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NOTICE INVITING TENDER(NIT)

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

**SUB: Automatic Tube Cutting & Edge
Preparation Machine**

Our Ref: **MM/2/10/3132/CAP/W-102/5106**

DATE: 10.08.2012

Sealed quotations in duplicate are invited from suppliers on **or before 19.09.2012** **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.	Automatic Tube Cutting & Edge Preparation Machine	2 Nos
	Encl: 1. Qualifying Criteria PART A 4 pages 2. Technical Specifications PART B 22 Pages 3. Annexure – 1 2 Pages 4. Annexure – 2 1 Page 5. 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
AUTOMATIC TUBE CUTTING AND EDGE PREPARATION 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	List of customers to whom ATCEP 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.	
3	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centres in India.	
4	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 Automatic Tube Cutting & Edge Preparation Machine.

S. No.	REQUIREMENTS	VENDOR's RESPONSE
5	The Bidder / Vendor (OEM) shall have a minimum of TEN Years of Continuous Experience in the field of Design, Manufacture and Supply of AUTOMATIC TUBE CUTTING & EDGE PREPARATION MACHINE [including tube-handling system]	
6	Only those vendors (OEMs), who have supplied and commissioned at least ONE AUTOMATIC TUBE CUTTING & EDGE PREPARATION MACHINE complete with unit for cutting to size, end preparation stations and tube conveying and transfer mechanisms for <u>tube of outer diameter 76 mm or above and length 12m or above</u> 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 AUTOMATIC TUBE CUTTING & EDGE PREPARATION MACHINE [including tube-handling system] 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:	
6.1	Name and postal address of the customer or company where similar equipment is installed.	
6.2	Name and designation of the contact person of the customer.	
6.3	Phone, FAX no and email address of the contact person of the customer.	
6.4	Month and Year of commissioning of the equipment.	
6.5	Application for which the equipment is supplied	
7	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 6.0 above.</u> (For obtaining the Performance certificate, a suggestive format is provided in SECTION – IV)	
8	Offers of only those vendors who meet the above Qualifying Criteria will be considered for further evaluation.	
9	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.	
10	DELIVERY - The bidder shall quote the best possible delivery. However the delivery period shall not exceed 10 months from the date of Purchase Order. A grace period of 2 months in addition is provided. The additional grace period will attract loading, which is explained in the commercial terms of the enquiry. The delivery period is reckoned from the date of purchase order to date of despatch from the vendor works. Erection & Commissioning : 2 Months	

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 RESPONSE
11	The BIDDER / VENDOR shall submit the offer in TWO PARTS- Technical [with PART A & PART B] & Commercial and Price Bid.	
12	The offer shall contain a comparative statement of Technical Specifications given by BHEL and the offered details submitted by the Bidder, against each clause. Merely stating 'YES' or 'NO' or similar words wherever 'Vendor to Specify' details in the technical comparative statement may lead to disqualification of the Technical Offer.	
13	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.	
14	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.	
15	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
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

AUTOMATIC TUBE SIZING & EDGE PREPARATION MACHINE – PART B

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TECHNICAL SPECIFICATIONS for AUTOMATIC TUBE SIZING & EDGE PREPARATION MACHINE [including tube handling system]

S.No	PARTICULARS AND BHPV SPECIFICATION		BIDDER’S OFFER (with complete Technical Details)
1.0	PURPOSE & APPLICATION		
	a. The machine is to be designed and constructed for measuring, cutting and edge preparation automatically from tube feed to discharge. The edge preparation involves cutting, facing, chamfering, boring to correct size of ID, depending on job requirement. b. The edge preparation profile (normally to form “V” Groove and “J” Groove style Weld Joint preparation when the tubes butt against each other– Refer to ANNEXURE – 1) is to be obtained. c. The Basic Machine with all the Sub-Systems and Accessories are to be designed for working in three shifts (8 hour shift) a day and on all days in an year. BIDDER is expected to give technical write up on machine design, construction and operational features to bring out the capability of the proposed equipment, to meet the BHPV specification requirements		
2.0	WORK PIECE / JOB DETAILS		
2.1	TUBE DIMENSIONS		
2.1.1	Range of Diameter [O.D.]	31.8 mm to 76.1 mm	
2.1.2	Range of Wall Thickness	2.4 mm to 15 mm	
2.1.3	Minimum Raw Tube Length	4000 mm (4 meters)	
2.1.4	Maximum Raw Tube Length	14000mm (14metres)	
2.1.5	Minimum Finished Tube Length	2000 mm (2 meters)	
2.1.6	Maximum Finished Tube Length	14000mm (14metres)	
2.2	Bend in tubes: Due to handling of tubes in shop during loading and unloading, some of the tubes get bent. Machine to be designed to accommodate bend in tubes to an extent of 10mm from the axis of the tube. Vendor to confirm.		

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S.No	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)																																				
2.3	<p>TUBE SIZES:</p> <p>[NOTE: All are OD (Outer Diameter) controlled tubes with a tolerance of maximum 12% on tube wall thickness.]</p> <table border="1"> <thead> <tr> <th>S.No.</th><th>OD, in mm</th><th>THICKNESS range, in mm</th></tr> </thead> <tbody> <tr><td>1</td><td>31.8</td><td>3.2 to 5.0</td></tr> <tr><td>2</td><td>38.1</td><td>3.2 to 5.3</td></tr> <tr><td>3</td><td>44.5</td><td>4.0 to 10</td></tr> <tr><td>4</td><td>47.63</td><td>5 to10</td></tr> <tr><td>5</td><td>51.0</td><td>3.6 to 12</td></tr> <tr><td>6</td><td>51.0 (Rifle Tubes)</td><td>5.6 / 7.1</td></tr> <tr><td>7</td><td>54.0</td><td>3.6 to 12</td></tr> <tr><td>8</td><td>57.0</td><td>5 to 10</td></tr> <tr><td>9</td><td>63.5</td><td>4.8 to 13.5</td></tr> <tr><td>10</td><td>63.5 (Rifle Tubes)</td><td>6.3</td></tr> <tr><td>11</td><td>76.1</td><td>7.1 to 13.5</td></tr> </tbody> </table>	S.No.	OD, in mm	THICKNESS range, in mm	1	31.8	3.2 to 5.0	2	38.1	3.2 to 5.3	3	44.5	4.0 to 10	4	47.63	5 to10	5	51.0	3.6 to 12	6	51.0 (Rifle Tubes)	5.6 / 7.1	7	54.0	3.6 to 12	8	57.0	5 to 10	9	63.5	4.8 to 13.5	10	63.5 (Rifle Tubes)	6.3	11	76.1	7.1 to 13.5	
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11	76.1	7.1 to 13.5																																				
2.4	<p>MATERIAL SPECIFICATION</p> <p>A) CARBON STEEL: SA 192, SA 210A1, SA 210C [ASTM]</p> <p>B) ALLOY STEEL: SA 209T1, SA 213T11, SA 213T22, T23 SA 213T91, T92,</p> <p>C) STAINLESS STEEL: SA 213 TP304H, SA 213 TP321H, SA 213 TP347H, Super 304H</p>																																					

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S.No	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
3.0	MACHINE OUTPUT / PRODUCTIVITY	
	<p>BIDDER has to guarantee a minimum output of around 1000 ends preparations (one thousand end preparations in 500 tubes with the following dimensions / details, in a single shift of 8 hrs:</p> <ul style="list-style-type: none"> a. Raw Tube Length: ≈ 13000 mm b. Finished Tube Length after machining both ends: 12950 mm c. EP Style on both ends : 'G' style as given in ANNEXURE-1. d. Tube Size: 38.1 mm (OD) x 5.3 mm (thickness) e. Tube Material: Carbon Steel – SA 210 Gr. A1 f. I.D. Bore length: 12 mm in Tube Wall Thickness 	
4.0	OPERATIONS INVOLVED:	
a	Loading of single tubes from tube bundle placed on tube stock table onto the in-feed conveyor by suitable kick-in device.	
b	Movement of tube, by suitable tube conveying device, to programmed tube length for cut-off	
c	Clamping of tube and tube cut off.	
d	Kickoff of remnant length (2000mm to 7000mm), if any, by suitable kickoff arrangement in the tube infeed line	
e	Tube transfer to subsequent stations for End preparation of tube ends.	
f	After completion of final operation, the Tube is moved to the tube discharge stock table by means of a kick-off arrangement. The tubes to stack against a stopper.	
g	The tubes are to be rolled into the tube dump by releasing a stopper.	
h	Once the tube is transferred out of the line, a new tube comes to the line and the same processing is repeated.	
i	Remnant lengths of 1000 mm and below should fall in a bin placed in the gap between tube infeed conveyor and the tube cutting unit	
	[NOTE: Wherever possible parallel activities are to be contemplated to improve efficiency of the machine performance and productivity.]	

AUTOMATIC TUBE SIZING & EDGE PREPARATION MACHINE – PART B

S.No	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
5.0	MACHINE CONFIGURATION: Each machine shall consist of following components & equipments:		
5.1	Tube Stock Table and In feed Conveyor	1 set	
5.2	Tube Length Measuring Unit	1 set	
5.3	Cutting Unit	1 set	
5.4	Tube End Preparation Unit	2 sets	
5.5	Conveyor and Transfer Conveyor between Cutting Line and End Preparation Lines	1 set	
5.6	Out Feed (Discharge) Unit	1 set	
5.7	Tube dump on the out feed side	1 set	
5.8	Chip Conveyor with & Chip bin	2 sets	
5.9	Air Compressor with tank (if necessary), FLR Unit and Moisture Separator	1 set	
5.10	Electrical, Electronics, AC Drives & CNC/PLC Controls with Panels and Local Operator Consoles	1 set	
5.11	Hydraulic system	1 set	
5.12	Additional kick-off unit on the tube infeed side for balance useful length of 2m to 7m	1 set	
6.0	TUBE STOCK TABLE, IN-FEED & OUT-FEED (DISCHARGE) UNIT, KICK-OFF UNIT FOR REMAINING LENGTH:		
6.1	TUBE STOCK TABLE:		
6.1.1	The tube stock table shall have a flat portion and a sloping rack	Vendor to Confirm	
6.1.2	The flat portion shall be suitable for placing 2 tube bundles, each having 40 tubes of OD 51mm x 10mm thick of 14metre length. The width of the flat portion shall be around 1200mm.	Vendor to Confirm	
6.1.3	One tube bundle from above is opened so that tubes spread out on the sloping rack. The width of the sloping rack shall be suitable for 30 tubes of OD 51mm x 10mm thick (Length of the slanted portion of sloping rack shall be around 1500mm)	Vendor to Confirm	

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S.No	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
6.2	TUBE INFEED:	
6.2.1	Number of Tube Pickup arms	Minimum 10
6.2.2	Tube conveyor type	Pinch-Roll Type / Roller Type
6.2.3	Max Tube conveyor speed suitable for achieving 1000 ends / shift as per 3.0	Vendor to specify in m/min
6.2.4	Tube Conveyor Drive Type	Vendor to Specify
6.2.5	Number and power rating of each drive unit of tube conveyor	Vendor to Specify
6.3	OUT-FEED (DISCHARGE) UNIT:	
6.3.1	Discharge unit to unload tube from final station	Should be suitable for 2000mm to 14000 mm long tubes
6.3.2	Number of Tube Kick-Off arms	Minimum 10
6.3.3	Outfeed Discharge table shall have a sloping rack to accommodate 20 tubes of OD 51mm as buffer storage with a stopper to hold the tubes. On activating the stopper, which is either pneumatic or electrical, the tubes shall roll down in to the tubes dump.	Vendor to Specify
6.3.4	Tube dump shall be provide to hold 200 tubes of OD 51mm tubes.	Vendor to confirm
6.4	KICK-OFF UNIT FOR REMAINING LENGTH:	
6.4.1	Useful Length of remaining tube after cut-off	2000mm to 7000mm
6.4.2	Kick-off arrangement should be located on the infeed conveyor side	Vendor to confirm
6.4.3	Number of Tube Kick-off arms	Vendor to Specify
6.5	Complete technical description of stock loading table, single-tube kick-in device, tube conveyor, tube discharge arrangement and kick-off unit for remaining length should be furnished along with offer. A layout drawing to be furnished.	
7.0	MEASURING UNIT:	
7.1	Technical Features – Vendor to confirm and provide details wherever necessary	
A	To set and measure for cutting	

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S.No	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
B	To travel to its programmed position by the AC servomotor through rack and pinion mechanism.		
C	Movement of measuring unit on LM guide ways is preferable.		
D	The measuring unit shall not travel to its reference position for subsequent tubes of the same cut length		
E	The unit to have sensors to signal for creeping speed, to avoid hammering and breakage of component by tube hitting.		
F	There shall be no rubbing / collision of tube with length measuring unit during tube transfer to next station		
7.2	Measuring Range	2000 mm to 14000mm	
7.3	Max Traveling Speed – suitable to achieve the required productivity as per 3.0	Vendor to Specify.	
7.4	Rating of AC Servo Motor	Vendor to Specify	
7.5	Accuracy on length required	± 0.5mm	
8.0	TUBE CUTTING/ SIZING UNIT		
8.1	Basic Features		
a	The cutting unit is for cutting the tube at the programmed length by a metal circular saw		
b	Tube has to be stationary while cutting		
c	During cutting, the cutting blade has to be guided and clamped for rigidity, to ensure vibration free, smooth and sharp cut		
d	Movement of cutting unit (circular saw) shall be horizontal or downward for cutting operation		
e	Mist Coolant system for circular saw blade shall be provided for Cutting Operation		
8.2	Tube Cut-Off (sized) Length	Any length in the range of 2000 to 14000mm	
8.3	Tube diameters	31.8mm to 76.1mm	
8.4	Circular saw Drive	Inverter Controlled. Vendor to confirm	
8.5	Circular Saw Speed	Vendor to Specify	
8.6	Circular Saw Drive Rating	Minimum 7.5 KW. Vendor to specify the rating	
8.7	Cutting Feed	Hydraulic. Vendor to confirm	
8.8	Cutting Feed Range	Vendor to Specify	

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S.No	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
8.9	Cutting Stroke	Vendor to Specify	
8.10	Tube Clamping	Hydraulic. Vendor to confirm	
8.11	Tube Clamping Force	Vendor to Specify	
8.12	Circular Saw Dimensions. The saw cutting unit shall be suitable for the mentioned blade specification only. Vendor to confirm	Diameter: 400 mm, Mounting Bore: 50 mm-H7 Carrier Bolt Holes: 4 Nos. [Diameter 15 mm at PCD of 80 mm] Blade thickness : 3mm	
8.13	Tube Bit Collection Bin: A gap of about 1000mm has to be provided between Tube Cutting Unit and In-feed Conveyor for a bin to be located in such a position that remnant lengths fall into the bin once clamp is opened	Vendor to confirm	
	Collecting Bin should be supplied to suit for remnant length of tubes up to 1000 mm for one shift.		
9.0	TUBE END MACHINING / EDGE PREPARATION UNIT:		
9.1	Type of End Preparation: Different Edge preparation styles as per sketch given in ANNEXURE-1		
9.2	Technical Features:		
A	Two ends of the tube have to be edge prepared in either separate lines or simultaneous operation with Tube being Stationary. Vendor to provide the details of the configuration.		
B	Operations - edge chamfering, boring and facing to the specified dimensions as shown in the Annexure - 1		
C	There shall be a rigid stopper to position the tube end at a particular location for tube end preparation		
D	Suitable sliding chip guard shall be provided to protect the surroundings and personnel from flying metal chips. Viewing port with toughened glass shall be provided for viewing the machining in progress		
9.3	Drive Motor for End Preparation Unit	Inverter Controlled	
9.4	Drive motor rating	Minimum: 15 KW	

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S.No	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
9.5	Gear Reduction Ratio	Vendor to Specify	
9.6	Spindle rpm range	Vendor to Specify	
9.7	Spindle Stroke	Vendor to Specify	
9.8	Spindle Feed Range (Preferred)	Rapid - 4 m/min. Cutting feed-0.05 mm/rev to 0.5mm/rev Vendor to specify	
9.9	Feed drive	Hydraulic / Electric	
9.10	Type of self-centering tube clamping arrangement (Collet / Chuck)	Vendor to Specify	
9.11	Clamping operation	Hydraulic / Electric (Pneumatic not preferable)	
9.12	Clamping Force	Vendor to specify	
10.0	TUBE CONVEYOR & TRANSFER UNITS		
10.1	Purpose:		
A	For moving the tubes to end preparation lines		
B	Transfer the tube from each line, starting with cutting line, to the next, right up to discharge table		
10.2	Drive Mechanism for tube movement within each line.	Vendor to Specify	
10.3	Number of drives and rating of each drive in each line for tube movement	Vendor to Specify	
10.4	Speed of movement of tube in each line suitable to match the productivity as per Clause 3.0	Vendor to Specify	
10.5	Tube Transfer Mechanism from one line to the next	Vendor to Specify	
10.6	Tube Transfer Speed suitable to match the productivity as per Clause 3.0	Vendor to Specify	
11.0	CHIP COLLECTION SYSTEM:		
11.1	Application Metal chips from each end preparation unit should be collected in respective suitable chip bins to be supplied for each unit to ensure a clean working environment.		

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
11.2	Chip conveyors to be provide for each end preparation unit to transfer the metal chips to the chip collecting bins	Vendor to furnish details of chip conveyor system
11.3	Chip Collecting bins with rollers - 4 Nos to be supplied. The size of each bin shall be suitable to collect metal chips for two shifts consecutively.	Vendor to confirm
12.0	TOOLING	
12.1	A universal tool holder for all tube sizes mentioned under clause 2.2.0 with Standard ISO cutting tools with indexable high productivity carbide inserts capable of generating all edge preparation styles indicated in ANNEXURE-1. An indicative design of the universal tool holder is given in ANNEXURE-2. Supplier may provide their own design “universal tool holder”, suitable to match the productivity as per clause 3.0.	
12.2	Vendor to specify if any special tooling is required for RIFLE tubes as mentioned under 2.2.0	
12.3	Tool Holder Clamping: ISO 50 draw type clamping is preferable. Vendor to provide details of the clamping arrangement.	
12.4	Cutting Speed	Vendor to Specify
12.5	Max. Boring Depth - 100mm	Vendor to Confirm
12.6	Max. Cutting Feed	Vendor to Specify
12.7	Vendor to supply the following Tool Holders, Cutting Tools, Adapters etc. in all types, to meet machine performance prove out:	
12.7.1	Universal Tool Holders: Suitable for OD range of 38.1mm to 76.1mm and Min. bore ID of 27mm Bore Length of 12mm Quantity - 3 Nos per machine	
12.7.2	Special Tool Holder for OD 51mm x Th. 5.6mm Edge preparation style: ‘C’ style as per Annexure-1 Bore ID: 39.8mm Bore length : 100mm Quantity – 3 Nos per machine	

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
12.7.3	Carbide Inserts : 100 Nos in each variety	
13.0	OPERATION AND CONTROL SYSTEM	
13.1	OPERATOR'S CONTROL PANEL:	
13.1.1	Control shall be PC based PLC or CNC based.	Vendor to Specify
13.1.2	Operator's Panel having complete machine control system with suitable display unit of required configuration shall be provided for convenient and efficient operation. All switches should be within reach of operator. All displays / indications should also be conveniently placed (Layout showing complete details should be submitted with the offer)	Vendor to Confirm
13.2	PC based PLC or CNC SYSTEM & FEATURES	
13.2.1	Make: Preferred Make – Fanuc / Siemens any other reputed makes acceptable to BHPV	Vendor to provide details
13.2.2	Model (suitable and latest version, as available at the time of purchase order placement, shall be supplied).	Vendor to specify
13.2.3	Details of Standard features	Vendor to specify
13.2.4	Details of optional features, recommended by vendor.	Vendor to specify
13.2.5	The system should have full alphanumeric keyboard, display of suitable size, RS232C serial interfaces, parallel interface for printer, COM port for tele diagnostics, compact disc drive unit for data input/output, hard disk of sufficient capacity, pre-installed system software and other associated / required soft wares, etc . (Details shall be furnished by the Vendor in the TECHNICAL OFFER)	Vendor to Confirm
13.2.6	Display type and size	Vendor to Specify
13.2.7	Latest version Laptop with pre-loaded software for PLC/ CNC for maintenance to be supplied with the machine.	Vendor to Specify

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S. No.	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
14.0	DIAGNOSTIC SYSTEMS		
14.1	FAULT DIAGNOSTIC SYSTEM:		
14.1.1	Fault diagnostic system should be provided to show the faults on the display and detailed cause, and remedy for the-faults related to mechanical and electrical maintenance.	Vendor to confirm	
14.1.2	Help guide should be provided to use both diagnostic systems	Vendor to confirm	
15.0	HYDRAULICS		
15.1	The System should be centralized, modular / stacked valve construction having minimum number of pipes / pipe joints and located at suitable location with easy accessibility of components for maintenance.	Vendor to Furnish Details	
15.2	Pumps, valves, accessories etc shall be of Bosch-Rexroth / Vickers or equivalent reputed make acceptable to BHPV. (Details to be submitted). The seals used in cylinders shall be of Merkel / Parker / Bushak + Shamban / Hunger / Simrit make.	Vendor to confirm & furnish details	
15.3	Each pump should have an independent motor. Tandem pumps shall be avoided.	Vendor to confirm	
15.4	Suitable filtration system should be provided with Duplex / standby filter units. It is preferable to use re-usable type of filter elements in the system. The filter unit shall be of Hydac / Parker / Rexroth or equivalent reputed make acceptable to BHPV. (Details to be submitted).	Vendor to confirm & furnish details	
15.5	The flexible hoses used in the system shall be of Gates / Aeroquip / Parker or any other reputed make acceptable to BHPV.	Vendor to specify	
15.6	Failure indication for oil level, temperature, pressure, filter clogging should be provided	Vendor to confirm & furnish details	
15.7	Automatic shut off provision during hose failures, chiller failure, low oil level etc. Pump unloading feature during idle running to be provided for energy conservation. Details should be submitted.	Vendor to specify	
15.8	Cooling system of sufficient capacity to maintain complete Hydraulic System at a temperature not exceeding 50 deg C irrespective of the ambient conditions.	Vendor to confirm & furnish details	

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S.No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
15.9	It should be possible to replace hydraulic elements like valves, manifolds etc without disturbing the associated pipelines. The positioning of hydraulic elements should allow easy maintenance	Vendor to furnish details
15.10	Maximum Operating Pressure of hydraulic system	Vendor to specify
15.11	Main Pump flow in lpm and Motor Power in kW	Vendor to specify
15.12	Reservoir capacity (in litres)	Vendor to specify
15.13	All oil pipelines shall be of seamless steel and should undergo pickling process.	Vendor to confirm
15.14	One hand held minimess pressure gauge of suitable range with minimess hose (1.0 to 1.5m length) to be supplied along with the power pack. Check points to be provided in the system.	
15.15	All cylinders used in the machine should have standard bore and rod sizes. The piston rod shall be hard chrome plated.	Vendor to furnish details
15.16	The Power pack should be designed taking into account the energy efficiency (Hi-low pump system, proper unloading during idling, etc.). The motor used for pumps shall be energy efficient ones.	Vendor to furnish details
15.17	All the pipe / hose end fittings shall be of standard weld nipple with O-ring seating type. No ferrule joints are to be used in the hydraulic system. All threaded connections shall be of metric sizes	Vendor to confirm
15.18	The oil to be used shall be of standard ISO Viscosity Grades – 32 / 46 / 68	Vendor to specify
15.19	The maximum pressure of the system should preferably not to exceed 310 bar	Vendor to specify
15.20	The control voltages for all the Solenoids of the valves shall be of 24-V DC and all solenoid operated DC valves should have manual over-ride provision and light indicating solenoids.	Vendor to specify
15.21	The pipelines to be painted with standard colours as per the colour coding accepted internationally for hydraulic systems.	Vendor to furnish details
15.22	All hydraulic pipelines, hoses and electrical control cables to be neatly laid out with proper clamps and flexible hose conveyors wherever required.	Vendor to confirm
15.23	Suitable leakage oil collection metallic tray to be provided wherever required.	Vendor to confirm

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S.No.	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
15.24	All the components in the hydraulic power pack shall be provided with identification numbers, as per the hydraulic circuit and should be pasted with metallic identification number plates.	Vendor to confirm	
15.25	Hydraulic oil will be supplied by BHPV during commissioning at BHPV works. Vendor to provide the oil during pre-dispatch inspection.	Vendor to confirm	
16.0	LUBRICATION :		
16.1	Machine lubrication: Automatic centralized lubrication system with timer control and suitable metering cartridges to be supplied.	Vendor to confirm	
16.2	First filling of Lubrication Oil to be supplied by the supplier. Indian equivalent shall be mentioned.	Vendor to specify	
16.3	First filling of Grease should be supplied by vendor. Indian equivalent shall be mentioned.	Vendor to specify	
17.0	PNEUMATIC SYSTEM:		
17.1	The pneumatic operated elements of the machine shall work efficiently with BHPV compressed air supply at a pressure of 5 kg/cm ² . If higher air pressure is required for efficient operation of the machine, vendor shall furnish the information for Air Compressor / air booster of suitable capacity and quote as an optional price.	Vendor to confirm	
17.2	BHPV will provide compressed air at only one point near / on the machine. Vendor shall provide suitable filter-regulator-lubrication (FRL) unit at this point	Vendor to confirm	
17.3	Hydraulic, Pneumatic & Lubricating oil piping should be preferably metallic except places where flexible piping is essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to confirm	
17.4	Pneumatic components shall be of FESTO / NORGREN make or equivalent reputed make acceptable to BHPV.	Vendor to Specify	

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S.No.	PARTICULARS AND BHPV SPECIFICATION		BIDDER'S OFFER (with complete Technical Details)
18.0	ELECTRICAL & ELECTRONICS SYSTEMS		
18.1	415V with a voltage fluctuation of +/- 10%, 50HZ with a fluctuation of +/-3%, 3 Phase AC (3 wire system without neutral) power supply will be provided by BHPV at a single point near the machine, as per layout recommended by Vendor. 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	
18.2	Tropicalization: All electrical / electronic equipment shall be tropicalized.	Vendor to confirm	
18.3	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to confirm	
18.4	All electrical and electronic panels including operator's panel should be provided with fluorescent lamps for sufficient illumination and power receptacles of 220Volts, 5/15 Amp AC. All adapters /receptacles should have compatibility with Indian equivalents.	Vendor to confirm	
18.5	Motors & other electrical components shall conform to IEC or Indian Standards	Vendor to confirm	
18.6	All cables moving with traversing axes should be installed in caterpillar / Drag chain. Additionally, all the cable trays required for laying of cables should be included in the offer.	Vendor to confirm	
18.7	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm	
18.8	Cables shall be routed through totally enclosed cable trays. There shall not be cable trenches.	Vendor to Confirm	
18.9	In-cycle hour counter with reset facility should be provided.	Vendor to confirm	
18.10	All electrical & electronic control cabinets & panels should be vermin and dust proof. All Electric enclosures shall have IP 54 protection	Vendor to confirm	
18.11	Motors and drives shall be of Fanuc / Siemens / Allen Bradley / ABB / Indramat / SEW or any other reputed makes acceptable to BHPV conforming to IS / IEC Standards (Vendor should indicate make and type in the offer)	Vendor to confirm	
18.12	All feedback systems & field sensors, limit switches, proximity switches, pressure switches, temperature controllers, should be for heavy duty application and wired up with flexible PVC insulated screened cables. All field elements shall have easy accessibility for maintenance.	Vendor to confirm	

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
18.13	Air Conditioners of suitable capacity to be provided for all Electrical / Electronic Panels / Cabinets including Operator's Panel considering specified ambient conditions. Make: Rittal / Warner & Finley or any other reputed make acceptable to BHPV. Detailed specifications to be submitted.	Vendor to Specify
18.14	MACHINE LIGHTS	
18.14.1	Machine Spot Lights for sufficient illumination at End preparation and Tube cutting areas to be provided for clear visibility.	Vendor to Confirm
18.14.2	All light fittings, consumables, adapters/receptacles should have compatibility with Indian equivalents	Vendor to Confirm
19.0	MACHINE SPARES:	
19.1	Itemized break-up of mechanical, hydraulic, 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 furnished by vendor along with offer. 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
19.1.1	Mechanical & Hydraulic Spares: Pumps, Valves, Pressure Switches, Transducers, Flow Switches, Filters, Seals, O-rings, Hydraulic Hoses etc.	Vendor to confirm
19.1.2	Electrical / Electronic / CNC Spares: Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Encoders, Spares for PLC / CNC System, Servo Motors for Feed Drives, Power Module & Control Cards for Main Drive as well as Feed Drives etc.	Vendor to confirm
19.2	All types of 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

AUTOMATIC TUBE SIZING & EDGE PREPARATION MACHINE – PART B

S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
19.3	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
20.0	DOCUMENTATION:	
20.1	GA drawings, Machine detailed constructional drawings with dimensions, Civil Foundation layout drawings, Hydraulic / Pneumatic / Electrical / Electronic circuits with BOM, are to be submitted within 45 days from the date of ordering (in case of an order) for approval by BHPV.	Vendor to confirm
20.2	Tooling drawings for the ordered tooling are to be submitted within 60 days from the date of placing order, for BHPV approval before manufacturing, in case of an order.	Vendor to Confirm
20.3	The following documents in English language should be supplied along with the machine: Hard Copies - 3 Sets Vendor to confirm In CD form - 1 Set <ol style="list-style-type: none"> 1. Operating manuals of Machine & its PLC/CNC System 2. Programming manuals of Machine & its PLC/CNC System 3. Maintenance manuals with all drawings of machine assemblies / sub-assemblies with parts list 4. Electrical circuit diagrams with bill of materials 5. Hydraulic circuit diagrams with bill of materials 6. Pneumatic circuit diagrams with bill of materials 7. Maintenance & Interface manuals for Machine Control System 8. Preventive Maintenance check list for Electrical and Mechanical System 9. Manufacturing drawings for all toolings, ordered along with the machine, including Tool Holders, Spindle Mounting details, Adapters etc. 10. Catalogues, O&M manuals for all bought out items used in the machine. 11. Operating Manuals, Maintenance Manuals & Catalogues for all supplied Accessories. 12. Detailed specification of all rubber items / hydraulic / lubrication fittings 13. PLC program print-outs with comments in English 	

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)	
20.3 Contd.	14. PLC program and data on CD & Pen Drive. 15. Complete back up of hard disk on external spare hard disk and clear written Instructions (3 copies) to take back up and reloading of a new hard disk. 16. Complete list of Alarm log, Error code, error messages & remedies and on line fault diagnostics to be provided by the vendor. 17. Complete list of spares for machine, along with item part no / specification / type / model and make & address of the sub-vendor.		
21.0	MACHINE INSPECTION & ACCEPTANCE:		
21.1	AT VENDOR'S WORKS:		
21.1.1	Machine shall be offered for inspection by BHPV engineers at vendor's works	Vendor to confirm	
21.1.2	Trials to demonstrate satisfactory operation of the machine including cutting, end preparation on a few tubes shall be performed. Required tubes for the same shall be in the scope of vendor.	Vendor to confirm	
21.2	AT BHPV WORKS:		
21.2.1	To determine the quality of the edge preparation, several sizes of tubes will be tested for different edge preparation styles. The edge preparation shall be as per the EP styles provided in ANNEXURE-1		
21.2.2	The production rate mentioned in Clause 3.0 shall be proved out by vendor for the tube sizes mentioned therein for one shift in each machine separately.	Vendor to confirm	
22.0	TRAINING:		
22.1	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	
22.2	Vendor to provide training free of cost.	Vendor to Specify	
22.3	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	

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
22.4	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
22.5	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
22.6	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHPV personnel	Vendor to Confirm
23.0	MACHINE FOUNDATION:	
23.1	Vendor shall submit the preliminary layout drawing for getting BHPV's approval within one month from the date of Letter of Intent (LOI). Complete details like static and dynamic loads etc required for foundation design shall be submitted by the Vendor within three months after getting BHPV's approval.	Vendor to confirm
23.2	BHPV shall design and construct complete foundation for the machine as per the Vendor's recommendation	Vendor to confirm
23.3	MACHINE LEVELLING & ANCHORING SYSTEM	
23.3.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, levelling shoes etc should be supplied with the machine.	Vendor to specify

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
24.0	ERECTION & COMMISSIONING	
24.1	Supplier to take full responsibility for Supervision of the erection and for start up, testing and commissioning of machine, its controls and accessories. Supplier shall send suitable qualified Engineers for supervision of Erection and Commissioning of the machine at BHPV works.	Vendor to Confirm
24.2	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.	Vendor to Confirm
24.3	Successful proving of BHPV components by the Vendor shall be considered as part of commissioning. All tests, as mentioned (Machine Acceptance) shall form part of the commissioning activity.	Vendor to Confirm
24.4	Commissioning spares, required for commissioning of the machine shall be supplied free of cost	Vendor to Confirm
24.5	Test Mandrels, Instruments and other necessary equipment including Laser equipment, if required, to carry out all above activities should be brought by the Vendor.	Vendor to confirm
24.6	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 should supply sufficient quantity of touch-up paint of various colours of paint used.	Vendor to Confirm
24.7	General schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to Confirm
24.8	Charges, duration, terms & conditions for supervision of Erection , commissioning should be furnished in detail separately by Vendor along with offer.	Vendor to Confirm
24.9	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

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
24.10	The Vendor shall bring special tools and equipment required for erection of the machine. Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer	Vendor to confirm
25.0	IN-BUILT SAFETY ARRANGEMENTS	
25.1	Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to confirm
25.2	A detailed list of all alarms / indications provided on machine should be submitted by the Vendor.	Vendor to specify
25.3	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
25.4	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
25.5	Machine functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on the display and operator panels) should be available.	Vendor to Confirm
25.6	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations and suitably guarded.	Vendor to Confirm
25.7	Emergency Switches should be provided at suitable locations as per International Norms.	Vendor to Confirm
25.8	All lubricated parts like Bed, guide ways shall have provision for collecting the used Lubrication oil from machine guide ways and preventing them from spilling over on to the ground.	Vendor to Confirm
26.0	THERMAL STABILITY FOR AMBIENT CONDITIONS & ENVIRONMENTAL PERFORMANCE OF THE MACHINE:	
26.1	The machine 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

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
26.2	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
26.3	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
26.4	If any safety / environmental protection enclosure is required it shall be built in the machine by the vendor.	Vendor to confirm
26.5	Paint of the machine should be oil / coolant resistant and should not peel off	Vendor to confirm
26.6	The Machine should conform to following factors related to environment: Maximum noise level shall be 85 dB(A) at normal load condition, 1 meter 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
27.0	PAINTING:	
27.1	Painting of Machine / Electrical Panels: RAL 6011 Apple Green (Polyurethane Paint)	Vendor to Confirm
28.0	GUARANTEE:	
28.1	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
29.0	MACHINE PACKING:	
29.1	Sea worthy & rigid packing for all items of complete machine, PC based PLC / CNC 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

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S. No.	PARTICULARS AND BHPV SPECIFICATION	BIDDER'S OFFER (with complete Technical Details)
30.0	GENERAL:	
30.1	Machine Model No.	Vendor to specify
30.2	Total connected load (KVA):	Vendor to specify
30.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify
30.4	Total weight of the machine	Vendor to specify
30.5	Weight of heaviest part of machine	Vendor to specify
30.6	Dimensions of largest part/ sub-assembly/ assembly of the machine	Vendor to specify
30.7	The general arrangement drawing showing the machine & associated systems with salient dimensions shall be submitted along with the offer. The drawing should be clear and legible	Vendor to provide compulsorily

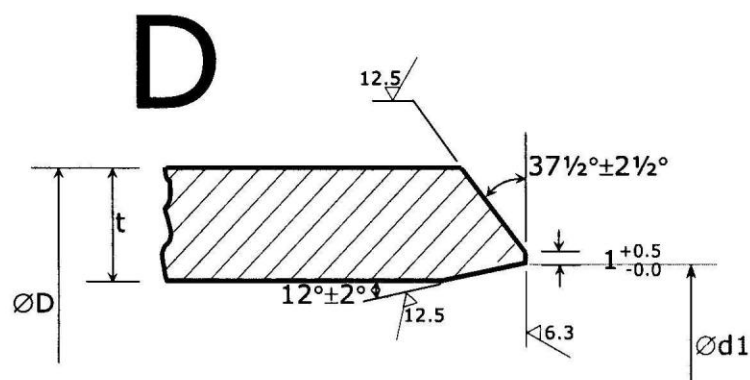
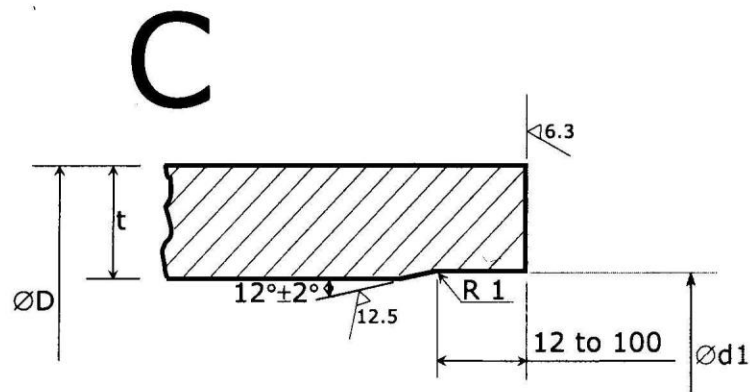
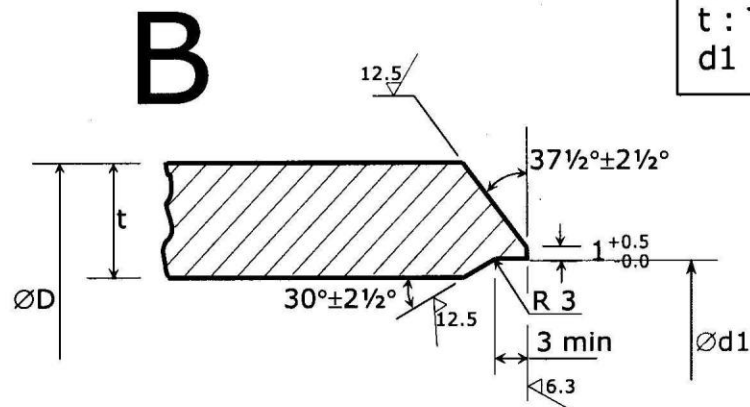
Enclosures:

ANNEXURE - 1: CABS-3-03N-01 and CABS-3-03N-02: Tube Edge Preparation Styles

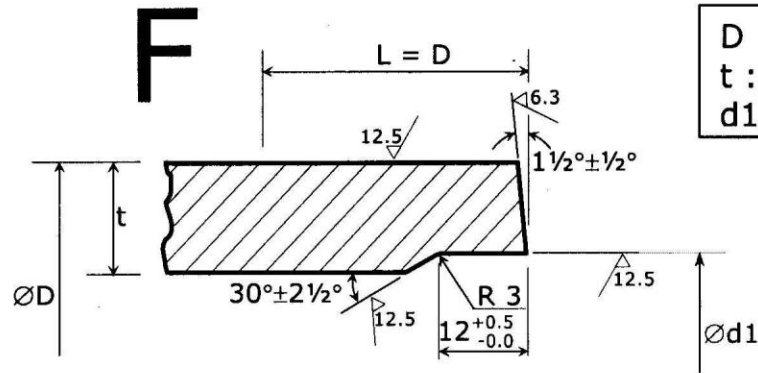
ANNEXURE – 2: CABS-3-03N-03 Universal Tool Holder Drawing

TUBE EDGE PREPARATION DETAILS

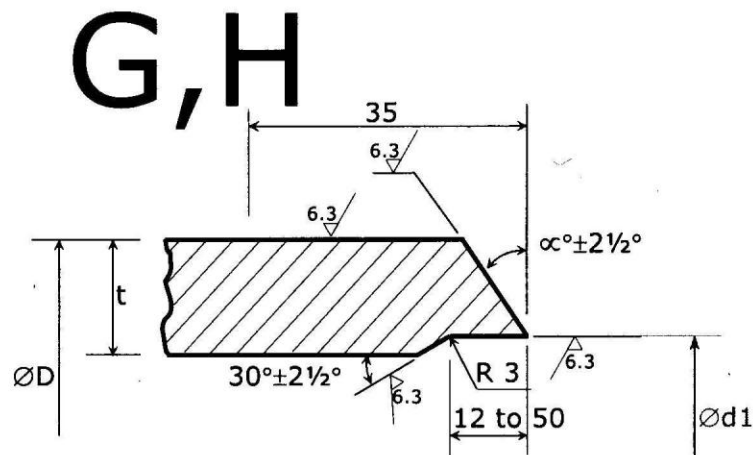
D : Tube OD
t : Tube thickness
d1 : Bore ID



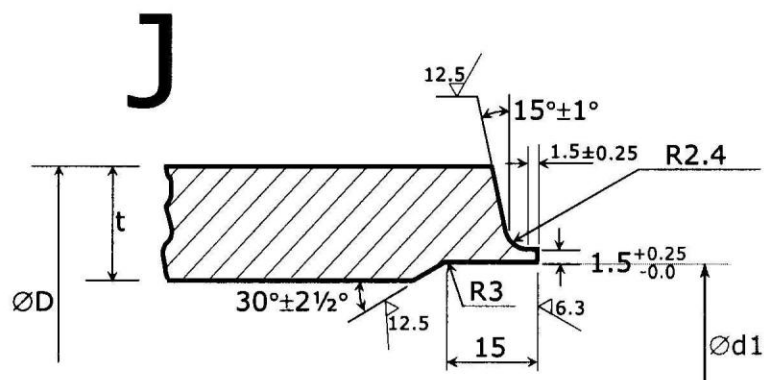
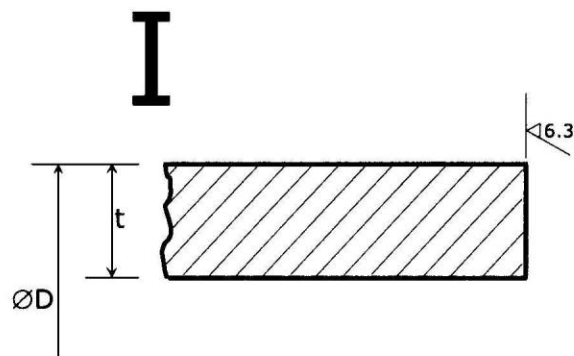
All dimensions are in mm
Drawing No. **CABS-3-03N-01**
BHPV VISAKHAPATNAM



D : Tube OD
 t : Tube thickness
 d1 : Bore ID



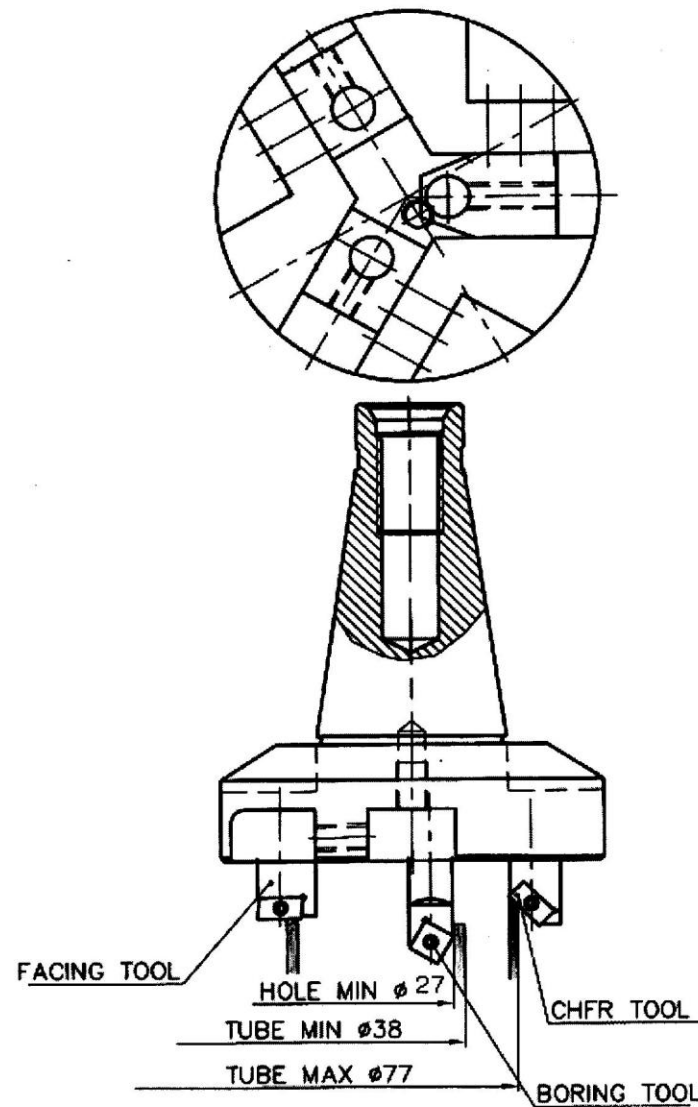
$\alpha = 45^\circ$ for $t \leq 5.6\text{mm}$ - G Style
 $\alpha = 37\frac{1}{2}^\circ$ for $t > 5.6\text{mm}$ - H Style



All dimensions are in mm
 Drawing No. CABS-3-03N-02

BHPV VISAKHAPATNAM

UNIVERSAL TOOL HOLDER



All dimensions are in mm
Drawing No. CABS-3-03N-03
BHPV VISAKHAPATNAM

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.
- 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
- 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 and Freight (To be Included in Vendor's Scope)	
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%).	
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. 5.7.1)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Offers from vendors not accepting to submit CEBG will be rejected)	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 (Offers from vendors not accepting to submit PBG will be rejected)	Yes / No
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 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)	
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 have been quoted on "F.O.R BHPV" basis only.	Yes / No
P & F and Freight	
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)	
Sales Tax (please Specify)	
Excise Tax (please Specify)	
Delivery period from the date of Letter of Intent (please Specify)	
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)	Acceptable / Not acceptable
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 (Offers from vendors not accepting to submit CEBG will be rejected)	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 (Offers from vendors not accepting to submit PBG will be rejected)	Yes / No
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)	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder