. Variation in supply voltage and frequency will be limited to $\pm 5\%$ and $\pm 3\%$ respectively.</p> <p>12.1.2 If any equipment is designed for a supply different from the above, tenderer shall provide necessary transformers, conversion equipment, etc.</p>
<p>17.0 WORK BY PURCHASER</p> <p>The following work will be executed by the purchaser either departmentally or by others and are excluded from the scope of work of the tenderer.</p> <p>17.1 All foundation work, civil engineering work and building structures.</p> <p>17.2 Fabrication of foundation bolts and embedment's and of ordinary grades of steels, as per successful tenderer drawings.</p>	<p>17.0 WORK BY PURCHASER</p> <p>The following work will be executed by the purchaser either departmentally or by others and are excluded from the scope of work of the tenderer.</p> <p>17.1 All foundation work, civil engineering work and building structures.</p> <p>17.2 Fabrication of foundation bolts and embedment's and of ordinary grades of steels, as per successful tenderer drawings.</p> <p>Delete clause No. 17.2</p>

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19.0 DELIVERY

19.1 Supply, Erection and Commissioning shall be completed within 12 months, from the effective date of contract.

S. No	Mile Stone	Delivery Schedule
1	Submission of Load data & drawings	0 to 2 nd Month
2	Supply of Equipments	4 th to 10 th month
3	Erection	8 th to 11 th month
4	Commissioning	9 th to 12 th month

19.0 DELIVERY

19.1 Supply, Erection and Commissioning shall be completed within 14 months, from the effective date of contract.

S. No	Mile Stone	Delivery Schedule
1	Submission of Load data & drawings	0 to 4 th Month
2	Supply of Equipments	5 th to 11 th month
3	Erection	8 th to 12 th month
4	Commissioning	13 th to 14 th month

It is advised that the above may please be taken into consideration while submitting your offer and others tender stipulation remains unchanged. You are advised to submit your offer accordingly.

For MISHRA DHATU NIGAM LIMITED


DY. MANAGER
(PURCHASE)