

# HEAVY MACHINE BUILDING PLANT HEAVY ENGINEERING CORPORATION LIMITED

ISO 9001:2000

(A Govt. of India Enterprise) Ranchi - 834 004 (INDIA)

> Phone : 0651-2401271, 2401349 Fax : 0651-2401166, 2401571 E-mail : purhmbp@hecltd.com

> > Dated: 24.02.2018

Materials Management Division

## **OPEN TENDER**

No. PUR/HMB/18/171146/WA- 5290

Dear Sir,

We request you to submit your most competitive offer for the following item as per the given schedule:

**ENQUIRY SCHEDULE** 

ENQUIRT SCHEDULE							
SI.	Item Code	Description of Stores		Remark			
No.			(No)	s			
01.	6152020100	Supply, erection and commissioning of Digitally controlled IGBT based, Inverter based synergic MIG/MAG welding machine having both CC/CV characteristics suitable for spatler free heavy duty Welding with specifications given in specification cum compliance certificate each machine should consists of the following units:-					
		I. 400A digitally micro processor controlled IGBT based welding power source: 1 no.  II. Wire feeder unit: 1 no  III. Function panel: 1 no  IV. Water cooling unit: 1 no  V. 3.5 m water cooled MIG welding torch: 1 no  VI. Under carriage(welding trolley): 1 no  VII. 15 m inter connection cable assembly: 1 no  VIII. 50 mm² earthing cable connector and earth clamp 5 m: 1 no  Note:  The Machine should be of good quality, fulfilling the specification equivalent to model no: TPS 400i of FRONIUS make or better of another reputed make i.e., LINCOLN, KEMPPI etc.					

#### Note:

- 1. Qualifying conditions for participating in the tender are indicated in the enclosed annexure.
- 2. Please send your quotation in Two Bid System. (i) Techno-commercial bid with EMD. (ii) Price bid

In Two part bids as mentioned above, the technical and commercial aspects to be sealed in a separate envelope super scribing Part-I on it. DD towards EMD is to be enclosed along with this techno commercial bid. Without EMD, offer will not be considered, The Price bid to be super scribed as Part – II & it should be sealed separately.

Both the sealed envelope are to be sealed in a separate envelope..

- 3. Please mention Enquiry No. & Date of opening at the TOP OF THE ENVELOPE.
- 4. Price is to be quoted on F.O.R. Stores/HMBP, Ranchi basis.

Quotation to be submitted in the office of Purchase Deptt./ HMBP during working hours.

Schedule of Tender receipt by 12.03.2018 upto 1.00 PM. Opening of Techno commercial bid (Part-I) on 12.03.2018, at 3.00PM TENDERS must be submitted in sealed cover with Tender No. and the Due date superscribed on it failing which Tenders may be ignored. Quotation is to be submitted in the office of Purchase Deptt./HMBP, HEC Ltd., P.O. Dhurwa, Ranchi -834004 during working hours (8AM to 5 PM) on all working days.

#### Note:

- 1. The rate quoted shall be inclusive of all packing & forwarding. Freight charges to be mentioned separately, if applicable
- 2. The Price quoted by the tenderer should be exclusive of GST. The rate and nature of GST applicable should be shown separately. GST will be paid to the seller at the rate at which it is liable to be assessed or has actually been assessed on the date of supply provided the transaction of sale is legally liable to GST and within the delivery period. Any change on the taxes & duty structure beyond the delivery period will not be considered by HEC.
- 3. The rates quoted must be firm and the offers made must remain open for acceptance for three months from the date of opening of the tender.
- 5. Quotations erased or over written are likely to be rejected unless all corrections are authenticated with the tenderer's signature.
- 6. Delivery date offered must be specified and guaranteed.
- 7. Erection and commissioning of the equipments will be in the scope the supplier free of cost.
- 8. 90% payment will be made against Tax Invoice within 60 days of the receipt of supplies at destination duly inspected. Balance 10% payment will be made against its supplementary bill after successful erection and commissioning of the equipments at site duly certified by the user deptt and against submission of PBG of 10% of the contract value.
- 9. PBG of 10% of the contract value is to be submitted by the supplier after successful erection and commissioning of the equipment to cover the guarantee period of the equipment.
- 10. Full particulars i.e. specification, literature and / or drawing wherever applicable, as indicated in enclosed annexure, should be submitted along with the quotation. The brand and 'Make' name must be Indicated.
- 11. The Corporation does not pledge itself to accept the lowest or any tender and reserves to itself the right of accepting the whole or any part of tender or portion of the quantity offered and you shall supply the same at the rate quoted.
- 12. Supplies will be subject to Inspection by our Inspection wing / or inspection agencies prescribed by us.
- 13. Order placed as a result of this tender will be subject to the Corporation's General Terms and Conditions of contract which can be down loaded from our website (www.hecltd.com)
- 14. Corporation reserves the right to call for and examine at any time the books of accounts and other documents and papers of the firm for the purpose of ascertaining whether any excess payments has been made or the firm likely to be received / received undue benefit out of execution of the particular contract.
- 15. Tender Fee (**non refundable**): Tender fee of Rs.500.00 in the form of DD on the State Bank of India Ranchi, Hatia Branch in favour of Heavy Engineering Corporation Limited, Ranchi-834004 is to be submitted along with techno commercial bid.
- 16. **Earnest Money** Earnest money to the extent of Rs.70000.00 will have to be deposited by demand draft on the State Bank of India, Ranchi Hatia Branch, in favour of Heavy Engineering Corporation Ltd. Ranchi.- 4 along with techno commercial bid. The firm's registered with NSIC / SSI or under DGS&D Rate Contract are exempted from submission of EMD on producing relevant documents along with techno commercial bid.
- 17. **Security Deposits** Successful tenderers will have to deposit security equal to 5 percent of the contract value within the desired period. Failing this, the contract will be cancelled at the risk and expenses of the suppliers. The vendor should confirm its acceptance in techno-commercial bid.
- 18. Material supply should be guaranteed for 18 months from the date of supply or 12 months from date of use, whichever is earlier. The vendor should confirm its acceptance in techno-commercial bid.

19. Delivery: The time for and the date of delivery of the Stores stipulated in the acceptance of tender shall be deemed to be the essence of the contract and delivery must be completed not later than the dates specified therein.

#### Otherwise:

- a) The purchaser to recover from the contractor a sum of 0.5 % per week (completed week) of the price of the stores(upto maximum 10 %) as liquidated damages, which the contractor has failed to deliver as aforesaid or
- b) The purchaser may procure the undelivered stores / similar items from elsewhere, without notice to the contractor at the risk of the contractor without canceling the contract in respect of the consignment not yet due for delivery or,
- c) to cancel the contract or a portion thereof.
- Income Tax Clearance Certificate All tenderers shall submit along with their tender an Income Tax Clearance Certificate duly countersigned by the Income Tax Officer of the circle concerned under the seal of the office. Copy of Permanent Account No. (PAN) (of Income Tax) to be enclosed with the bid.
- 21. There is no obligation on our part to accept delayed / late tenders received beyond the scheduled date and time of received of tender are liable to be summarily rejected.
- 22. Quoting firms should furnish certificate confirming authorized distributor / stockiest of the offered equipment along with the details as mentioned in the enclosed annexure.

#### Special .Note:

While submitting tender pl. mention your Registration No. with HEC as a registered vendor with valid paper. If not pl. get registered your firm with HEC Limited immediately.

(D.K. Naskar) Sr.DGM/(I/c)/MM/HMBP/HEC Ltd.

# **Annexure**

# **Commercial Terms & Conditions**

SI. No	Contents	Desired by HEC		Bidders Confirmation
1	Price Term (Ex-Works/FOR HMBP)	FOR HMBP Stores	:	
2	Packing and Fwd.	To be indicated if any	:	
	(Extra/Included/Not Applicable)	-		
3	GST ( rates as applicable) i. CGST. ii. SGST. iii. IGST.	To be quoted separately.	:	
4	Payment Terms	90% payment will be made against Tax Invoice within 60 days of the receipt of supplies at destination duly inspected. Balance 10% payment will be made against its supplementary bill after successful erection and commissioning of the equipments at site duly certified by the user deptt and against submission of PBG of 10% of the contract value.	:	
5	PBG	PBG of 10% of the contract value is to be submitted by the supplier after successful erection and commissioning of the equipment to cover the guarantee period of the equipment.		
6	Validity of Offer	4 Months from date of opening of tender.	:	
7	Price Variation Clause	Not Applicable	:	
8	Delivery Schedule	Within 15 days from the date of P.O.,	:	
9	Inspection	By QCA/HMBP, or his representative.	:	
10	Insurance charges if any	To be quoted separately	:	
11	Freight Charges if Ex-Works	To be quoted separately	:	
12	Guarantee Certificate & Clause	To be provided	:	
13	L/D Clause Acceptable (Yes/No)	To be Accepted	:	
14	Document Cost of Rs. 500.00 (Non refundable)	DD in favour of Heavy Engineering Corporation Ltd. payable at State Bank of India, Ranchi alongwith Technocommercial Bid.		
15	EMD of Rs. 70000.00.	DD/BG in favour of Heavy Engineering Corporation Ltd. payable at State Bank of India, Ranchi alongwith Technocommercial Bid.	:	
16	SD	@ 5% of Contract Value	:	
17	Risk purchase	To be accepted	:	
18	GST Registration No.	To be provided	:	
19	Name of the contact person with phone no. & e-mail address	To be provided	:	
20	Special terms (If Any)		:	
21	GCC	To be accepted	:	

# HEAVY ENGINEERING CORPORATION LTD. Bue Date:

Name- Mr. D.K. Naskar,

Desig.- Sr. DGM(I/C)MM/HMBP,

Ph no.:- 0651 2400919, Email- purhmbp@hecltd.com

No.:

Supplier Qtn.

Date :

24.02.2018

# SPECIFICATION CUM COMPLIANCE CERTIFICATE OF INVERTER BASED SYNERGIC MIG WELDING MACHINE

### NOTE:-

- 1 Vendor must submit complete information against clause no. 14. The offer meeting this clause would only be processed.
- 2 The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.
- 3 The offer and all documents enclosed with offer should be in English language only.

NAME & ADDRESS OF THE SUPPLIER:				NAME & ADDRESS OF THE INDIAN AGENT:									
TELEPHONE NOS.:				TELEPHONE NOS.:									
FAX NOS.:				FAX NOS.:									
E-MAIL	ADDRESS:								E-MAIL ADDRESS :				
SCOPE:	SCOPE: SUPPLY, ERECTION & COMMISSIONING OF INVERTER BASED SYNERGIC MIG WELDING MACHINE COMPLYING WITH SPECIFICATIONS												

SCOPE: SUPPLY, ERECTION & COMMISSIONING OF INVERTER BASED SYNERGIC MIG WELDING MACHINE COMPLYING WITH SPECIFICATIONS AS BELOW

SNO	DESCRIPTION FOR HMBP/HE	C R	EQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED	DEVIATIONS	REMARK S
		S	PECIFICATIONS FOR SYNERGIC MIG/MAG WELDI	NG MACHINE	•	•	•
1	Inconel etc on continuous duty cy	cle.	G welding machine will be used for spatter free and heavy of for MMA welding using rutile, basic & cellulosic electrod			-	
1	PURPOSE & WORKPIECE MA	TER	IAL				
1.1	Purpose: (Operations/Jobs involved CO <sub>2</sub> welding on mild steel a	Inverter based Synergic MIG welding machine to do flux lloy steel.	Vendor to confirm				
2	TECHNICAL SPECIFICATION	C · F	ronius TPS 400i				
	Specifications of Synergic MIG V			<u> </u>	1	Ι	1
2.1	specifications of Synergic MIG V	v Clul	ng macmile.		1	l	
2.1.1	Туре	:	Constant voltage Digital IGBT Type Inverter Based Power source based on Linux Platform.				
2.1.2	Shielding Medium	:	Argon + CO2 gas-mixture / CO2.				
2.1.3	Output Current Range	:	3 A to 400 A				
2.1.4	Welding Voltage	:	14.2V to 34 V				
2.1.5	KVA	:	13.4 KVA				
2.1.6	Power Factor	:	0.99				
2.1.7	Pollution Level	:	According to IEC60664 3				
2.1.8	Welding Current Rating at 100%	:	320 A (minimum)				
2.1.9	Welding Current Rating at 60%	:	360 A (minimum)				
2.1.10	Open Circuit Voltage	:	73 V or Better				
2.1.11	Wire Feed Speed	:	Upto 25 m/min. (minimum)				
2.1.12	No Load Power Consumption	:	< 75W				
2.1.13	Type of Cooling	:	Forced Air				
2.1.14	Degree of Protection	:	IP 23C (Drip Proof)				
2.1.15	Conforming to IEC Norms	:	IEC 60974-1 or better				
	Input Supply	:	400V -15%+20%, 3 Phase, 50/60Hz.				
2.1.17	Working Condition:						
		a)	Ambient Temperature Variation 3°C to 500°C				
	:	b)	Relative Humidity: 95% (maximum) during rainy season.				
	:	c)	Continuous heavy duty welding in dusty Fabrication Shops				

2.1 18				
	Welding conditions:  a) The machine should be suitable for MMA welding			
	b) The machine should be suitable for MIG/MAG welding &			
	c) The machine should be suitable for Special Root Pass			
2.0	. welding program (as optional) for Root Pass welding			
	Welding Process & Welding Characteristics	77 1		
	The machine should have Universal Characteristic for conventional welding tasks.	Vendor to confirm		
	The machine should have Dynamic Characteristic for high welding speeds with concentrated arc.	Vendor to confirm		
	The machine should be Upgradable to Advanced welding Processes/custom make programs.	Vendor to confirm		
	Machine should have capable to do scratch TIG welding & MMA Welding.	Vendor to confirm		
	Machine should have the display to show the energy consumption in KVA / KW during welding operation.	Vendor to confirm		
2.2.6	The machine should have Root Characteristic for root passes with powerful arc.	Vendor to confirm		
	The machine should have option of Direct transition from the concentrated pulse to a short spray arc. The advantages of pulse and standard arcs combined in single Characteristic. (PMC)	Vendor to confirm		
2.2.8	The machine should produce Minimal spatter even in Co2 welding. (LSC - Optional)	Vendor to confirm		
	Arc Length stabilizer Arc length should remain constant up to a torch up-down movement of 35 mm (to ensure better welding characteristic in manual welding)	Vendor to confirm		
l 1	12) Penetration Stabilization Feature – Inbuilt additional wire control, to make penetration constant even if distance between job& welding torch changes. Operational range of penetration	Vendor to confirm		
	stabilization feature steplessly in machine.			
	· ·			
2.3	Stabilization feature steplessly in machine.  Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.	Vendor to confirm		
<b>2.3</b> 2.3.1	Welding Power Source	Vendor to confirm  Vendor to confirm		
2.3 2.3.1 2.3.2	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.			
2.3 2.3.1 2.3.2 2.3.3	Welding Power Source Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side	Vendor to confirm		
2.3 2.3.1 2.3.2 2.3.3 2.3.4	Welding Power Source Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more. IGBT / MOSFET to be on primary side Characterstic: Constant Voltage	Vendor to confirm  Vendor to confirm		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5	Welding Power Source Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side Characterstic: Constant Voltage Model:	Vendor to confirm  Vendor to confirm  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7	Welding Power Source Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more. IGBT / MOSFET to be on primary side Characterstic: Constant Voltage Model: Welding Current Range: 3-400 A Welding Current (At 100 % duty cycle): 320 A	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9 2.3.10	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H  Type of Cooling: Gas Cooled	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9 2.3.10 2.3.11	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H  Type of Cooling: Gas Cooled  Variation of Set Current: <±1%  Weight of Power Source: < 40 Kg	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9 2.3.10 2.3.11	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H  Type of Cooling: Gas Cooled  Variation of Set Current: <±1%  Weight of Power Source: < 40 Kg  Wire Feeder	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.  Vendor to specify.		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9 2.3.10 2.3.11	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H  Type of Cooling: Gas Cooled  Variation of Set Current: <±1%  Weight of Power Source: < 40 Kg  Wire Feeder  Type: Four roll drive.	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.  Vendor to confirm  Vendor to confirm		
2.3 2.3.1 2.3.2 2.3.3 2.3.4 2.3.5 2.3.6 2.3.7 2.3.8 2.3.9 2.3.10 2.3.11 2.40 2.4.1 2.4.2	Welding Power Source  Type: Inverter based on IGBT/MOSFET technology with switching frequency of 20 KHZ or more.  IGBT / MOSFET to be on primary side  Characterstic: Constant Voltage  Model:  Welding Current Range: 3-400 A  Welding Current (At 100 % duty cycle): 320 A  Welding Voltage range:  Class of insulation: H  Type of Cooling: Gas Cooled  Variation of Set Current: <±1%  Weight of Power Source: < 40 Kg  Wire Feeder	Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to confirm  Vendor to confirm  Vendor to specify.  Vendor to specify.  Vendor to specify.		

2 4 4	Flux cored wire sizes to be used: 0.8 - 1.6 mm	Vandanta E		
		Vendor to confirm		
	Spool dia: 300mm	Vendor to confirm		
	Weight of Wire spool: 19 kg Max	Vendor to confirm		
	Wire feed motor type:	Vendor to specify.		
	Wire feeder weight: 10-13 Kg	Vendor to specify.		
2.4.9	Degree of Protection: IP23-C			
	Torch			
2.5.1	Type: Gas cooled	Vendor to confirm		
2.5.2	Capacity: 320 A at 100 % duty cycle.	Vendor to confirm		
2.5.3	Shape: Goose neck shape.	Vendor to confirm		
2.5.4	Length: 3.5 m	Vendor to confirm		
2.5.5	Degree of Protection: IP23-C			
2.5.6	Wire sizes to be used: 0.6-1.6 mm	Vendor to confirm		
2.5.7	The torch body can be swivelled 360° so that Welding is possible even in hard-to-get-at locations. Torch to have LED light on handle shell for welding in darker areas/corners. Tool free changing of inner liner possible	Vendor to confirm		
2.6	A			
	Accessories: CO2 regulator with flowmeter and heater.	V 1		
2.0.1	CO2 regulator with howmeter and heater.	Vendor to confirm		
2.7	Cables			
	Power source to Wire feeder Interconnection Cable - 15 m. length	V 1 t		
		Vendor to confirm		
2.7.2	Remote control with 5m connection cable or contol in torch holder itself.	Vendor to confirm		
2.8	OPERATION AND CONTROL SYSTEM:	Vendor to confirm		
2.8.1	Welding Process Controller:1)Electronic stepless Control of Welding Voltage.2)Digital Display of Welding Voltage and Current.3)Wire Gas inching facility.4)4)Pre flow /Post flow control.5)Hot start facility.6)Crater control and fill.7)Creep control facility.8)Spatter control facility.9)Burn back control facility.	Vendor to confirm		
2.8.2	WARNING lamp in the front panel of the power source to indicate the abnormalities. The equipment shall automatically energize once normalcy is restored.	Vendor to confirm		

1	The welding voltage and current to remain in set stable condition against the supply voltage fluctuation of $\pm 10\%$ and even in case of any change in ambient temperature up to 50°C.	Vendor to confirm		
	Start signal terminal, to directly couple the machine (without any additional control circuitry) with any automatic system like oscillator, welding fixtures or robot etc. having synchronized welding	Vendor to confirm		
1	Make of Synergic MIG Welding Equipment: Kemppi Finland, Miller USA, Fronius Austria, Lincoln USA, EWM Germany, SigmaWeld U.S.A.	Vendor to confirm		
3	ELECTRICAL/ ELECTRONIC SYSTEM:			
	TECHNICAL FEATURES :		<u> </u>	Į
	TEOHNIOAL I EATOREO :			
(i)	Light weight, trolley mounted, sturdy and compact, rigid and dust proof construction.			
	Single knob Synergic control, through in-built programs. Only base metal, wire diameter and shielding gas will be selected by welder and rest all parameters will be automatically selected by the synergic control system.			
(iii)	The wire feeder should have Digital display of all parameters like:			
	Wire feed speed			
	Welding Current			
	Welding Voltage			
	Arc Welding Dynamics/Arc Force			
	Arc Length			
	Base Metal Thickness			
	Creep Start	Vendor to confirm		
	Hot Start			
	Crater level			
	<ul> <li>Cable loss Calibration</li> </ul>			
	<ul> <li>Post Current</li> </ul>			
	<ul> <li>Display of Memory Channel</li> </ul>			
	<ul> <li>Last welded welding parameter.</li> </ul>			
	Wire feed Motor Current			
	Memory Channel			
	Fault recognition text			
	$400V \pm 10\%$ , $50HZ \pm 3\%$ , 3 Phase AC (3 wire system without neutral) Power Supply Source will be			
	provided by HMBP/HEC at a single point near the machine, as per layout recommended by Vendor.	Vendor to confirm		
1	All types of cables, connections, circuit breakers etc. required for connecting HMBP/HEC's power	v chaol to comma		
	supply point to different parts of the machine/control cabinets, shall be the resposibility of vendor.			
3.2	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to confirm		

3.3	All the PCB's shall be sprayed with mould coating to prevent damage from dust, grinding particles. The PCB's shall preferably be housed in separate dust proof compartments.			
3.4	Supplier will specifically mention the protections taken such as seals etc. used to prevent entry of dust etc. in to the machine.	Vendor to confirm		
3.5	IGBT shall be suitably protected by semiconductor fuses against shorcircuiting Inverter failure.	Vendor to confirm		
3.6	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to confirm		
3.7	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm		
4	SAFETY ARRANGEMENTS:			
	Following safety features in addition to other standard safety features should be provided on the machine:			
	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, workpiece and the operator due to the malfunctioning or mistakes. Machine functions should be continuously monitored and alarm / warning indications	Vendor to confirm		
	All the cables etc. on the machine should be well supported and protected.			
5	ENVIRONMENTAL PERFORMANCE OF THE MACHINE :			
	The Machine shall conform to following factors related to environment:			
	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm		
	Paint of the machine should be oil / coolant resistant and should not peel off and mix up with coolant.			
6	Optional Accessories (If any) :			
-	Optional Accessories (If any).	Vendor to specify		
	SPARES:			
	Itemised breakup of mechanical, electrical and electronic spares used on the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor.  The list to include following, in addition to other recommended spares: (Unit Price of each item of spare should be offered)	Vendor to specify		
7.2	All types of spares for total machine and accessories should be available for atleast ten years after supply of the machine. If machine or control is likely to become obsolete in this period, the vendor should informHMBP/HEC sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable HMBP/HEC to procure these in advance, if required	Vendor to confirm		
7.3	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine	Vendor to confirm		

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8	DOCUMENTATION: Five sets of following documents (Hard copies) in English language should be supplied along with the machine			
8.1	Operating and maintenance manuals of Machine and all supplied accessories.			
8.2	Detailed Maintenance manual of machine which shall contain System Description, Block diagram, Schematic drawings, Circuit digrams & hardware details of PCB's, diagrams & MMI. Trouble shooting charts, All Assembly/ Sub Assembly Drawings shall be supplied with the part list.	Vendor to confirm		
8.3	Complete Master List of parts used in the machine shall be submitted by the vendor.			
8.4	One additional set of all the above documentation on CD ROM, wherever possible.			
0	AMBIENT CONDITIONS & THERMAL STABILITY:			
	Total machine and all supplied items should work trouble free and efficiently under following operating conditions and should give specified accuracies.  Power Supply:  Voltage: 415 V - 10%, +10%  Frequency: 50 Hz +3%, - 3%  No. of phases = 3  Ambient Conditions: Temperature = 5 to 50 degree celsius with variation of 25 degree celcius (max)  Relative Humidity = 95% max.  (Vendor to confirm that machine is suitable for above and details of provisions on the machine for the same are to be furnished by Vendor)	Vendor to confirm		
10	Test to be carried out at HMBP/HEC works while commissioning the machine :			
10.1	Demonstration of all features of the machine & all accessories to the satisfaction of HMBP/HEC for their efficient and effective use.			
10.2	Demostration by actual use of all supplied attachments and accessories to their full capacity.			
10.3	Training of HMBP/HEC machine operators in operation of complete machine & accessories etc by the supplier's experts / engineers during their stay at HMBP/HEC works			
	Insrument must be calibrated and proved against setting knob as well as against actual current measured by tong tester while welding a job.			
11	The Vendor should offer Annual Maintenance Contract for the machines supplied. AMC should include the following:			
	Should have provision for one mandatory visit by the vendor's engineer for preventive maintenance once every month			
	2. Six visit per annum against calls free of charge for attending to complaince.			

12	PACKING:			
12.1	Sea worthy & rigid packing for all items of complete machine.	Vendor to confirm		
	GUARANTEE:			
13.1	12 months from the date of acceptance of the machine.	Vendor to confirm		
	GENERAL: The vendor should submit the following information:			
14.1	Machine Model	Vendor to specify		
	Total connected load (KVA):	Vendor to specify		
	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify		
	Total weight of the machine	Vendor to specify		
14.5	Detailed catalogues, sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to confirm		
14.6	Country of manufacture of the machine.			
15	QUALIFYING CONDITIONS:	Vendor to Confirm		
15.1	Only those vendors, who have supplied at least two welding machines in the past ten years and such machine is presently working satisfactorily for more than one year in India (more than six months if supplied to HEC LTD) after commissioning, would be eligible for participating in the tender. The following information is to be submitted by the vendor about the companies where similar machines have been supplied.			
	1. Name of the customer / company where similar machine is installed.			
	2. Complete postal address of the customer.			
	3. Year of commissioning.			
	4. Application for which the machine is supplied with details of accuracies achieved on the job.			
	5. Name and designation of the contact person of the customer.			
	6. Phone, FAX no. and email address of the contact person of the customer.			
	7. Performance certificate from the customers regarding satisfactory performance of machine supplied to them			