

BHARAT HEAVY PLATE & VESSELS LIMITED.,
(A Subsidiary Bharat Heavy Electricals Limited)
A Government of India Enterprises
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NOTICE INVITING TENDER(NIT)

**Category of Tender: TWO BID
(PRICED + UN - PRICED)**

SUB: Orbital TIG Welding Station

Our Ref: **MM/2/10/3240/CAP/W-063/5066**

DATE: 29.06.2013

Sealed quotations in duplicate are invited from suppliers on **or before 27.07.2013** **SUPERSCRIBING OUR REFERENCE AND CATEGORY OF TENDER** on the cover, for supply of the under mentioned stores within the above due date, otherwise send **REGRET LETTER**, strictly subject to the Terms & Conditions attached herewith.
LATE TENDERS ARE NOT ACCEPTABLE.

ITEM No.	DESCRIPTION / SPECN. / SIZE	QTY
1.	Orbital TIG Welding Station	3 No 's
	Encl: 1. Qualifying Criteria PART A 4 pages 2. Technical Specifications PART B 19 Pages 3. Annexure – 1 1 pages 4. Annexure – 2 1 pages 5. Annexure – 3 1 pages 6. General Terms/ commercial terms and conditions (INCLUDING CHECK LIST) 10 pages	

For BHARAT HEAVY PLATE & VESSELS LIMITED,

For Dy. GENERAL MANAGER (MM)

QUALIFYING CRITERIA FOR THE SUPPLY OF ORBITAL TIG WELDING MACHINE

SECTION – I

The BIDDER is expected to give complete details against each clause in the table given below, with additional sheets those may be attached (giving clear reference number) to furnish and cover the requisite details / documents.

S. No.	PARTICULARS	VENDOR's RESPONSE
1	VENDOR to provide the Profile of their Company	
2	The Bidder / Vendor (OEM) shall have a minimum of TEN Years of Continuous Experience in the field of Design, Manufacture and Supply of ORBITAL TIG WELDING EQUIPMENT used for welding Boiler Tubes	
3	List of customers to whom ORBITAL TIG WELDING EQUIPMENT were supplied, installed and commissioned till date, highlighting the customers who are in the field of Power Utility Boilers manufacturing (of High Pressure Ratings). The sizes of machines supplied may be furnished.	
4	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centers in India. [Details on the number of trained personnel with field of experience to handle the service needs of BHPV in time]	
5	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION – II

The BIDDER / VENDOR has to compulsorily meet the following requirements to get qualified for submitting an offer for the Orbital TIG Welding Machine.

S. No.	REQUIREMENTS	VENDOR'S RESPONSE
1	Only those vendors (OEMs), who have supplied and commissioned at least ONE complete ORBITAL TIG WELDING EQUIPMENT of the offered Model in the past ten years (on the date of opening of Tender) and such machine is presently working satisfactorily for more than one year after commissioning (on the date of opening of Tender), should quote. Performance certificate from the customers regarding satisfactory performance of ORBITAL TIG WELDING EQUIPMENT supplied to them in attached format to be enclosed along with technical offer.	
	The vendor should submit following information where similar machine has been supplied:	
1.1	Name and postal address of the customer or company where similar equipment is installed.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of commissioning of the equipment.	
1.5	Application for which the equipment is supplied	
2	Along with the Technical offer, the Vendor should submit the <u>Performance certificate from the customer for the satisfactory performance of the equipment supplied as per clause 1.0 above.</u> (For obtaining the Performance certificate, a suggestive format is provided in SECTION – IV)	
3	Offers of only those vendors who meet the above Qualifying Criteria will be considered for further evaluation.	
4	BHPV reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	
5	DELIVERY - The bidder shall quote the best possible delivery. However the delivery period shall not exceed 8 months from the date of Purchase Order. A grace period of 2 months in addition is provided. However additional grace period will have a loading for arriving at the PRICE COMPETITIVENESS of the Commercial Offer (if the offer is technically acceptable on all accounts). Details are given in the Commercial Terms of this Tender. The delivery period is reckoned from the date of Purchase order to date of dispatch from the vendor works. Bidder to specify the time required for E&C. BHPV reserves the right to fix E&C period during Finalization of offer in consultation with the bidder	

SECTION – III

The BIDDER / VENDOR has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S. No.	REQUIREMENTS	VENDOR's COMPLIANCE
1	The BIDDER / VENDOR shall submit the offer in TWO PARTS- Technical [with PART A & PART B] & Commercial and Price Bid.	
2	The offer shall contain a comparative statement of Technical Specifications given by BHPV and the offered details submitted by the Bidder, against each clause. Merely stating 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words wherever 'Vendor to Specify' details in the technical comparative statement may lead to disqualification of the Technical Offer.	
3	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of the inclusion of all the accessories, toolings, attachments, auxiliary parts, spares, consumables, etc. with the main and basic equipment, to meet the technical specification requirements.	
5	BIDDER has to indicate the Country of Origin for the supply of equipment.	

SECTION – IV

PERFORMANCE CERTIFICATE
(On Customer's Letter Head)

1. Supplier of the machine :
2. Make & Model of the Equipment :
3. Month & Year of Commissioning :
4. Application for which machine is used :
5. Sizes of Jobs Performed in the machine
 - a. Tube diameter :
 - b. Tube thickness (maximum) :
 - c. Tube material :
6. Performance of the Machine : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
7. After Sales Service : Satisfactory / Not Satisfactory
(Strike off whichever is not applicable)
8. Any other remarks :
9. Contact Details
 - Name of the Contact Person :
 - Phone No. :
 - Fax No. :
 - E-mail ID :

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

ORBITAL TIG WELDING EQUIPMENT (PAR B)

TECHNICAL SPECIFICATIONS FOR ORBITAL TIG WELDING EQUIPMENT

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
1.0	PURPOSE & APPLICATION	
1.1	<p>a. The welding station is intended to weld tubular coils (used in high pressure steam boilers) by joining simple loops / circuits of tubes. [ANNEXURE – 3 give typical loop/circuit and built-up tubular coil]</p> <p>b. The tubular loops or circuits are inter-connected by means of butt welding the tube ends, by keeping the loops/circuits in horizontally flat position. The welds are to meet BHPV Radiographic / Ultra sonic Test requirements.</p> <p>c. The welding station is expected to carry-out the following operations: i) Butt weld joint fit-up using mechanical fixtures ii) Butt welding of weld joint by automatic orbital GTAW process</p>	<p>[VENDOR is expected to give technical write up on welding station design, construction and operational features to bring out the capability of the proposed equipment, to meet the BHPV specification requirements]</p>
2.0	WORK PIECE / JOB DETAILS	
2.1	TUBE DIMENSIONS (General)	
	a) Range of Diameter [O.D.]	28mm to 76.1 mm
	b) Range of Wall Thickness	3.2 mm to 12.5 mm
	c) Width of Coil to be built-up	2750 mm [maximum]
	d) Length of Coil to be built-up	20000 mm (20 meters) [maximum]

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)																																	
2.2	TUBE SIZES in detail																																		
	<p>[NOTE: All are OD (Outer Diameter) controlled tubes with a tolerance of maximum 12% on tube wall thickness.]</p> <table border="1" data-bbox="296 391 1633 834"> <thead> <tr> <th data-bbox="296 391 474 431">S. No.</th> <th data-bbox="474 391 846 431">OD, in mm</th> <th data-bbox="846 391 1633 431">THICKNESS, in mm</th> </tr> </thead> <tbody> <tr> <td data-bbox="296 431 474 472">1</td> <td data-bbox="474 431 846 472">28.0</td> <td data-bbox="846 431 1633 472">3.2 / 5.6</td> </tr> <tr> <td data-bbox="296 472 474 513">2</td> <td data-bbox="474 472 846 513">31.8</td> <td data-bbox="846 472 1633 513">3.2 / 3.6 / 4.0 / 5.0</td> </tr> <tr> <td data-bbox="296 513 474 553">3</td> <td data-bbox="474 513 846 553">38.1</td> <td data-bbox="846 513 1633 553">3.2 / 4.0 / 5.0 / 6.3</td> </tr> <tr> <td data-bbox="296 553 474 594">4</td> <td data-bbox="474 553 846 594">44.5</td> <td data-bbox="846 553 1633 594">4.0 / 4.5 / 5 / 6.3 / 8 / 9 / 10</td> </tr> <tr> <td data-bbox="296 594 474 634">5</td> <td data-bbox="474 594 846 634">47.63</td> <td data-bbox="846 594 1633 634">5 / 6.3 / 8 / 10</td> </tr> <tr> <td data-bbox="296 634 474 675">6</td> <td data-bbox="474 634 846 675">51.0</td> <td data-bbox="846 634 1633 675">3.6 / 4 / 4.5 / 5 / 6.3 / 7.1 / 8 / 10 / 12</td> </tr> <tr> <td data-bbox="296 675 474 716">7</td> <td data-bbox="474 675 846 716">54.0</td> <td data-bbox="846 675 1633 716">3.6 / 4 / 4.5 / 5 / 6.3 / 8 / 10 / 12</td> </tr> <tr> <td data-bbox="296 716 474 756">8</td> <td data-bbox="474 716 846 756">57.0</td> <td data-bbox="846 716 1633 756">4 / 5 / 6.3 / 8 / 10</td> </tr> <tr> <td data-bbox="296 756 474 797">9</td> <td data-bbox="474 756 846 797">63.5</td> <td data-bbox="846 756 1633 797">4.8 / 5.6 / 6.3 / 10 / 12.5</td> </tr> <tr> <td data-bbox="296 797 474 834">10</td> <td data-bbox="474 797 846 834">76.1</td> <td data-bbox="846 797 1633 834">7.1 / 10 / 12.5</td> </tr> </tbody> </table>	S. No.	OD, in mm	THICKNESS, in mm	1	28.0	3.2 / 5.6	2	31.8	3.2 / 3.6 / 4.0 / 5.0	3	38.1	3.2 / 4.0 / 5.0 / 6.3	4	44.5	4.0 / 4.5 / 5 / 6.3 / 8 / 9 / 10	5	47.63	5 / 6.3 / 8 / 10	6	51.0	3.6 / 4 / 4.5 / 5 / 6.3 / 7.1 / 8 / 10 / 12	7	54.0	3.6 / 4 / 4.5 / 5 / 6.3 / 8 / 10 / 12	8	57.0	4 / 5 / 6.3 / 8 / 10	9	63.5	4.8 / 5.6 / 6.3 / 10 / 12.5	10	76.1	7.1 / 10 / 12.5	
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2.3	<p>MATERIAL SPECIFICATION</p> <p>A) CARBON STEEL : SA 192, SA 210A1, SA 210 GrC [ASTM]</p> <p>B) ALLOY STEEL : SA 209T1, SA 213T11, SA 213T22, SA 213T91, SA 213 T92</p> <p>C) STAINLESS STEEL : SA 213 TP304H, SA 213 TP321H, SA 213 TP347H</p>																																		

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
3.0	<p>WELD JOINT DETAILS</p> <p>a. Style of Edge Preparation : 'J' style as per Annexure-2</p> <p>b. Tube End Condition : Machined in automatic end preparation line</p> <p>c. Weld Joint Location : Length of straight portion on either side of weld joint \geq 250 mm</p> <p>d. Preheating Temperature : Max. 250 deg C [for Alloy Steel Tubes only]</p> <p>e. Weldment Testing Modes : Radiography / UT Testing</p> <p>f. Weld Quality Appraisal : As per ASME Section I, V and VIII (Division 1 & 2) for Radiography & UT Test</p>	
3.1	<p>MACHINE OUTPUT / PRODUCTIVITY</p> <p>VENDOR has to specify the minimum output of welded joints, possible from the workstation, for the tubes with the following dimensions/details, in a single shift of 8 hrs:</p> <p><u>Expected productivity is as follows in one Eight Hour Shift:</u></p> <p>a. Tube Size: OD 51mm x Th. 7.1mm / SA213 T91 - 18 Joints OD 47.63mm x Th. 5mm / SA213 T22 - 20 Joints</p> <p>b. Weld Joint Style as per the EP Sketches : ('J' Style Edge Preparation) Annexure-2</p> <p>c. Welded Joints will be subjected to Radiography & UT test at BHPV works and should pass the test as per Clause 3.0 e.</p> <p>Note: The welding head has to be suitable for welding all passes continuously.</p>	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
4.0	Orbital TIG Welding Sets – Scope of Supply of equipment:	
	Orbital TIG Welding sets and accessories consisting of the following: (for all machines in toto)	
	1. Welding Power Source with Controls	3 Nos
	2. Orbital TIG Welding head and its related accessories	3 Sets
	3. Welding head Control Unit	3 Nos
	4. Pendant Controller	3 Nos
	5. Tube Butt Joint Fit-Up Fixture / Job Clamping Unit	6 Nos
	6. Portable Tungsten Electrode Grinder	3 Nos
	7. Inter-connecting Cables and Hoses	3 sets
	8. Operating and Service Tool Kit	3 sets
	9. Non Contact type temperature sensor (optional)	3 Nos
	10. Pen drive / Memory stick – 16 GB	3 Nos
	11. Spares	1 Set
	12. Documents	3 Sets
5.0	WELDING POWER SOURCE AND CONTROLLER	
5.1	Type	Micro-processor controlled, Programmable, Inverter type- Constant current.
5.2	Make & Model	Vendor to specify
5.3	Switching Frequency	Vendor to specify
5.4	Welding Process	GTAW, DCEN with Current Pulsing.
5.5	Memory	99 Welding Programs or more
5.6	External Memory Equipment to have provision to transfer welding programs from and to Pen drive	Vendor to Confirm
5.7	Each weld program for a unique combination should allow a minimum of 5 passes with different parameters.	Vendor to confirm & specify no. of programmable parameters that could be set per pass.

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
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ORBITAL TIG WELDING EQUIPMENT (PAR B)

5.8	For each program the following parameters should be programmable. common to all Passes - Vendor to Confirm with details.	Program Number.	
		Number of Passes.	
		At the beginning of welding/Start sequence:	
		a) Pre purge time	
		b) Upslope time	
		c) Wire start delay	
		d) Rotation start delay	
		At the end of welding/Stop sequence:	
		a) Post purge time	
		b) Down slope time	
5.9	Following parameters should be programmable for each pass. Vendor to Confirm with details.	a) Pulsing On/Off	
		b) Oscillation On/Off	
		c) Current	
		d) Wire Feed speed	
		e) Travel Speed	
		f) Oscillation speed	
		g) Oscillation width	
		h) Oscillation dwell In	
		i) Oscillation dwell Out	
		j) Base Current- % of Peak Current	
		k) Peak Time - %	
		l) Base Time - %	
		m) AGC/AVC sensitivity	
		n) AGC/AVC Speed	
o) Synchronized Travel with Pulsing			
p) Synchronized Wire feed with Pulsing			

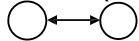
ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER <small>(with complete Technical Details)</small>
5.10	It should be possible to manually over ride the following parameters during welding within a pre-set range. Vendor to Confirm with details.	a) Current b) Travel speed c) Wire feed speed d) AGC/AVC e) Oscillation speed f) Oscillation Amplitude g) Torch Cross beam centering	
5.11	Welding Data Entry on Controller / Power Source	Through a 'dust & moisture proof' Membrane Key Pad – Rugged Type	
5.12	Front Panel Display (in English)	Vendor to describe	
5.13	Output Current Range	3 to 300A. [D.C.]	
5.14	Current Duty cycle	250A or more DC @ 100 %	
5.15	Current Accuracy	±1% of setting	
5.16	Welding Voltage Range	Vendor to Specify	
5.17	Gas Pre-flow / Gas Post-flow Time	Vendor to Specify	
5.18	Current Pulse Frequency	Vendor to Specify	
5.19	Pulse Current Time	Vendor to Specify	
5.20	Background Current Time	Vendor to Specify	
5.21	Current Up-slope / Down-slope Time	Vendor to Specify	
5.22	Rotation Start / Stop Delay	Vendor to Specify	
5.23	Wire Feed Start / Stop Delay	Vendor to Specify	
5.24	Torch Rotation Speed	Vendor to Specify	
5.25	Torch Rotation Speed Regulation	±1% of setting	
5.26	Filler Wire Feed Speed	Vendor to Specify	
5.27	Filler Wire Feed Speed Regulation	±1% of setting	
5.28	Synchronization of functions with Current Pulsing should be possible on selection.	Wire feed. Oscillation dwell. AGC/AVC. Torch/Head Rotation	
5.29	Torch Oscillation Speed	Vendor to Specify	
5.30	Oscillation Dwell Time at both ends (independently adjustable)	Vendor to specify	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
5.31	AVC Function	±1% regulation	
5.32	Programming increments for welding current & time parameters	0.5 Amp / 0.1 Sec.	
5.33	Welding parameter override during welding	Programmable limits (Vendor to specify range)	
5.34	Arc Starting (Features like hot start etc)	Vendor to explain how arc starting is achieved.	
5.35	Arc Sensing	Vendor to specify means & modes for arc initiation and sensing	
5.36	Refrigerant type water chiller	Refrigerant type water chiller having suitable capacity to cool the weld head and torch while welding tubes with 250 C preheat involving 5 continuous passes without stop for Inter - pass temperature. Vendor to provide details.	
5.37	Gas hose with end fittings – Gas cylinder to power source	Length to suit long travel on cable festoon	
5.38	Fault Protection Sensors	For gas & cooling water flow	
5.39	Maximum Number of Data Log Files in Memory	Vendor to specify	
5.40	Data logger connectivity to PC	Vendor to confirm	
5.41	EMI Interference Suppressor	Vendor to specify the details for EMI suppression in input supply line	
6.0	ORBITAL TIG WELDING HEAD		
6.1	Type	Low profile tube orbital welding head of rugged construction	
6.2	Rating	200A 100% duty cycle	
6.3	No. of passes of welding	Five Continuous Passes without interruption	
6.4	Cooling for Torch & Body	Water cooled	
6.5	Clamping Type / Weld Head Mounting on Tube - For easy mounting / dismounting of head	Vendor to Provide complete details on clamping system of Orbital Weld Head on the tube.	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
6.6	Axial Clearance	250 mm	
6.7	Radial Clearance (Clear gap between tubes) 	100mm	
6.8	Servo controlled Oscillation & Dwell Stroke Length Speed Dwell Time – In & Out independently variable.	16mm (minimum) Vendor to specify the actual stroke	
6.9	Servo Controlled AVC	13mm stroke	
6.10	Servo Controlled Rotation Motor: Travel speed	Speed - Vendor to specify	
6.11	Servo controlled Wire feed speed	Speed – Vendor to specify	
6.12	Cross Seam Adjustment	Vendor to specify range	
6.13	Servo Controlled Synchronized Pulsed or Continuous Wire Feed Motor (on board)	Vendor to specify	
6.14	Wire Size	0.8, 1.0 mm	
	Corresponding wire feed rollers, wire guide, and collets suitable for 0.8 and 1.0 mm to be provided	Vendor to confirm.	
6.15	Wire Nozzle Adjustment (Manual)	Vertical, horizontal & angular	
6.16	Torch Lead / Lag angle adjustment	Vendor to specify	
6.15	Wire Nozzle Adjustment (Manual)	Vertical, horizontal & angular	
6.16	Torch Lead / Lag angle adjustment	Vendor to specify	
6.17	Torch Tilt In / Out	Vendor to specify	
6.18	Wire Nozzle and its mounting arrangement	Shall be capable of withstanding the high temperatures without loosening	
6.19	Wire Spool Carriers	Head mounted type (On board mounted). The on board mounted wire spool to rotate along with the head during welding. Complete details of mounting wire spool to be provided with drawing / photographs. Wire spool mounting on extended frame is not acceptable.	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
6.20	Wire Spools size and specification	Weight: 1 Kg (Details of Spools attached in Annexure-1) Only these spools will be used. Spool mounting to be suitable for this.	
6.21	Tungsten Electrode Size	Ceriated Tungsten Electrode Size 2.4mm	
6.22	Tungsten Tip included angle	15 Deg. to 30 Deg.	
6.23	Cable and Hose Package	The cable and hose package for the welding head shall be adequately sheathed with heat and abrasion resistant material. It shall withstand repeated winding / rewinding while in operation. It is proposed to mount the equipment on a mobile platform and suspend welding head, controller, job clamps etc from top supporting rail. Hence, the length of the cable and hose package should have sufficient length to reach the Weld Joint location. Length of Cable and Hose required is 8 metres minimum. Joints not preferable.	
6.24	Number of Coiling Required	Cable and hose winding shall be of sufficient length for continuous operation of 5 passes on the tube without interruption.	
6.25	Thermal Stability	All the metallic and non-metallic components of the welding head shall withstand the intense heat radiation during above welding.	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
7.0	REMOTE OPERATOR PENDANT		
7.1	Features	Pendant shall contain the following controls: a. Selector Switch: Weld / Setting b. Welding Program Access & Selection c. Display screen for welding parameters d. Emergency stop e. Sequence Start / Stop f. Gas flow switch g. Inching operation (by toggle switch control or joystick control) for the following functions: i) AVC function ii) Torch oscillation amplitude iii) Torch Centering iv) Wire feed speed v) Head travel speed vi) Welding current up/down (manual override)	
7.2	Cable to Remote Pendant	The cable to be firmly fixed to the pendant and shall not loosen and disconnect from the pendant during usage in shop floor. Necessary joint protections to be provided.	
7.3	Heat resistant	The remote operator pendant shall have proper cooling provisions so that it does not get heated up due to the electronic components / processors housed inside the pendant. The temperature shall not exceed 5 deg above ambient temperature.	
8.0	TUNGSTEN ELECTRODE GRINDER		
8.1	Type	Portable, Electric Motor operated	
8.2	Electrode to be ground	Ceriated Tungsten	
8.3	Tungsten Diameter	2.4mm	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
8.4	Tungsten Grinding angle	15 to 30 degrees	
8.5	Make & Model	Vendor to provide details	
9.0	TUBE BUTT JOINT FIT-UP FIXTURE / JOB CLAMPING UNIT		
9.1	Type	Portable – Manually operated	
9.2	Clamping	Clamping on Outer diameter	
9.3	Tube clamping range	28mm to 77mm	
9.4	Axial Alignment	No mismatch at the root for welding	
9.5	Suspension hook	Hook for suspending the fixture to be provided	
9.6	Gap	Clear Gap suitable to mount Orbital Weld head and rotation during welding	
9.7	Make & Model	Vendor to provide details	
10.0	ELECTRICAL & ELECTRONICS SYSTEMS		
10.1	415V ± 10%, 50HZ +/-3 Hz, 3 Phase AC [3 wire system without neutral] power supply will be provided by BHPV at a single point near the machine. All cables, connections, circuit breakers etc. required for connecting BHPV's power supply to the machine shall be in the scope of vendor.	Vendor to confirm	
10.2	Tropicalization: All electrical / electronic equipment shall be tropicalized.	Vendor to confirm	
10.3	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to confirm	
10.4	Control circuit voltage shall not exceed 110 V.	Vendor to confirm	
10.5	All motors shall be conforming to IEC standards. Type of motors may be specified.	Vendor to Specify	
10.6	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to confirm	
10.7	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER <small>(with complete Technical Details)</small>
11.0	FAULT DIAGNOSTIC SYSTEM	
11.1	Vendor's own diagnostic system with required hardware & software shall be supplied and installed in the Control System. This shall include customized auto-diagnostic system, which shows detailed cause and remedy for the fault on the display for faults related to mechanical and electrical maintenance.	Vendor to confirm
11.2	Help guide shall be provided to use both diagnostic systems	Vendor to confirm
12.0	IN-BUILT SAFETY ARRANGEMENTS	
12.1	Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to confirm
12.2	A detailed list of all alarms / indications provided on machine should be submitted by the Vendor.	Vendor to specify
12.3	All the pipes, cables etc. on the machine should be well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.	Vendor to Confirm
12.4	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due to the malfunctioning or mistakes.	Vendor to specify
12.5	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations and suitably guarded.	Vendor to Confirm
12.6	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor to Confirm
13.0	MACHINE SPARES	
13.1	Itemized break-up of mechanical, electrical and electronic spares used in the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis shall be offered by vendor. The list is to include following, in addition to other recommended spares: (Unit Price for each item of spare shall be offered)	Vendor to confirm

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION		VENDOR'S OFFER (with complete Technical Details)
13.2	Mechanical Spares: Pumps, Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Water cooled Hoses.	Vendor to confirm	
13.3	Electrical / Electronic: Printed Circuit Boards, Relays, Contactors, Proximity Switches, Push Buttons, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Encoders, Indicating Lamps, Spares for Micro processor based System, Servo Motors for Feed Drives, Power Module & Control Cards for Drives etc.	Vendor to confirm	
13.4	Recommended set of spares for all attachments are to be offered with details.	Vendor to confirm	
13.5	Spares for total machine and accessories shall be available for at least ten years after supply of the machine. If machine or control is likely to become obsolete in this period, the vendor should inform BHPV sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHPV to procure these in advance, if required	Vendor to confirm	
13.6	Vendor to confirm that complete list of spares for machine and accessories, along with item part no / 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	

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER <small>(with complete Technical Details)</small>
14.0	<p>DOCUMENTATION:</p> <p>The following documents in English language should be supplied along with the machine:</p> <p align="center">Hard Copies - 3 Sets Vendor to confirm In CD form - 1 Set</p> <ol style="list-style-type: none"> 1. Operating manuals of Weld Head, Controller, Welding Power Source. 2. Operating and Maintenance manuals of all Accessories 3. Programming manuals of the Machine 4. Maintenance manuals with all assembly drawings of machine assemblies / sub-assemblies with parts list 5. Electrical Wiring Drawings – Power & Control Circuits 6. Maintenance & Interface manuals for Machine Control System 7. Microprocessor / Complete Printed Circuit Board Schematics indicating check points (Test Points) for Electronic Controls. 8. Complete list of Alarm log, Error code, error messages & remedies and on line fault diagnostics to be provided by the vendor. 9. Specifications/Ratings of All Bought-Out-Items. 10. Warranty / Guarantee Card for all Bought-Out-Items. 11. Catalogues, O&M manuals for all Bought-Out-Items used in the machine. 12. Trouble Shooting Chart for Main and all Sub-Systems. 13. Parameters Selection Software, File Handling and Display Recording. 14. Serial and USB Ports to be ensured. 15. Preventive Maintenance check list for Electrical and Mechanical System 16. Complete list of spares for machine, along with item part no / specification / type / model and make & address of the sub-vendor. 	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
15.0	EQUIPMENT INSPECTION & ACCEPTANCE	
15.1	AT VENDOR'S WORKS	
	<p>1. The Orbital TIG welding equipment and Accessories shall be tested for its performance prove-out as per BHPV Specifications, at the Supplier's Works prior to despatch.</p> <p>2. Welding trials have to be conducted on short length sample tubes, in presence of BHPV Engineers, at Supplier's works, for a minimum of 10 Joints in any of the specified tubes mentioned at Clause No 2.2</p> <p>The tubes & Welding consumables are to be arranged by the supplier.</p> <p>3. The supplier to program the welding parameters for the above joints and weld samples.</p> <p>4. The sample welded joints should pass through the Radio-graphic & UT Test and satisfy the requirements of BHPV as per Clause 3.0 e.</p> <p>5. Supplier to provide necessary arrangements for recording the programmed process parameters.</p>	
15.2	AT BHPV WORKS	
	<p>1) The prove-out trials of the welding operation shall be for the tubular coils / circuits with the sizes/ specifications mentioned under.</p> <p>a. Tube Dia 51mm x thick 7.1mm / SA213 T91</p> <p>b. Tube Dia 54mm x thick 4mm / SA213TP347H</p> <p>c. Tube Dia 38.1mm x thick 5mm / SA213 T22</p> <p>2) The supplier to program the welding parameters for the above joints and weld samples.</p> <p>3) The machine output / productivity has to be proved out on each machine, as detailed under Clause No. 3.1.</p> <p>4) The materials will be supplied by BHPV.</p> <p>5) Welded joints should pass through the Radio-graphic Test and satisfy the requirements of BHPV as per Clause 3.0 e.</p>	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
16.0	TRAINING:	
16.1	The supplier shall train TWO BHPV Engineers in Operation and Maintenance (Mechanical, Electrical/ Electronics and Programming) of the Machine for FIVE working days at supplier's works after the pre-dispatch inspection.	Vendor to confirm
16.2	Vendor to clearly mention whether the training is offered free of cost or chargeable. If chargeable, the vendor has to quote on manday basis.	Vendor to Specify
16.3	Airfare, board & lodging for the BHPV Engineers who will be visiting supplier's works for pre-dispatch inspection and training, shall be borne by BHPV.	Vendor to note
16.4	The Supplier shall impart training to BHPV's Machine Operators and Maintenance crew in Operation and Maintenance (Mechanical, Electrical/ Electronics and PC based control System) during commissioning of the Machine at BHPV works for 10 working days.	Vendor to confirm
16.5	The training shall include specialized coaching in i) Safety ii) Operation of the machine iii) PC based System & Operation, iv) Trouble-Shooting, v) Software Application vi) All special features of the machine vii) Electrical / Mechanical / Electronics systems	Vendor to Confirm
16.6	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHPV personnel	Vendor to Confirm

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER (with complete Technical Details)
17.0	MACHINE ERECTION & COMMISSIONING	
17.1	Vendor to take full responsibility for supervision of the erection & commissioning, vendor shall start up, test the machine, it's control & all types of other supplied equipment, carrying out welding of test pieces etc. Service requirement like power, air & water shall be provided by BHPV at only one point to be indicated by Vendor in their foundation/layout drawings. Other requirements like crane and helping personnel shall also be provided by BHPV.	Details of these requirements should be informed by Vendor in advance
17.2	Successful proving of BHPV Requirements by the Vendor shall be considered as part of commissioning. All tests, as mentioned in Clause No. 15.2 shall form part of commissioning activity.	Vendor to confirm
17.3	Tools, Tackles, Test Mandrels, instruments and other necessary equipment required to carry out all above activities should be brought by the Vendor.	Vendor to confirm
17.4	The Vendor shall bring special tools, tackles, Test Mandrels, Instruments and any other necessary equipment required for erection of the machine. Necessary tools like Torque Wrench, Spanners, Keys, etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer	Vendor to confirm
17.5	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the Vendor on returnable basis.	Vendor to confirm
17.6	Portion, if any, of the machine, accessories and other supplied items where paint has rubbed off or peeled during transit or erection should be repainted and merged with the original surrounding paint by the vendor. For this purpose, the Vendor shall supply sufficient quantity of touch-up paint of various colours of paint used.	Vendor to confirm

ORBITAL TIG WELDING EQUIPMENT (PAR B)

S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER <small>(with complete Technical Details)</small>	
18.0	THERMAL STABILITY FOR AMBIENT CONDITIONS & ENVIRONMENTAL PERFORMANCE OF THE MACHINE:		
18.1	The Orbital Welding heads, Pendant Controller, Main Controller and Welding Power Source shall be suitable for an ambient temperature of +45 deg C and relative humidity of 93 % respectively, but both do not occur simultaneously.	Vendor to confirm	
18.2	The vendor should ensure trouble free operation of the machine with Thermal Stability of the complete machine and accuracy requirements of BHPV components, keeping in view of ambient conditions as mentioned above.	Vendor to confirm	
18.3	The machine, including attachments and accessories, should be suitable for 24 hrs. Continuous operation to its full capacity for 24 hour a day and 7 days a week throughout the year.	Vendor to Confirm	
18.4	If any safety / environmental protection enclosure is required it shall be built in the machine by the vendor.	Vendor to confirm	
18.5	Paint of the machine should be oil / coolant resistant and should not peel off	Vendor to confirm	
18.6	There shall not be any emissions from the machine except fumes of welding during butt welding.	Vendor to confirm	
18.7	The Machine should conform to following factors related to environment: Maximum noise level shall be 85 dB(A) at normal load condition, 1meter away from the machine with correction factor for back ground noise. This will be measured as per international standards like DIN 45635-16. Supplier to demonstrate compliance to noise level, if asked for.	Vendor to Confirm	
19.0	MACHINE PACKING		
19.1	Sea worthy & rigid packing for all items of complete machine, control system, all accessories and other supplied items to avoid any damage/loss in transit. When machine is dispatched in containers, all small loose items shall be suitably packed in boxes	Vendor to confirm	

ORBITAL TIG WELDING EQUIPMENT (PAR B)

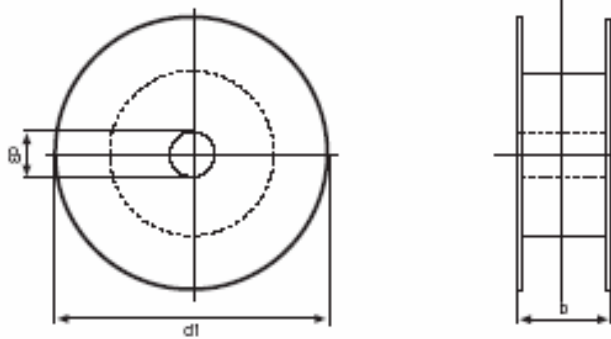
S.No.	PARTICULARS AND BHPV SPECIFICATION	VENDOR'S OFFER <small>(with complete Technical Details)</small>
21.0	GUARANTEE:	
21.1	Performance Guarantee to be given for 12 months from the date of commissioning OR 18 months from the date of dispatch whichever is earlier.	Vendor to confirm
22.0	GENERAL POINTS	
22.1	Machine Model Number and other related details	Vendor to provide
22.2	Total Connected Load (in kVA)	Vendor to specify
22.3	Total Weight of the Machine & Accessories	Vendor to specify
22.4	General Arrangement drawing of the Weld Head to be submitted with the offer.	Vendor to provide

Enclosures:

- ANNEXURE – 1 : Wire Spool Size and Specification
- ANNEXURE – 2 : Tube End Edge Preparation Styles
- ANNEXURE – 3 : Typical Coil to be built-up by Orbital Welding

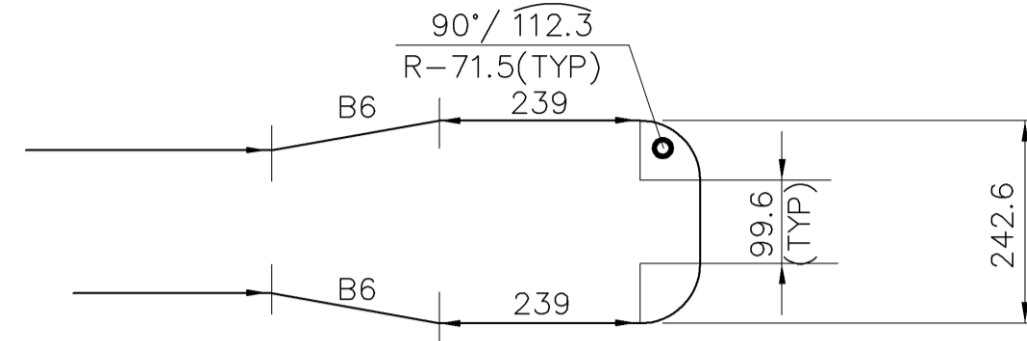
WELDING WIRE SPOOL DETAIL

plastic spool

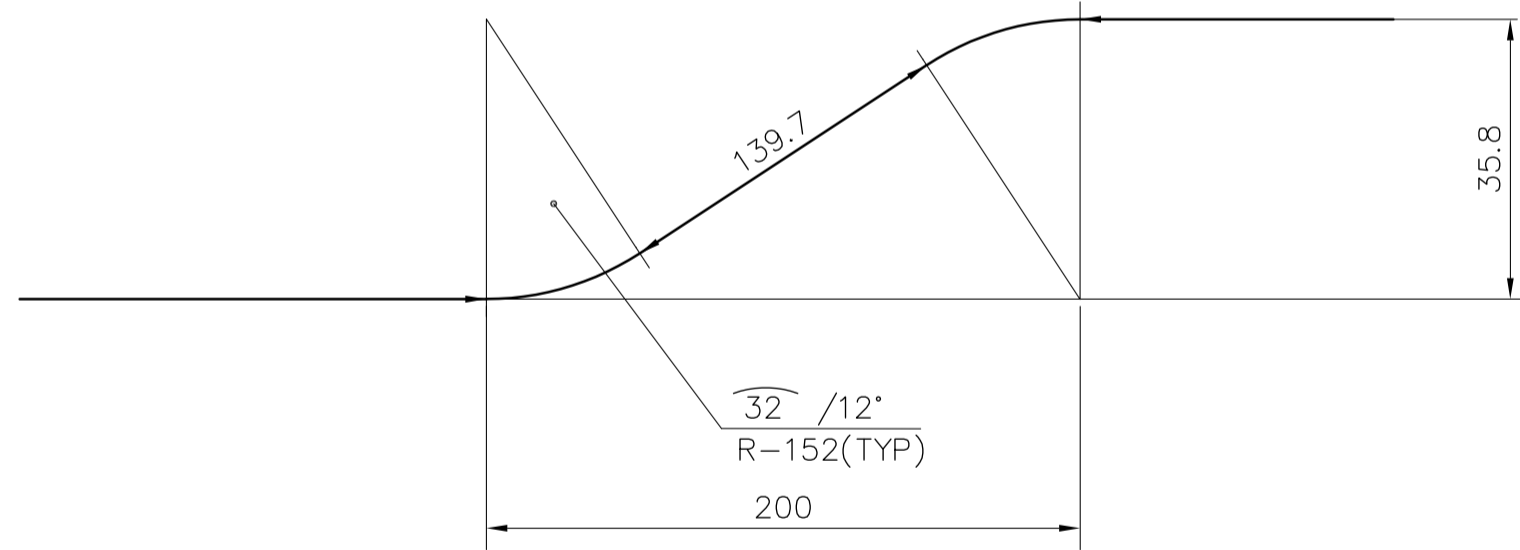
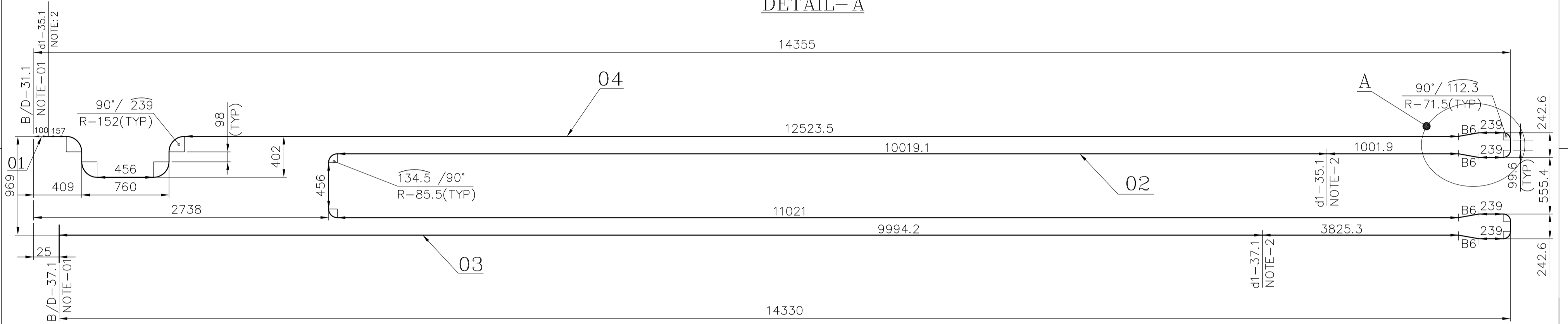


ENISO 544	outside diameter d_1	spindle hole d_3	external width b	tapped hole diameter d_4	distance from center e_1	kg wire
S 100	100	16,5	45	—	—	1,0

All dimensions are in mm
Drawing No. CABS-3-10N-01
BHPV, VISAKHAPATNAM



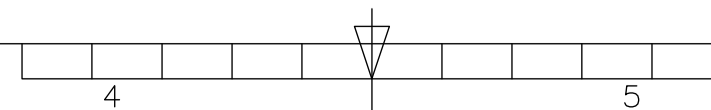
DETAIL-A



DETAIL-B6

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT	GS	ZONE
					VAR NO	MATERIAL SPECN		DI	QUANTITY		
	04	TUBE D47.63x6.0; 16500 LONG				15-092-043 SA 213 T91		A	107.800		
	03	TUBE D47.63x5.0; 9994.2 LONG				15-189-064 SA 213 T22		A	152.150		
	02	TUBE D47.63x8.0; 26800 LONG				15-189-076 SA 213 T22		A	146.950		
	01	TUBE D47.63x8.0; 100 LONG				15-189-076 SA 213 T22		A	0.830		

CIRCUIT



COMMERCIAL TERMS AND CONDITIONS FOR SUBMISSION OF OFFER**1.0 QUOTATIONS**

Bidders shall submit the offer in TWO INNER ENVELOPES as indicated below which shall be sealed in one outer envelope.

Envelope I: This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked “**Part I – Technical and Un-priced commercial bid**” Indicating Tender No., Due Date and Address & Reference of the Bidder.

Envelope II: This sealed envelope should contain price details this envelope should be clearly marked “**Part II - Price bid**” indicating Tender No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, super scribing as Part I and Part II of Tender No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 Hrs (IST)
Tender should not be addressed to any Individuals name but only designation to

Dy. General Manager (MM)
BHARAT HEAVY PLATE & VESSELS LIMITED
VISAKHAPATNAM - 530 012 (A P), INDIA.

Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by technical literature catalogue and detailed dimensional drawings in ENGLISH or otherwise the offers will not be considered.

2.0 PART I (TECHNICAL & UN-PRICED COMMERCIAL BID)**2.1 Technical**

This part shall include / indicate the following:

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations the same should be clearly specified. Offers received without conformation to our specification will be rejected.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogue to be attached.
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided
- 2.1.7. In case of foreign bidder offer, the Principal's technical offer only should be enclosed.

2.2 Un-Priced Commercial

This part shall include / indicate the following

- 2.2.1. Port of shipment / Station of dispatch
- 2.2.2. Terms of payment

- 2.2.3. FOB/FCA price along with freight charges up to Chennai port (for foreign bidders) Ex-works/FOR Dispatch Station price along with freight charges up to BHPV Visakhapatnam (for Indian bidders)
- 2.2.4. Taxes, Service tax & duties including Cess applicable.
- 2.2.5. Delivery Schedule
- 2.2.6. Filled-in check list to be enclosed
- 2.2.7. Offer validity
- 2.2.8. Country of origin
- 2.2.9. Percentage of agency commission if any along with a copy of Agency agreement The FOB/FCA/CFR Prices quoted shall include the agency commission.
- 2.2.10. A copy of "Un-Priced Part II 'i.e., a copy of the Price Bid without the price details to be enclosed.
- 2.2.11. BHPV is eligible for availing CENVAT / VAT credit on both inputs and capital inputs. The suppliers invoice should separately indicate the amount of duty / taxes and should invariably mention the following details:
 1. The Central excise registration number, range division and commission rate of the supplier's jurisdiction.
 2. The rate of duty and 8 digit central excise tariff heading of the item supplied.
 3. The TIN, VAT, CST registration number of the supplier.

The duplicate copy of the invoice is required for availing CENVAT credit and original copy for availing VAT credit, if purchased within the state.

In case of foreign bidders the duplicate copy of the electronic Bill of Entry along with TR6 challan should be made available for availing CENVAT credit on CVD, Cess (S) and SAD.

3.0 **PART II (PRICE – BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part-I

4.0 **OPENING OF TENDERS**

The Part I – Technical & un-priced commercial bid alone would be opened on the Tender opening date.

The Part II – Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price Bid opening date. Clarifications if any required by BHPV FOR Technical evaluation / commercial evaluation would be sought from Bidders before opening of Part II – price bid.

GENERAL

- 5.1. Incomplete offers will not be considered.
- 5.2. **Fixed priced:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order A bid submitted with an adjustable price will be treated as non-responsive and rejected Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regards to total price.
- 5.3. **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency, which should be clearly indicated in the un-priced commercial bid as well as in the price bid. Price bid opening date/ RA date will be considered as effective date for considering exchange rate to evaluate the offers.
- 5.4. **Terms of Delivery:** Bidders are required to quote their best delivery period. Foreign Bidders should submit their offer for net FOB/ FCA – Nearest Sea Port / Air Port as well as CFR / Chennai Seaport/ Airport. Freight charges up to Chennai port to be indicated separately. Indian Bidders should submit their offer for Dispatching station as well as FOR BHPV Visakhapatnam basis. Freight charges from works to BHPV Visakhapatnam to be indicated separately. Delivery from the date of Letter of Intent to be mentioned in the offer.

5.5 **Taxes and Duties:** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No/ Tariff No. etc, failing which the purchaser will not be liable for payment of such Taxes and Duties (Our TIN No.28280189432, APGST No. VSP/04/1/1023 dated 24.08.1968. CST No.VSP/04/1/1012 dated 24.08.1968 & BHPV ECC No AAA CB 7076 N-XM001. Assessment circle Visakhapatnam.)

5.6 **Validity:** The offers for main equipment and spares shall be kept open for acceptance for a period of 120 days (one hundred and twenty days) from the dates of opening of the tender (part I)

5.7 Terms of Payment:

5.7.1 Indian Bidders:

5.7.1.1 BHEL, Trichy on behalf of BHPV (Subsidiary of BHEL) will arrange for an irrevocable, usance Letter of Credit (60 days from date of dispatch) after receipt of Inspection release note and against presentation of documents for 80% of payment (80% of basic price + 100% Taxes). And balance 20% of payment will be made after acceptance of material/commissioning of the equipment at BHPV, Visakhapatnam and on submission of Performance Bank Guarantee.

5.7.1.2 Documents to be submitted by Indian Bidders for negotiating LC:

1. Original Invoice in triplicate in the name of BHPV.
2. Original LR in the name of the LC issuing Bank
3. Original packing list in triplicate in the name of BHPV.
4. Original Test certificate in triplicate in the name of BHPV.
5. Inspection release Note.
6. One original Bank guarantee, if applicable in favour of BHPV.
7. Certificate issued by the beneficiary certifying that the materials dispatched and shown in the packing list are not less than that invoiced.
8. Insurance for 100% of the commercial invoice value made out in the name of LC issuing bank, covering all risks.
9. Any other conditions/documents as mentioned in the Purchase Order.

5.7.1.3 Additional conditions for Indian Bidders:

1. **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
2. In the event of delayed presentation of documents beyond the validity for negotiation(Subject to acceptance of documents by Applicant), 5% of invoice value will be retained towards demurrage and other charges and the difference if any between actual charges and recovery will be settled between BHPV and beneficiary outside the purview of LC terms.

5.7.2 Foreign Bidders

An Irrevocable letter of Credit shall be established by BHEL, Trichy on behalf of BHPV (Subsidiary of BHEL) for 80% of FOB/FCA/CFR/ (excluding Indian Agent's commission) 2 months prior to shipment with a validity of 3 months and negotiation after shipment against shipping documents. Letter of Credit shall be opened through an authorized bank of BHEL in India. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on Commissioning & acceptance of the equipment at BHPV Visakhapatnam, against submission of 10% performance bank guarantee. All Bank charges outside India are to supplier's account. Lump sum erection and commissioning charges if any shall be payable after satisfactory erection & commissioning of the equipment by sight draft against certificate issued by the competent authority.

5.7.2.1 Documents to be submitted by Foreign Bidders for negotiating LC:

1. Original Invoice in triplicate in the name of BHPV.
2. Original bill of lading in triplicate in the name of the LC issuing bank.
3. Original packing list in triplicate in the name of BHPV.
4. One original certificate of origin.
5. Original Test certificate in triplicate in the name of BHPV.
6. Inspection release Note.
7. One original Bank guarantee, if applicable in favour of BHPV.
8. Certificate issued by the beneficiary certifying that one copy of non-negotiable documents comprising Bill of Lading, Invoice, Packing List, Certificate of country of origin and Test certificate sent to Port consignee.
9. Certificate issued by the beneficiary certifying that the materials shipped and shown in the packing list are not less than that invoiced.
10. Insurance for 110% of the commercial invoice value made out in the name of LC opening bank, covering all risks, clearly mentioning the name of claim settling agent in India. The claims will be settled in the same currency as that of LC.
11. Any other conditions/documents as mentioned in the Purchase Order.

5.7.2.2 Additional conditions for Foreign Bidders:

1. **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
2. In the event of delayed presentation of documents beyond the validity for negotiation (Subject to acceptance of documents by Applicant), 5% of invoice value will be retained towards demurrage and other charges and the difference if any between actual charges and recovery will be settled between BHPV and beneficiary outside the purview of LC terms.

5.7.3 Common to both India & Foreign Bidders.

Erection & Commissioning (E&C) charges will be released after deduction of Income Taxes as per the Govt. of India rules. The TDS certificate will be issued by BHPV. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.

- 5.7.4 Loading criteria common to both Indian and foreign bidders:** Vendor should accept the payment terms specified above. However for any deviation to the payment terms offered with reference to the above criterion will be loaded with prime lending rate of SBI prevailing on date of opening of price bid + %, which shall be computed for the differential period between BHPV terms of payment and the offered payment terms by vendor.

- 5.8 DUNS number (allotted by M/s. DUN & Bradstreet) shall be mentioned in your offer.
- 5.9 **Guarantee:** The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier.
Offers from vendors not accepting to the requested guarantee period will be rejected.
- 5.10 **Contract Execution Bank Guarantee (CEBG):** The successful tenderer shall furnish a Bank Guarantee from any Nationalized Bank for 5% of Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) confirming that the order will be executed as per the terms and conditions and this should be valid till final dispatch date (LR/GR/BL/AWB) with additional 2 months claim period. Letter of Credit will be processed only after receipt of CEBG. The CEBG is to be furnished within 3 weeks from the date of Purchase order.
Offers from vendors not accepting to submit CEBG will be rejected.
- 5.11 **Performance Bank Guarantee (PBG):** The supplier shall furnish a Bank guarantee from any Indian Nationalized Bank approved by BHPV in the format, given by BHPV along with purchase order for 10% of the Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) valid for period of guarantee with additional claim period of 2 months.
Offers from vendors not accepting to submit PBG will be rejected.
The CEBG & PBG shall be obtained from any Indian Nationalized Bank/ Scheduled Commercial Banks.
- 5.12 **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
- 5.12.1 **Loading Criteria for Liquidated Damages:** Any deviation from above LD Clause to the extent for which LD is not agreed by the vendor i.e., differential % value will be loaded on basic price, e.g. If some vendor agrees for say maximum of 6% LD then his price will be loaded by 4% (10 – 6) of his quoted basic price.
- 5.13 **Risk purchase:** If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHPV will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the delivery period mentioned in the Purchase Order.
Offers from vendors not accepting the above Risk Purchase terms will be rejected.
- 5.14 **Indian Agent & Agency commission:** An Indian Agent can represent only one Foreign Manufacturer against a particular Tender. The FOB/FCA/CFR price quoted by the Foreign bidder shall include the agency commission. However, the agency commission component payable to their Indian Agents shall be shown separately in the offer. This will be paid by BHPV in India Rupees, on satisfactory commissioning & acceptance of the equipment. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with offer. For calculation of Rupee equivalent of Agency Commission exchange rate as prevailing on the date of Purchase Order will be taken.
- 5.15 **Short shipment / Warranty replacement:** In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warrantee period shall be on FOR, BHPV - Visakhapatnam, basis.

- 5.16 **Inspection & Testing:** All goods shall be subject to inspection by BHPV or its authorized representatives at supplier's works or at BHPV stores. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHPV, Visakhapatnam.
- 5.17 **Operating and Maintenance manuals:** The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as called for in the Technical Specification in the required number of copies will be provided.
- 5.18 **Cenvat & VAT credit. (for Indian Bidders only):** The quotation must indicate Tariff item number and rate of Excise Duty applicable. The original Excise Duty Gate Pass will be required to be furnished in case charges to us. If the bidder is availing Cenvat credit for his input materials, the effect of proforma credit should be passed on to the purchaser.
- 5.19 **Packing:** The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involves for normal transport by sea / air / rail road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.
- 5.20 **Salient Points of HSE** (Health, Safety & Environment) that are to be considered while submissions of offer are:
- 5.20.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuels/chemicals)
- 5.20.2 Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- 5.20.3 If any Hazardous chemicals as per MSIHC (Manufacturing, Storage and import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with on site & OFF site emergency plan (as applicable).
- 5.20.4 The noise level at operator level shall be within 90 Dba
- 5.20.5 OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified
- 5.20.6 The machine/equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948
- 5.20.7 The supplier shall submit the layout drawing of operating controls, displays etc and operating instructions to enable ergonomics evaluation and approval
- 5.20.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished
- 5.20.9 Alarm System (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment.
- 5.20.10 Details of all hazardous / harmful substances discharges as by-products / wastes during operations of the machine / equipment, such as fumes, gases, dust particles, aerosols UV./IR (Ultra violet / Infra red) radiations, etc shall be furnished, along with their concentrations and their TLV, (Threshold Limit Value)

- 5.20.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.
- 5.20.12 All furnaces, process units, DG sets, paint booths, shot blasting chambers, etc shall be provided with stack(s) of sufficient height as per guidelines laid down in the Environment Protection Rules 1986.
- 5.20.13 wherever industry specific standards are not available for control of pollutants, general emission standards shall be used
- 5.20.14 Chemicals banned due to their negative impact on the environment shall not be used on the process
- 5.20.15 Fuels with sulphur content less than 0.05% shall be proposed.
- 5.20.16 Details regarding nature of waste generated and appropriate disposal practices available shall be provided, along with the operation procedure of the plant / process.
- 5.20.17 Hazardous chemicals and flammable substances shall be transported only through authorized transporters and all safety practices as laid down in applicable legislative requirements such as Central Motor Vehicle Rules, Manufacture, Storage and Import of Hazardous Chemical 1989, etc. shall be followed.
- 5.20.18 Primary materials used in the equipment shall be specified and they shall be eco - friendly.
- 5.21 Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHPV).
- 5.22 BHPV also reserves its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- 5.23 BHPV reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- 5.24 BHPV shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHPV.
- 5.25 BHPV reserves the right to go for a Reverse Auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications. BHPV may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHPV will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHPV will inform the vendor in writing in case of reverse auction, the details of service provider to enable them to contact & get trained.

4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
 5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
 6. BHPV will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHPV like Packing & Forwarding charges, taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHPV standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
 7. Reverse auction will be conducted on scheduled date & time.
 8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
 9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHPV through Service provider within 24 hours of Auction without fail.
 10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHPV as per prevailing procedure.
 11. In case BHPV decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHPV shall be opened as per BHPV’s standard practice.
- 5.26 **Force Majeure clause:** If at the time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist, if the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for Indian bidders

(To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices have been quoted on "F.O.R BHPV" basis only (Yes / No)	
P & F (Please confirm whether included or not)	
Freight (Please confirm whether included or not)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Sales Tax (please Specify)	
Excise Duty (please Specify)	
Delivery period from the date of Purchase Order (please Specify). A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%) (Yes / No)	
Risk Purchase as per clause 5.13 (Yes / No) (Offers from vendors not accepting the Risk Purchase terms will be rejected)	
Payment terms (As per Clause No. 5.7.1) (Yes / No)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier) (Yes / No) (Offers from vendors not accepting to the guarantee period will be rejected)	
Inspection (please Specify the Place of Inspection)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for foreign bidders (To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices basis (FOB/CFR/CIF – Please Specify)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Currency in which quoted (please Specify)	
Port of loading (please Specify)	
Country of Origin (please Specify)	
Delivery period from the date of Letter of Intent (please Specify) A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%)	
Risk Purchase as per clause 5.13 (Offers from vendors not accepting the Risk Purchase terms will be rejected) (Yes / No)	
Payment terms (As per Clause No. 5.7.2)	
Agency commission (refer clause 5.14)	
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier). (Offers from vendors not accepting to the requested guarantee period will be rejected) (Yes / No)	
Inspection (please Specify)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Dimension of the Largest Part (please Specify)	
Packing Schedule (No of containers and their Sizes) (please Specify)	
Approximate Net Weight of the total Consignment (please Specify)	
Approximate Gross Weight of the total Consignment (please Specify)	

Signature & Office Seal of the bidder