

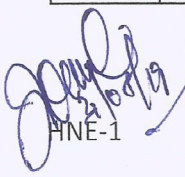
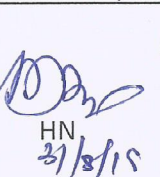
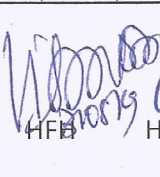
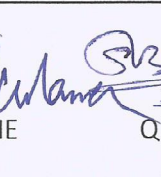
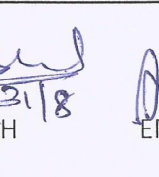

TECHNICAL SPECIFICATION – REVAMPING OF ELECTRICAL PANEL OF PIT CARBURISING F/C

A. Existing Machine Details			
SL	DETAILS	DESCRIPTION	FIRM'S CONFIRMATION (Strike out whichever is not applicable. Provide details where called for)
1	Furnace	Pit Type Gas Carburising Furnace	Noted / Not Noted
2	Type	WGSRU-60/160	Noted / Not Noted
3	Furnace No	DF - 578	Noted / Not Noted
4	Temp	950°C	Noted / Not Noted
5	Heating	40KW per Zone	Noted / Not Noted
6	No. of Zones	2	Noted / Not Noted
7	Total Heating	80KW	Noted / Not Noted

B. MANDATORY TERMS		
SL	DETAILS	FIRM'S CONFIRMATION (Strike out which ever is not applicable. Provide details where called for)
1	Warranty: 12 months from the date of commissioning or 18 months from the date of supply.	Confirmed / Not confirmed

c. SCOPE OF SUPPLY:

SL.NO	BEML REQUIREMENT		FIRM'S CONFIRMATION (Strike out which ever is not applicable. Provide details of make where called for)
01	CP Profile Multi-function Controller Specification: No. of Program Cycles: 40 (Minimum) With 6-7 Segments of Different Set Temperatures/ CP & Timings per Cycle. Carbon Potential Control: 1 Oxy Probe (Optional of CP/ mV Control) Temperature Control: 3 No's of Thermocouples Analog Outputs - 2 Digital Outputs - 4 Digital Inputs - 4 Communication: RS-485 Modbus / Ethernet Make: PMA/ WEST/ PROTHERM/ EUROTHERM	1 No.	Confirmed / Not confirmed Make: indicate
02	Thyristor Power Controller Rating: 100A, 3Ph, 360 – 500 V AC Application: for 40KW Ni-Cr Resistive Load through 45KVA Step Down Heating Transformer per Zone Display: LCD indicating Output Current & % of Output Power Options: Current Limiting & Different Firing methods Output: 4-20 mA / 0-20mA/ 0-10V DC & Relay for Alarms With Semi-Conductor Fuses & Inbuilt cooling Fan Make: CCI/ PMA/ AEG/ SIEMENS	2 No's	Confirmed / Not confirmed Make: indicate

 HNE-1
 HN
 HFB
 HE
 QH
 EMNP

06	Provision of Digital Ammeters (With 3 Phase Currents on single display) for both Lower Zone Heating & Upper Zone Heating	Confirmed / Not confirmed
07	Programming of CP Profile Multi-function Controller for Total No. of Processes for Pit Carburising Furnace as per our requirement.	Confirmed / Not confirmed
08	Changing of Firing Methods of Thyristor Power Controller as per our requirement	Confirmed / Not confirmed
09	Any other related Electrical Control Panel works to be carried out by firm	Confirmed / Not confirmed
10	Applying Paint for Total Panel	Confirmed / Not confirmed
11	Providing Training for Operation, Maintenance & Trouble shooting of CP Controller & Thyristor Power Controller.	Confirmed / Not confirmed

E. INSTALLATION AND COMMISSIONING :

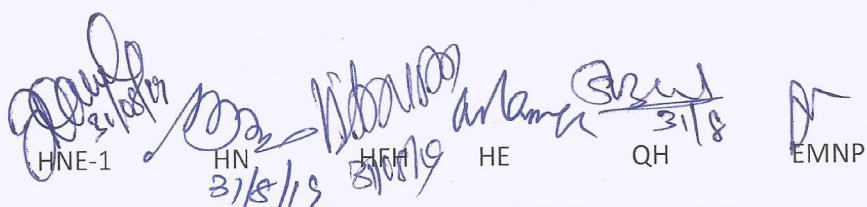
SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	<ul style="list-style-type: none"> Furnace should be demonstrated for satisfactory functioning and performance prove out at BEML. Prove-out of Performance for 8 Charges (Approx. time of each charge - 15 Hrs) 	Confirmed / Not confirmed

F. TERMS & CONDITIONS:

SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	Firm may visit our works before submitting their offer to study our exact requirement.	Confirmed / Not confirmed
02	Firm has to bring all the Necessary Tools & Equipments to carry out the works as per scope.	Confirmed / Not confirmed
03	Firm should bring Technicians & workmen who are covered under ESI & PF only	Confirmed / Not confirmed
04	All the Panel works shall be completed within 10 Days from the day the Furnace is handed over.	Confirmed / Not confirmed
05	Electrical Control Panel as per our Scope of Supply should be supplied within 8 weeks after release of Purchase Order.	Confirmed / Not confirmed
06	A copy of Electrical Drawing of existing control Panel will be provided if required after release of Purchase Order .	Confirmed / Not confirmed
07	Firm should have commissioned Two No's of similar Panels (CP Controller with Thyristor Power Controller) in the past Seven Years. Commissioning Report/ MOM should be enclosed along with the offer	Confirmed / Not confirmed

G. DOCUMENTATION:

SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	Firm has to provide GA Drawing of Electrical Control Panel for Approval before supply.	Confirmed / Not confirmed
02	Firm has to provide Two Sets of Electrical Circuit Drawings.	Confirmed / Not confirmed
03	Firm has to provide Manuals for CP Controller & Thyristor Power Controller.	Confirmed / Not confirmed
04	Firm has to provide Calibration Reports for CP Controller & Temperature Controller.	Confirmed / Not confirmed



HNE-1 HN HNH HE QH EMNP

Finance Rep. HP