

BHARAT HEAVY PLATE & VESSELS LIMITED.,  
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**NOTICE INVITING TENDER( NIT)**

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

**SUB: Design, Manufacture, Supply and  
Commissioning of 2000 T Hydraulic Press**

Our Ref: **MM/2/10/3489/CAP/W-064/5067**

**DATE: 29.06.2013**

Sealed quotations in duplicate are invited from suppliers on **or before 26.07.2013** **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.	Design, Manufacture, Supply and Commissioning of 2000 T Hydraulic Press	1 No 's
	<b>Encl:</b>  <b>1. Qualifying Criteria PART A</b> ..... 3 pages <b>2. Technical Specifications PART B</b> ..... 20 Pages <b>3. Annexure – 1</b> ..... 5 pages <b>4. Annexure – 2</b> ..... 6 pages <b>5. Annexure – 3</b> ..... 2 pages <b>6. Annexure – 4</b> ..... 1 pages <b>7. Annexure – 5</b> ..... 1 pages <b>8. General Terms/ commercial terms and conditions (INCLUDING CHECK LIST)</b> ..... 10 pages	

**For BHARAT HEAVY PLATE & VESSELS LIMITED,**

**For Dy. GENERAL MANAGER (MM)**

## 2000T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART A)

### SECTION – 1: QUALIFYING CRITERIA

The BIDDER / VENDOR has to meet the following to get qualified for submitting an offer for the 2000Ton Press.

[Additional sheets shall be attached with the OFFER, to provide requisite details]

S.NO	REQUIREMENTS	BIDDERS RESPONSE
1.0	“Only those vendors (OEMs), who have supplied and commissioned at least one Hot Forming Press of min 2000T Capacity or above for hot pressing of steel plates of min 6000 X 120 (Length X Thickness) with minimum day light of 4 meters should quote. Application of Press shall be for forming of Dished ends, Petals etc. The vendor should have experience in bending of hot or cold steel plates. The Press should presently be working satisfactorily for more than one Year after commissioning. The following information should be submitted by the vendor about the companies where similar Presses have been supplied.	
2.0	Name of Customer / Company where the Press is installed.	
3.0	Complete Postal Address of the Customer.	
4.0	Year of Commissioning.	
5.0	Parameters of Press(s) supplied (parameters as mentioned in Clause 1.0 above) and application for which the Press is supplied.	
6.0	Name and Designation of the contact person of the Customer.	
7.0	Phone No., FAX No. and e-mail address of the contact person of the Customer.	
8.0	Performance certificate from the customers regarding satisfactory performance of press supplied to them (Original Certificate) for the presses indicated at Cl. No. 1.0. The original performance certificate may be returned after verification by BHPV, if required by vendor.	
9.0	DELIVERY - The bidder shall quote the best possible delivery. However the delivery period shall not exceed <b>10 months</b> 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	

## 2000T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART A)

### SECTION – II: COMPANY PROFILE

S.NO	REQUIREMENTS	BIDDERS RESPONSE
10.0	Number of Years of Experience of the BIDDER / VENDOR in the field of Design, Manufacture, Supply and Commissioning of Large Presses.	
11.0	Number of Hydraulic Presses supplied and installed till date in the following category (Classification based on CAPACITY) with details of customers: a. Above 2000 Tons b. Upto 2000 Tons	
12.0	Details on International Standards or Codes followed in the Design of Presses.	[Elaborate Details are to be compulsorily provided]
13.0	Details of Manufacturing Facilities: a. Fabrication Facilities b. Heat Treatment Facilities c. Heavy Machining Facilities d. Assembly & Load Testing Facilities	
14.0	Details of Quality System (with Stages of Internal Inspection) followed for the Fabrication and Non-Destructive Testing (NDT) of Weldments.	
15.0	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]	

## 2000T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART A)

### SECTION – III: BID / OFFER FORMAT

The BIDDER / VENDOR has to note the following:

<b>S.NO</b>	<b>REQUIREMENTS</b>	<b>BIDDERS RESPONSE</b>
<b>16.0</b>	The BIDDER shall submit the offer in TWO PARTS – Technical [with PART A & PART B] & Commercial and Price Bid.	
<b>17.0</b>	The OFFER shall contain a comparative statement of Technical Specifications given by BHPV and the Offer Details submitted by the Bidder, against each Clause. A just 'YES' or 'CONFIRMED' or 'NO-DEVIATION' or 'COMPILES' or 'ACCEPTED' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
<b>18.0</b>	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of "Bought-Out-Items" with copies of Product Catalogue and Selection Criteria.	
<b>19.0</b>	The Commercial Offer (given with the Technical Offer) shall contain the Scope of supply and the Unpriced part of the Price-Bid, for confirmation of the inclusion of all the accessories, tooling, attachments, auxiliary parts, spares, consumables etc. with the main and basic equipment, to meet the technical specification requirements.	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

**PART B**

Technical specification for 2000 T Hydraulic press.

<b>Note :-</b>			
1. The “Offer” Column and where applicable, the “Deviations” & “Remarks” Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.			
2. The offer and all documents enclosed with offer should be in English language only.			
3. <b>Bidder to visit BHPV to understand the configuration of the existing 1600T press, as BHPV prefers to have the same configuration of press with higher capacity. Pre-bid discussions on the proposed tender shall also be held during the bidder’s visit. Prior appointment is to be obtained by the bidder to fix-up the visit/ prebid meeting.</b>			
<b>SCOPE : SUPPLY, ERECTION &amp; COMMISSIONING OF 2000T HYDRAULIC PRESS FOR PLATE BENDING, LINE PRESSING OF CONICAL SEGMENTS, DISHED ENDS, PETAL CONSTRUCTION (DISHED END PETALS, TORICONE PETALS, DISHED END CROWN &amp; SPHERE PETALS)</b>			
<b>SNO</b>	<b>DESCRIPTION FOR BHPV REQUIREMENT</b>	<b>SPECIFICATIONS</b>	<b>VENDOR’S OFFER [with Technical Details]</b>
<b>1.0</b>	<b>PURPOSE &amp; WORKPIECE MATERIAL</b>		
<b>1.1</b>	This is a four – column vertical Oil hydraulic press with three top and one bottom cylinder and one – side longitudinal feed cylinder for bed longitudinal movement. The middle cylinder or all the three cylinders serves to press plates. While retracting the tool, the outer 2 cylinders serves to hold the plate and the central cylinder retracts, such that the job do not stick to the centre cylinder. The forces in the cylinder are independently adjustable. The press consists of one upper fixed beam, one movable pressing beam, Pressing ram, Tool holding arrangement for Top tool and Bottom tool, movable bed. The press shall have a travelling bed, which shall be able to come out of the press main frame on rails and shall go back to its position after the job is loaded. The press is intended to press dished ends, petals (dished end petals, toricone petals, dished end crown, sphere petals, plate bending, line pressing of conical segments, etc.,). The ram movement to hold at any desired position is preferred with additional two return cylinders located diagonally at ground. Photos of typical existing hydraulic press are enclosed at <b>Annexure-1</b>		
<b>1.2</b>	2000 T Hydraulic Press is to be designed for manufacture of boiler / pressure vessel D’Ends & D’Ends petals (with different volumes and shapes) and performance of various pressing / forging jobs such as punching, forging on die, straightening etc. in manual operational mode.	Vendor to Note & Confirm Suitability of offered press for this purpose	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
1.2 a)	The hydraulic press should be capable for doing the jobs A. Hot & Cold Forming of Hemispherical / Semi-ellipsoidal / Torii spherical dished ends B. Hot & Cold Forming of Petals for Dished Ends, Toricones, Spheres C. Line Pressing of conical shell segments, plate bending. D. Cold forming - After initial hot forming of Tori cone petals & Dished end petals, final dimension correction under cold condition (cold correction) is to be carried out by applying point load.		
1.2.1	<b>A. Hot Pressing / Forming of Hemispherical / Semi-ellipsoidal / Tori spherical dished ends (Sketches – Annexures - 2)</b>		
1.2.1.1	Plate thickness range	25 to 120 mm	
1.2.1.2	Max Width of Plate	4500 mm	
1.2.1.3	Max Length of Plate	6000 mm	
1.2.1.4	Diameter of Torispherical Dished End / Hemispherical Dished end / Ellipsoidal Dished end. Min / Max	500 to 3200 mm (single piece) (Blank size 4250 mm Max.) As per <b>Annexure – 3</b>	
1.2.1.5	Plate material	SA 240 / SA 387 / SA299 Gr.B / SA515 Gr.70 / SA302 Gr C, WB 36, Low alloy steel, Titanium	
1.2.1.6	Temperature of the plate while taking out of furnace	870 to 1100 (deg C)	
1.2.2	<b>Dished ends &amp; Dished ends petals - Cold pressing (Other than cold calibration of Dished ends &amp; Dished ends petals Hot Pressed as in (1.2.1) above)</b>		
1.2.2.1	Plate thickness range	25 to 80 mm	
1.2.2.2	Max Width of plate	3000 mm; As per <b>Annexure – 3</b>	
1.2.2.3	Max Length of plate	6000 mm	
1.2.2.4	Plate material	Carbon Steel / Low alloy steel / Stainless Steel / Cladded steel to a max yield strength of 441 MPa	
	Work piece and Tools weight		
1.2.3	Max. Weight of workpiece	10 Tons	
1.2.4	Max. Weight of Tools	40 Tons (Top tool 20 Tons + Bottom tool 20 Tons)	
1.2.5	Max. Weight to be handled by moving / carrying bed	50 Tons	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR'S OFFER [with Technical Details]
<b>2.0</b>	<b>SPECIFICATION:</b>		
<b>2.1</b>	<b>MACHINE CONFIGURATION:</b>		
<b>2.1.1</b>	As specified at <b>Clause No. 1.1</b>	Vendor to provide details about the arrangement of Top tool / movable beam / pressing ram and Bottom tool to the movable bed. (Please provide write up along with drawing)	
<b>2.2</b>	<b>PRESS:</b>		
<b>2.2.1</b>	Type of Press	Oil Hydraulics Press	
<b>2.2.2</b>	Type of Action	Down stroking	
<b>2.2.3</b>	Type of Construction	Four Column Vertical Traversing	
<b>2.2.4</b>	Total pressing load	2000 Tons	
<b>2.2.5</b>	Essentially comprising of :		
<b>2.2.5.1</b>	Upper beam	Vendor to provide details with write up and drawing	
<b>2.2.5.2</b>	Bottom beam rigidly connected to the foundation with foundation bolts	Vendor to provide details with write up and drawing	
<b>2.2.5.3</b>	Movable beam equipped with clamping arrangement for Top tool	Vendor to provide details with write up and drawing	
	Arrangement of Cylinders		
<b>2.2.5.4</b>	3 main cylinders mounted on the upper beam rigidly. The arrangement of 3 cylinders is as follows: Middle cylinder should have the provision of connecting or disconnecting with movable pressing beam. Two cylinders positioned on either side of the middle cylinder are to be connected to the movable pressing beam.	Vendor to Confirm and provide details with write up and drawing	
<b>2.2.5.5</b>	Moving beam should be held at any desired height with the help of additional return cylinders provided at ground level diagonally in plan	Vendor to Confirm and provide details with write up and drawing	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR'S OFFER [with Technical Details]
2.2.5.6	Auto locking for connecting and disconnecting movable beam with middle cylinder.	Vendor to Confirm and provide details with write up and drawing	
2.2.5.7	Hydraulic Ejector for manipulation (tool / Job / for adjustment of tool positioning) and pressing. (Located at centre of Press axis at the bottom most)	Vendor to provide details with write up and drawing	
2.2.5.8	Movable bed on which the work piece / bottom tool is loaded	Vendor to Confirm and provide details with write up and drawing	
2.2.5.9	Bed movement mechanism – Stroke length - 5 meters	Vendor to provide details and type of mechanism with write up and drawing	
2.2.6	Max Pressing Load	2000 Tons	
2.2.7	Max Working force of centre cylinder	1400 Tons	
2.2.8	Max Working force of two side cylinders	Each 300 Tons	
2.2.9	Max Working force of bottom cylinder / Ejector	400 Tons	
2.2.10	Working force of return movement of centre cylinder	300 Tons	
2.2.11	Working force of return movement of bottom cylinder / ejector	150 Tons	
2.2.12	Daylight	4300 mm	
2.2.13	Stroke of press	3600 mm	
2.2.14	Stroke of Center cylinder	3600 mm	
2.2.15	Stroke of bottom cylinder / ejector	600 mm	
2.2.16	Speed of no – load movement (movable beam) (Infinitely variable)	0 – 200 mm/sec	
2.2.17	Locking arrangement for holding the cross beam at required height, for adjusting the top tool (During fixing of top tool and centering the component by man power – operational safety requirement)	Vendor to specify the feature provided.	
2.2.18	For making dished ends we require two side cylinders with 300T each acting downward and middle cylinder moving upward with 270 T to detach the formed dished end from top tool.	Vendor to Confirm and provide details	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR'S OFFER [with Technical Details]
2.2.19	Pressing speed (Infinitely variable)	0 – 30 mm / sec for 1400T single centre cylinder pressing operation 0 – 22 mm / sec for 2000T with all cylinders in tandem operation	
2.2.20	Return speed (Infinitely variable)	0 – 100 mm / sec	
2.2.21	Rate of table feed of press with 50 T Load	0 – 200 mm / sec	
2.2.22	Clamping surface of moving beam (Typical T slots arrangement shall be as indicated in <b>Annexure-4</b> , such that existing dies can be used)	5000 mm (Vendor to Confirm)	
2.2.23	Clamping surface of plate of centre cylinder Diameter	1500 mm (Vendor to Confirm)	
2.2.24	Clamping surface of plate of bottom cylinder Diameter	Min 600 mm (Vendor to Specify)	
2.2.25	Clamping surface of moving bed to press (Typical loading / working conditions of a press is enclosed at <b>Annexure – 2</b> for reference) (Typical T slots arrangement shall be as indicated in <b>Annexure-5</b> , such that existing dies can be used)	5000 x 5000 mm	
2.2.26	Centre to center distance of columns	Vendor to Specify	
2.2.27	Clear width between stops of columns	Vendor to Specify	
2.2.28	Minimum surface area on which concentrated load can be applied. (not exceeding 0.25 m <sup>2</sup> )	Vendor to Specify	
2.2.29	The press ram shall be guided on the columns throughout its stroke	Vendor to Confirm and provide details with write up and drawing	
2.2.30	Suitable mechanical (electrically operated / electro -hydraulically operated) locking arrangement should be provided to lock the ram in its top position when not in use	Vendor to Confirm and provide details with write up and drawing	
2.2.31	<b>Eccentric Loading:</b>		
2.2.31.1	<b>Eccentric loading in longitudinal axis</b> (Refer Annexure-2)		
	a) At 1 m distance from center – 600 MT	Vendor to confirm	
	b) At 2 m distance from center – 300 MT	Vendor to confirm	
2.2.32	<b>Dimension of press</b>		
2.2.32.1	Overall Press Width	Vendor to specify	
2.2.32.2	Overall Press Length	Vendor to specify	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

<b>SNO</b>	<b>DESCRIPTION FOR BHPV REQUIREMENT</b>	<b>SPECIFICATIONS</b>	<b>VENDOR'S OFFER</b> [with Technical Details]
2.2.32.3	Height of press above the floor (Max. height of machine shall not exceed 12 M above floor)	Vendor to specify	
2.2.32.4	Depth of press below the floor	Vendor to specify	
2.2.32.5	Press overall height	Vendor to specify	
2.2.32.6	Weight of press with standard equipment	Vendor to specify	
2.2.33	One centralized lubrication system to lubricate different areas of Press completely	Vendor to furnish complete details with sketch	
<b>2.3</b>	<b>EJECTOR:</b>		
2.3.1	Ejector location – centre of press axis at the bottom most	Vendor to Specify	
2.3.2	Ejector Force 400 Tons	Vendor to confirm	
2.3.3	Ejector Stroke 600 mm	Vendor to confirm	
2.3.4	Ejector Speed (mm/min)	Vendor to Specify	
2.3.5	Mechanism for control of Ejector Speed	Vendor to furnish details	
2.3.6	Operating Pressure (Kg / Sq.cm)	Vendor to Specify	
2.3.7	Cylinder Size	Vendor to Specify	
2.3.8	Material of construction of Cylinder	Vendor to Specify	
2.3.9	Suitable interlocks for Ejector Operation (list of interlocks to be given in the offer)	Vendor to Specify	
<b>2.4</b>	<b>JOB TRANSPORTING SYSTEM:</b>		
2.4.1	The job will be loaded outside the 4 columns of the press using existing overhead crane. The table along with the bottom tool are movable. The job is loaded by means of an EOT crane on to the bottom tool, when the bottom tool with table is outside the press. Then the job along with table & bottom tool goes into the press (4 columns) and shall get locked in position.	Vendor to Furnish Details of the arrangement with write up and drawings	
2.4.2	It should be possible to position the table at any position with suitable locking system.	Vendor to confirm	
2.4.3	Length & width of moving table	Vendor to Specify	
2.4.4	Weight carrying capacity of the table	Vendor to Specify	
2.4.5	Type of drive arrangement for the movement of table	Vendor to Specify	
2.4.6	Power rating of drive	Vendor to Specify	
2.4.7	Speed of moving table 0 – 200 mm / sec	Vendor to confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR'S OFFER [with Technical Details]
2.4.8	Top surface of the moving table should be provided with T-slots. Number and size of T-Slots should be furnished	Vendor to furnish details	
<b>2.5 TOOLING:</b>			
2.5.1	Method by which the formed dished end can be easily detached from tool	Vendor to Furnish Details	
2.5.2	Provision for mounting the tools and locking in position through T slots so that the tools for dished ends & dished ends petals pressing can be changed as required with least effort and time.	Vendor to Furnish Details	
2.5.3	Top surface of bottom table shall be at floor level	Vendor to Confirm	
2.5.4	Method of prevention of ingress of scales from hot plate into various parts of the tools / press	Vendor to furnish details	
<b>2.6 MEASURING &amp; INDICATING SYSTEMS:</b>			
2.6.1	Suitable electronic measuring (digital) devices and indicating devices for set and actual values shall be provided in the press to measure the following:	Vendor to Confirm	
a)	Pressing Force	Vendor to furnish	
b)	Pressing pressure with limit settings	Vendor to furnish	
c)	Other measurements as may be required	Vendor to furnish List	
2.6.2	Description of the measurement, and details of measuring & indicating devices should be furnished with the offer	Vendor to furnish	
<b>2.7. CONSTRUCTION:</b>			
2.7.1	Vendor to furnish details of material, hardness & constructional details, including explanatory drawings, of various components / assemblies of the press.	Vendor to Furnish	
2.7.2	Video images on CD / hard copy explaining the technical features with photographs, drawings explaining the technical features should be enclosed with the offer.	Vendor to Furnish	
2.7.3	Special features including special maintenance aids, if any	Vendor to Furnish	
<b>2.8 MAINTENANCE PLATFORM:</b>			
2.8.1	Suitable platforms, walkways and ladders shall be provided at various heights and around the press for carrying out maintenance on cylinders, valves, pipelines etc of the press.	Vendor to Furnish Details	
2.8.2	Grill type platforms and walkways shall be provided	Vendor to Confirm	
2.8.3	Ladders shall be provided with safety cage	Vendor to Confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
<b>2.9</b>	<b>OPERATION AND CONTROL SYSTEM: OPERATOR'S PANEL:</b>		
<b>2.9.1</b>	Desk type operator's panel having complete MMI and machine control system with display shall be provided. All switches on the Operator's panel should be within easy reach of operator for convenient, efficient & safe operation. All displays/indications should also be conveniently placed accordingly. Layout showing complete details of the control desk should be submitted.	Vendor to provide details	
<b>2.9.2</b>	Suitable transparent heat shield shall be provided for the operator at the control desk	Vendor to provide details	
<b>2.9.3</b>	The main operator panel shall be provided with suitable dust-proof covers to protect the switches, displays etc from dust when not used.	Vendor to provide details	
<b>2.9.4</b>	Panel shall be provided to give a display of the operating status of important hydraulic and mechanical elements of the press on a diagram	Vendor to provide details	
<b>2.9.5</b>	Press should be able to operate in Setting / Manual	Vendor to provide details	
<b>2.9.6</b>	In setting mode the press and accessories should operate at its lowest speed for job setting and maintenance purpose	Vendor to provide details	
<b>2.9.7</b>	Joystick Type controls with provision to control operation and to adjust speed based on joystick position should be provided for the following operations in the Main and Auxiliary Desks: a) Control of Ram for Pressing & Return b) Ejector	Vendor to provide details	
<b>2.10</b>	<b>PLC SYSTEM &amp; FEATURES :</b>		
<b>2.10.1</b>	Make : Siemens / Allen Bradley / Messung / Melsec (Mitsubishi) or equivalent make acceptable to BHPV.	Vendor to specify	
<b>2.10.2</b>	Model	Vendor to specify	
<b>2.10.3</b>	Details of Standard features. List to be submitted.	Vendor to Furnish	
<b>2.10.4</b>	Standard accessories, like PLC Programming Unit etc, required for monitoring, control and maintenance should be supplied	Vendor to Furnish List & Details	
<b>2.10.5</b>	Provision for automatic safe shut down of Press in case of Power Failure	Vendor to Furnish Details & write up	
<b>2.10.6</b>	Graphic simulations of the operation of the press are to be displayed on the screen.	Vendor to confirm	
<b>2.11</b>	<b>AIR CONDITIONERS:</b>		

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
2.11.1	Air Conditioners with Dehumidifiers of suitable / sufficient capacity to be provided for all Electrical / Electronic Panels / Cabinets including Operator's Panel considering specified ambient conditions. Detailed specifications of the same are to be submitted.	Vendor to Confirm	
2.12	<b>HYDRAULIC SYSTEM : Details should be Submitted by the Vendor</b>		
2.12.1	The System should be centralised. Hydraulic Tank shall be suitably located so as to provide positive suction head.	Vendor to Furnish Details & write up	
2.12.2	Pumps, valves, accessories etc shall preferably be of Rexroth / Vickers Sperry. (Details to be submitted). The seals used in cylinders shall be of Merkel / Parker / Bushak + Shamban / Hunger / Simrit make.	Vendor to Furnish Details	
2.12.3	Suitable filtration system should be supplied for Servo Oil and other system oil.	Vendor to Furnish Details	
2.12.4	Duplex filters with changeover facility should be used	Vendor to confirm	
2.12.5	Failure indication for oil level, temperature, pressure, filter clogging should be provided	Vendor to Confirm	
2.12.6	Refrigerated type cooling system of sufficient capacity to maintain complete Hydraulic System, including servo oil etc. at a temperature not exceeding 50 deg C irrespective of the ambient conditions. Complete details should be submitted with the offer.	Vendor to Furnish Details	
2.12.7	Servo valves, if any, should be mounted close to their actuators	Vendor to confirm	
2.12.8	Accessories, pyrometer to be added (For measuring temperature)	Vendor to confirm and furnish details	
2.12.9	It should be possible to replace rod seals without dismantling the cylinders	Vendor to Confirm	
2.12.10	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 confirm	
2.12.11	Reservoir capacity (liters): (vendor to include supply of first fill hydraulic oil along with machine) For Servo System Oil, if any For Other System Oil. Bidder to specify the Indian equivalent.	Vendor to specify	
2.12.12	All oil pipelines shall be of seamless steel.	Vendor to confirm	
2.12.13	Pipelines should undergo pickling process	Vendor to confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
2.12.14	Pressure measuring minimess check points (preferably with ¼" BSP stud end) shall be provided for important pressure measurements from operation, trouble shooting and maintenance point of view. Two sets of handheld minimess pressure gauge of suitable range with minimess hose (1.0 to 1.5m length) also has to be supplied along with the power pack.	Vendor to confirm	
2.12.15	Following details are to be furnished by the vendor: <ul style="list-style-type: none"> <li>a. Type of pump</li> <li>b. Drives details</li> <li>c. Power rating of each pump</li> <li>d. No. of Pumps</li> <li>e. Max. Flow of each pump</li> <li>f. Pressure rating of all pumps</li> <li>g. Max. power consumption at full load operation with break-up.</li> <li>h. List of accessories.</li> </ul> These can be approximate values and final values can depend on detailed design	Vendor to Furnish Details	
2.12.16	Sizes, material of construction of all cylinders used in the press should be furnished in the offer	Vendor to Furnish Details	
2.12.17	Overloading of pumps should not occur. Vendor to furnish details of measures adopted for the same	Vendor to Furnish Details	
2.12.18	The hydraulic power pack shall be provided with minimum number of pipes / pipe joints and as far as possible usage of manifolds / stacked valves construction is preferred.	Vendor to Confirm	
2.12.19	Suitable stand-by pump unit, filter unit, etc shall be provided for critical areas	Vendor to Furnish Details	
2.12.20	The Power pack should be designed taking into account the energy efficiency (Hi-low pump system, proper unloading during idling, etc.).	Vendor to confirm and furnish details	
2.12.21	All the pipe / hose fittings shall be of standard weld nipple with O-ring seating type (DIN 3865 or equivalent) and no ferrule joints are to be used in the hydraulic system. All threaded connections shall be of metric sizes	Vendor to Confirm	
2.12.22	Suitable vibro-mounts, compensators (flexible bellows), flexible hose at the pump outlet, polypropylene pipe & hose clamps, etc are to be provided to minimize the vibration induced and transmitted to the hydraulic joints.	Vendor to Confirm	
2.12.23	The oil to be used shall be of standard ISO Viscosity Grades – 32 / 46 / 68	Vendor to Specify	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
2.12.24	The maximum pressure of the system should preferably not to exceed 310 bar	Vendor to Specify	
2.12.25	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	
2.12.26	The pipelines to be painted with standard colours as per the colour coding accepted internationally for hydraulic systems.	Vendor to Furnish Details	
<b>2.13</b>	<b>ELECTRICAL SYSTEM :</b>		
2.13.1	415V (fluctuation + 10% / -10%), 50HZ (fluctuation +/-3 HZ), 3 Phase AC (3 wire system with out neutral) Power Supply Source will be provided by BHPV at a single point near the machine, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHPV's power supply point to different parts of the machine/control cabinets, shall be the responsibility of vendor. Requirement of grounding / earthing with details of required material is to be informed by vendor well in advance so that same could be incorporated during construction of foundation	Vendor to Confirm	
2.13.2	<b>Tropicalisation:</b> All electrical / electronic equipment shall be tropicalized	Vendor to Confirm	
2.13.3	All electrical & electronic control cabinets & panels should be dust and vermin proof	Vendor to Confirm	
2.13.4	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to Confirm	
2.13.5	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	
2.13.6	Motors shall conform to IEC or Indian Standards. Make of motor should be furnished by vendor in the offer	Vendor to furnish	
2.13.7	Motors shall be Energy Efficient type	Vendor to Confirm	
2.13.8	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	
2.13.9	All cables shall be with multi strand copper conductors	Vendor to Confirm	
2.13.10	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to Confirm	
2.13.11	In-cycle hour counter with reset facility is to be included in the offer.	Vendor to Confirm	
2.14	<b>SAFETY ARRANGEMENTS: Following safety features in addition to other standard safety features should be provided on the machine:</b>	Vendor to Confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
2.14.1	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the machine, workpiece and the operator due to the malfunctioning or mistakes. Machine functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on display and panels) should be available.	Vendor to Confirm and furnish details. List of interlocks to be furnished	
2.14.2	A detailed list of all alarms / indications provided on machine should be submitted by the supplier.	Vendor to furnish details.	
2.14.3	All the pipes, cables etc. on the machine should be well supported and protected.	Vendor to Confirm	
2.14.4	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations.	Vendor to Confirm	
2.14.5	Rotating couplings shall be provided with suitable guards	Vendor to Confirm	
2.14.6	Emergency Switches at suitable locations as per International Norms are to be provided.	Vendor to Confirm	
2.14.7	Oil & water pipe lines should not run with electrical cable in the same tray / trench.	Vendor to Confirm	
2.14.8	Failure of any control should not result in a hazardous situation (Fail Safe mode)	Vendor to Confirm	
2.14.9	Interlocks should be provided to ensure that the press / table movement system shall operate in safely designed sequence and no malfunction / safety hazard should result due to accidental operation of a switch or control.	Vendor to Confirm	
2.14.10	Safety arrangements to be followed during maintenance of the press and its accessories should be clearly defined	Vendor to furnish details	
2.14.11	Suitable provision should be made to prevent dropping down of the ram in case of failure of oil pressure in any of the return cylinders or failure of power supply	Vendor to furnish details with write up	
2.14.12	Fail safe features to be built-in to protect the press and operating personnel from any hazard in the event of failure of hydraulic oil pressure or electric power supply	Vendor to furnish details	
2.14.13	Manually operated shut-off valves and other valves important for safe operation of the press and its accessories should be provided with suitable sensors to signal their status for safe control of operation & operating sequence	Vendor to Confirm	
2.14.14	The ram should descend only when the job is located in one of the selected position in normal pressing mode. However, in setting mode, it should be possible to operate the ram at slow speed, irrespective of the job position.	Vendor to Confirm	
2.14.15	The ejector should remain in the home position and become nonfunctional during the shell forming operation.	Vendor to Confirm	
2.14.16	Safety Lights at both ends of moving job loading system (preferably Flashing during travel).	Vendor to furnish details	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR'S OFFER [with Technical Details]
<b>2.15</b>	<b>ENVIRONMENTAL PERFORMANCE OF THE MACHINE :</b> The Machine shall conform to following factors related to environment:		
<b>2.15.1</b>	Maximum noise level shall be 85 dB(A) at the control desk at normal load condition, 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 so required.	Vendor to confirm and furnish details	
<b>2.15.2</b>	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm and furnish details	
<b>2.15.3</b>	Paint of the machine should be oil resistant and should not peel off and mix up with oil.	Vendor to confirm and furnish details	
<b>3.0</b>	<b>SERVO VOLTAGE STABILIZER:</b>		
<b>3.1</b>	Indian make <b>Air</b> Cooled servo Controlled Voltage Stabilizer with no undesirable Harmonics in the stabiliser output, should be suitable for the control system shall be supplied.	Vendor to confirm	
<b>3.2</b>	Make (Neel/Servo makes are acceptable)	Vendor to Specify	
<b>3.3</b>	Model & Rating	Vendor to Specify	
<b>3.4</b>	Catalogue of the Voltage Stabiliser shall be submitted with the offer.	Vendor to Specify	
<b>4.0</b>	<b>ULTRA ISOLATION TRANSFORMER</b>		
<b>4.1</b>	Indian make Ultra Isolation Transformer shall be supplied suitable for the controls	Vendor to confirm	
<b>4.2</b>	Make (Neel/Servo makes are acceptable)	Vendor to Specify	
<b>4.3</b>	Model and Rating	Vendor to Specify	
<b>4.4</b>	Catalogue of the Ultra Isolation Transformer shall be submitted with the offer.	Vendor to Specify	
<b>5.0</b>	<b>PNEUMATIC SYSTEM:</b>		
<b>5.1</b>	Details of Pneumatic system, if any, should be furnished.	Vendor to furnish details	
<b>5.2</b>	The system shall be suitable for operation on BHPV compressed air supply having pressure of max 5 bar	Vendor to Confirm	
<b>5.3</b>	Refrigerated type Dryer & Filter of suitable capacity for the total compressed air requirements of the machine & accessories and to suit required air quality should be supplied. Vendor to specify if required.	Vendor to furnish details	
<b>5.4</b>	Make & Model of Refrigerator type Dryer.	Vendor to Specify	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
5.5	Quantity of air required (cfm)	Vendor to Specify	
5.6	Pnuematic elements shall be of reputed makes like Festo, Parker etc	Vendor to Specify	
6.0	<b>DIAGNOSTIC SYSTEM:</b>		
6.1	<b>FAULT DIAGNOSTIC SYSTEM:</b>		
6.1.1	Supplier's own diagnostic system with required hardware and software should be supplied and installed. This should include customised auto-diagnostic system with supporting hardware and software which shows detailed cause and remedy for the fault on the display with full graphic diagnostic help for faults related to mechanical and electrical systems.	Vendor to Furnish details	
6.2	Help guide should be provided to use both diagnostic systems	Vendor to confirm	
7.0	<b>LEVELING &amp; ANCHORING SYSTEM</b>		
7.1	Complete anchoring system including foundation bolts, anchoring materials, fixators, leveling shoes etc shall be supplied for the press	Vendor to confirm	
8.0	<b>TOOLS FOR ERECTION, OPERATION &amp; MAINTENANCE :</b>		
8.1	Special tools and equipment required for erection of the machine shall be brought by the vendor. 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 Furnish	
8.2	Tie rod pre-tensioning device with its hydraulic power pack should be supplied along with the machine	Vendor to confirm	
9.0	<b>SPARES:</b>		
9.1	Itemised breakup of mechanical, hydraulic, electrical and electronic spares used on the machine and accessories in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. The list to include following, in addition to other recommended spares: <b>(Unit Price of each item of spare should be offered)</b>	Vendor to provide List	
	<b>a) Mechanical &amp; Hydraulic Spares:</b> All types of pumps, Valves, pressure switches / transducers, filters, seals, hoses etc	Vendor to provide List	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
	<b>b) Electrical /Electronic / PLC Spares:</b> All types of Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Encoders, Operator's panel with Display Unit, I/O Cards for PLC, CPU card, Control cards for servo valves etc.	Vendor to provide List	
9.2	All types of spares for total machine and accessories should be available for atleast ten years after supply of the machine. If machine parts 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 provide List	
9.3	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine	Vendor to provide List	
10.0	<b>DOCUMENTATION :</b>		
10.1	<b>TO BE SUPPLIED ALONG WITH MACHINE:</b> <b>Five sets of following documents (Hard copies) in English language should be supplied along with the machine</b>	Vendor to confirm	
10.1.1	Operating manuals of Machine & PLC system		
10.1.2	Programming Manuals of Machine & PLC system		
10.1.3	Detailed Maintenance manual of machine with all drawings of machine assemblies / sub-assemblies / parts including Electrical / Pneumatic / Hydraulic circuit diagrams. All Assembly / Sub Assembly Drawings shall be supplied with the part list also		
10.1.4	Maintenance, Interface & commissioning manuals for PLC system.		
10.1.5	Manufacturing drawings for all supplied maintenance / wearing accessories, pressing tool support fixtures etc.		
10.1.6	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.		
10.1.7	Detailed specification of all rubber items and hydraulic / lube fitting		
10.1.8	Operating Manuals, Maintenance Manuals & Catalogues for supplied Voltage Stabilizer, Isolation Transformer, and supplied Accessories.		
10.1.9	PLC program print-outs with comments in English.		
10.1.10	PLC program & PLC data on CD.		
10.1.11	Complete back-up of PLC program and clear written Instructions (3 copies) to take back-up and for reloading the program.		

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
10.1.12	Complete Master List of parts used in the machine shall be submitted by the vendor.		
10.1.13	One additional set of all the above documentation on CD ROM, wherever possible.		
10.2	<b>DOCUMENTS TO BE FURNISHED ALONG WITH OFFER:</b> Two sets of following documents (Hard copies) in English language should be supplied along with the technical offer:	Vendor to Furnish	
10.2.1	General Arrangement drawing of the Press		
10.2.2	Tooling Arrangements. The existing T slots in the bottom table & Top tool holder are to be provided as indicated in <b>Annexure 4 &amp; 5</b> respectively		
10.2.3	Hydraulic Line Diagram and explanation of the hydraulic system		
10.2.4	Operating Sequence- Pictorial & descriptive explanation of various stages involved in hot pressing of a Hemispherical / Semi-ellipsoidal Dished End and cold pressing		
10.2.5	Electrical Schematic Diagram and explanation of the electric / electronic system		
10.2.6	Operator Controls and Operator Desk Schematic		
10.2.7	Functional description of the various subsystems of the press, accessories and tooling with sketches where possible.		
10.2.8	Description of the diagnostic systems offered		
10.2.9	Other details as requested against respective clauses of this specification		
10.3	Vendor to confirm that Drawing of General Arrangement / Systems requiring BHPV approval shall be submitted in the event of an order. These drawings shall be mutually agreed to during technical discussions	Vendor to confirm	
11.0	<b>TRAINING:</b>		
11.1	BHPV Persons should be trained at supplier's Works for mutually agreed period in the area of (a) Maintenance of Electrical & Electronic Controls, including PLC (b) Maintenance of Mechanical & Hydraulic Systems (c) Operation & Safety	Vendor to confirm	
11.2	Air-fare, boarding & lodging for the trainees shall be borne by BHPV.	Vendor to confirm	
11.3	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHPV personnel.	Vendor to confirm	
11.4	Vendor to quote for training on man day basis	Vendor to confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
<b>12.0</b>	<b>FOUNDATION:</b>		
<b>12.1</b>	Vendor shall submit the preliminary layout drawing for getting BHPV's approval within one month from the date of Letter of Intent (LOI).The Layout should consist of all requirements pertaining to complete the press machine and all accessories, including space requirement for Voltage Stabilizer, Isolation Transformer, & any other accessory. Soil condition data will be furnished by BHPV along with the approval. Complete Foundation Design including details, like Static / Dynamic load details etc. and final Layout Drawings shall be submitted by the supplier within three months after getting BHPV's approval for the preliminary layout. BHPV shall construct complete foundation for the machine. Vendor should arrange equipment required for the testing of foundation, if required by the vendor. The vendor shall also indicate detailed specifications of grouting compound and grouting procedure etc. for foundation bolts of the machine	Vendor to confirm and furnish details	
<b>13.0</b>	<b>ERECTION &amp; COMMISSIONING</b>		
<b>13.1</b>	Supplier shall be responsible for carrying out the erection, start up, testing and commissioning of the press. Required technical personnel and labour required for the same shall be provided by the vendor. Tools, tackles, mobile cranes / lifting derricks etc shall also be arranged for by the vendor. Service requirement like power, air & water shall be provided by BHPV at only one point indicated by supplier in their foundation / layout drawings.	Vendor to confirm	
<b>13.2</b>	Erection & Commissioning of Voltage stabilizer, Isolation Transformer shall also be responsibility of the vendor.	Vendor to confirm	
<b>13.3</b>	Successful proving of BHPV components by the supplier shall be considered as part of commissioning. All tests, as mentioned at clause 18 (Machine Acceptance) shall form part of the commissioning activity.	Vendor to confirm	
<b>13.4</b>	Testing equipment required for checking the geometrical accuracies of the press shall be arranged for by the vendor	Vendor to confirm	
<b>13.5</b>	Spares required during commissioning should be supplied free of cost	Vendor to confirm	
<b>13.6</b>	All Cover Plates required for the machine and its peripherals including pits, if any, shall be supplied and installed by the vendor.	Vendor to confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
13.7	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	
13.8	Duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer. Charges for the same should be indicated in the price bid	Vendor to furnish	
13.9	Schedule of Erection and Commissioning shall be submitted along with offer	Vendor to confirm	
14.0	<b>ACCURACY TESTS:</b>		
14.1	<b>GEOMETRICAL ACCURACIES :</b>		
14.1.1	Geometrical Accuracy Tests shall be in accordance with relevant standard. Detailed Test Charts for the same, clearly showing the accuracies to be achieved on the machine, shall also be submitted with the offer.	Vendor to Furnish	
14.1.2	Above accuracies to be demonstrated to BHPV engineers during Commissioning at BHPV Works.	Vendor to confirm	
15.0	<b>OPERATING CONDITIONS :</b>		
15.1	Total machine including PLC system and all supplied items should work trouble free and efficiently under following operating conditions and should give specified accuracies. Power Supply: Voltage: 415 V (with likely fluctuation of - 10%, +10% ) Frequency: 50 Hz (with likely fluctuation of +3%, - 3%) No. of phases = 3 (3-Wire System with earth but no neutral wire) Ambient Conditions: Temperature 45 degree celsius Relative Humidity = 93% max.	Vendor to Confirm	
15.2	Weather conditions are tropical, Atmosphere may be dust laden during some part of the year. Machine shall be kept in the normal shop floor condition. Max. ambient temperature variation is up to 25 deg Celsius in 24 hours.	Vendor to confirm	
16.0	<b>PROVEOUT OF BHPV COMPONENTS :</b>		

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
16.1	Vendor to carry out pressing of two dished ends (both hot bending and cold calibration) and two dished ends, of any size within the specification, at BHPV works. Material for the prove-out components shall be provided by BHPV. Vendor shall be fully responsible for prove-out components.	Vendor to furnish	
<b>17.0</b>	<b>MACHINE ACCEPTANCE: (Tests/Activities to be performed by Vendor)</b>	Should be accepted & confirmed by Vendor	
<b>17.1</b>	<b>Tests/Activities to be carried out at supplier's works in the presence of BHPV Engineers before dispatch :</b>		
17.1.1	Physical Inspection of all components of the press & accessories	Vendor to Confirm	
17.1.2	Welding test certificates	Vendor to Confirm	
17.1.3	Test certificates for pumps and motors	Vendor to Confirm	
17.1.4	Graphic Simulation of entire hydraulic circuit	Vendor to Confirm	
17.1.5	Graphic simulation of press Operation Sequence	Vendor to Confirm	
17.1.6	Graphic simulation of bending of shell complete with operation of job transport system	Vendor to Confirm	
<b>17.2</b>	<b>Test / Activities to be carried out at BHPV works while commissioning the machine :</b>		
17.2.1	Demonstration of all features of the machine	Vendor to Confirm	
17.2.2	Continuous running for a shift of 8-hours to observe for any abnormal temperature rise, abnormal operation	Vendor to Confirm	
17.2.3	Job prove out.	Vendor to Confirm	
17.2.4	Training of BHPV operation and maintenance personnel by the supplier's experts / engineers during their stay at BHPV works for a period of two weeks after handing over of machine and after commissioning	Vendor to Confirm	
<b>18.0</b>	<b>PACKING:</b>		
18.1	Sea worthy & rigid packing for all items of complete machine, PLC System, all Accessories and other supplied items to avoid any damage / loss in transit. When machine is despatched in containers, all small loose items shall be suitably packed in boxes	Vendor to confirm	
<b>19.0</b>	<b>GUARANTEE :</b>		
19.1	12 months from the date of commissioning and acceptance of the machine.	Vendor to confirm	

**2000 T HYDRAULIC PRESS QUALIFICATION CRITERIA (PART B)**

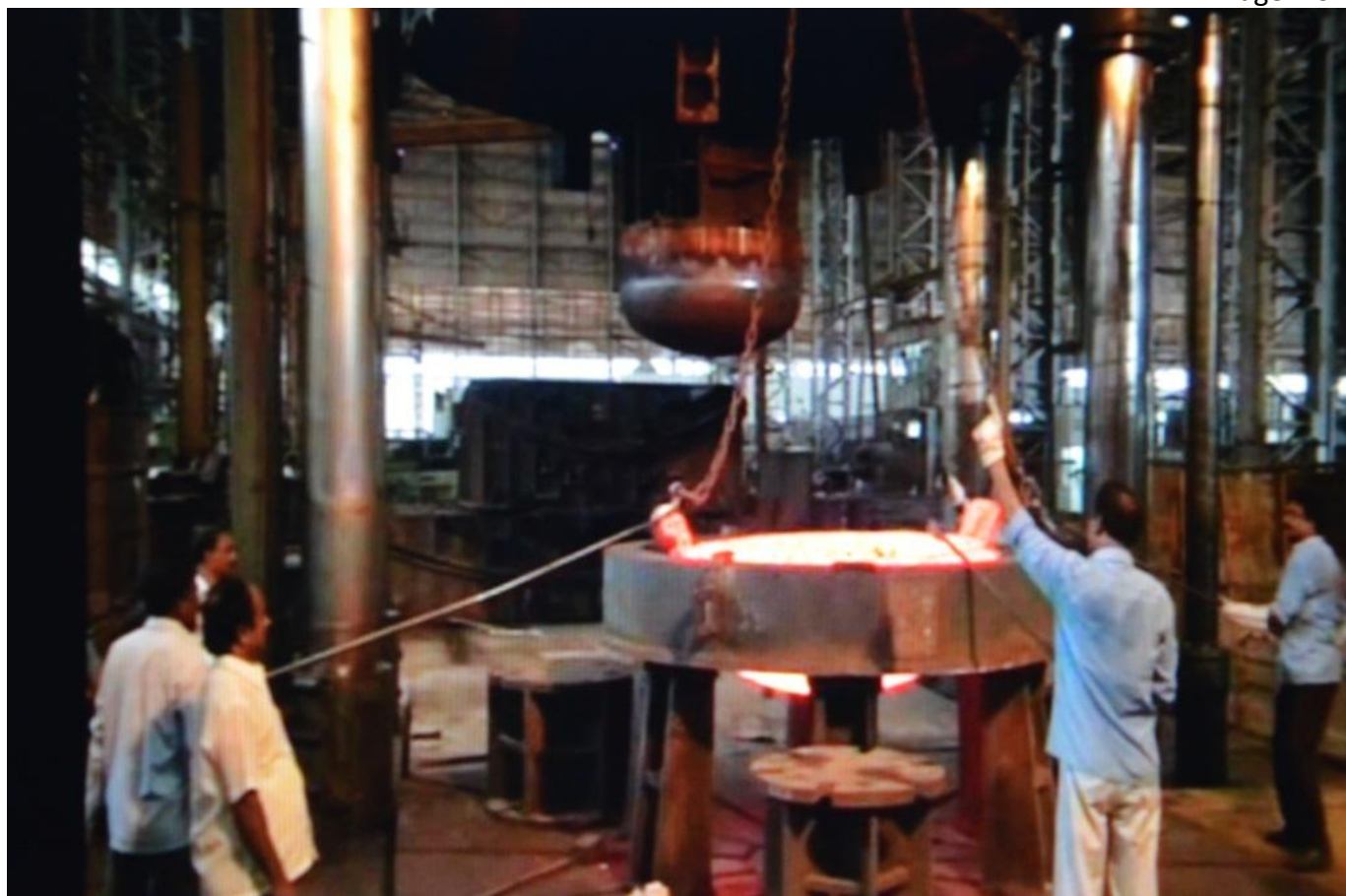
SNO	DESCRIPTION FOR BHPV REQUIREMENT	SPECIFICATIONS	VENDOR's OFFER [with Technical Details]
<b>20.0</b>	<b>GENERAL : The vendor should submit the following information:</b>		
<b>20.1</b>	Machine Model	Vendor to specify	
<b>20.2</b>	Total approximate connected load (KVA):	Vendor to specify	
<b>20.3</b>	Approximate Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify	
<b>20.4</b>	Painting of Machine/ Electrical Panels: RAL 6011 Apple Green (Polyurethane Paint)	Vendor to specify	
<b>20.5</b>	Approximate Total weight of the machine	Vendor to specify	
<b>20.6</b>	Approximate Weight of heaviest part of machine	Vendor to specify	
<b>20.7</b>	Approximate Weight of the heaviest assembly/ subassembly of the Machine	Vendor to specify	
<b>20.8</b>	Dimensions of largest part/ subassembly/ assembly of the machine	Vendor to specify	
<b>20.9</b>	Vendor to submit, along with offer, the reference list of customers where similar machines have been supplied mentioning the customer, Machine Model, major specifications of the supplied machine, Year of Supply etc	Vendor to provide	
<b>20.10</b>	Detailed catalogues, sketch/ photographs of the press and accessories/ attachments should be submitted with the offer.	Vendor to Confirm	
<b>20.11</b>	Hydraulic, Pneumatic & oil piping should be preferably metallic except places where flexible piping are essential. All the pipes required for the same shall be included in the standard scope of the machine.	Vendor to Confirm	
<b>20.12</b>	All elements of the press like valves, solenoids, motors, hoses etc should have permanent name plates / labels for clear identification	Vendor to Confirm	
<b>20.13</b>	All sliding surfaces should be lubricated by a centralized automatic lubrication system	Vendor to Confirm and furnish details	
<b>20.14</b>	Lubrication of bushings & bearings should be suitable for high temperature encountered in presses of this type	Vendor to Confirm	
<b>20.15</b>	First filling of required Grease should be supplied by vendor. Indigenous (Indian) source or Indian equivalent specifications of greases are also to be provided by the vendor.	Vendor to confirm and furnish details	

**Note: Cl. 2.2.9 to 2.2.16 except 2.2.12, 2.2.13, 2.2.14 : suggestive values are given above, vendor to specify the values as per design.**

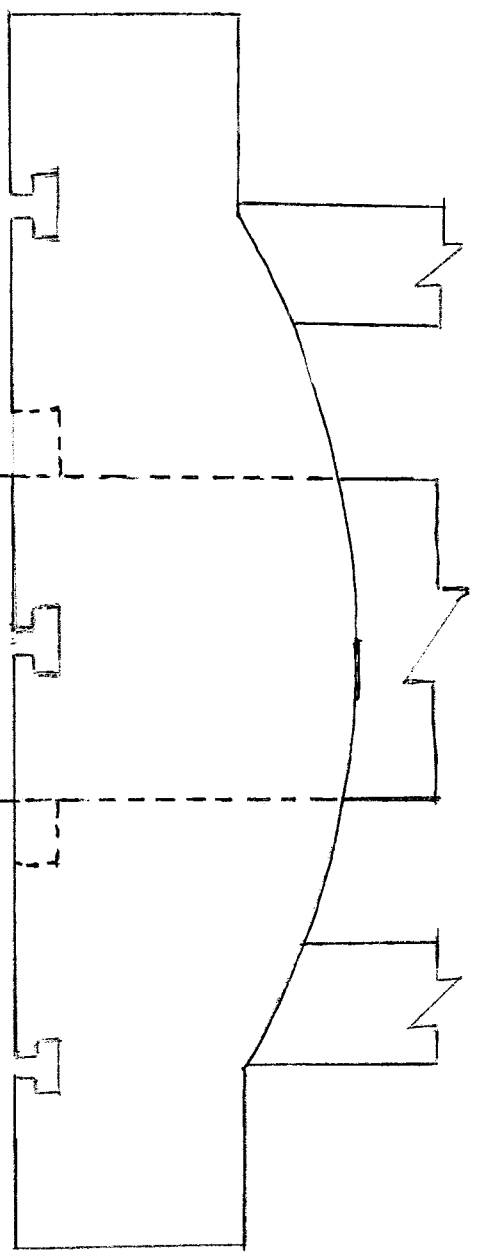




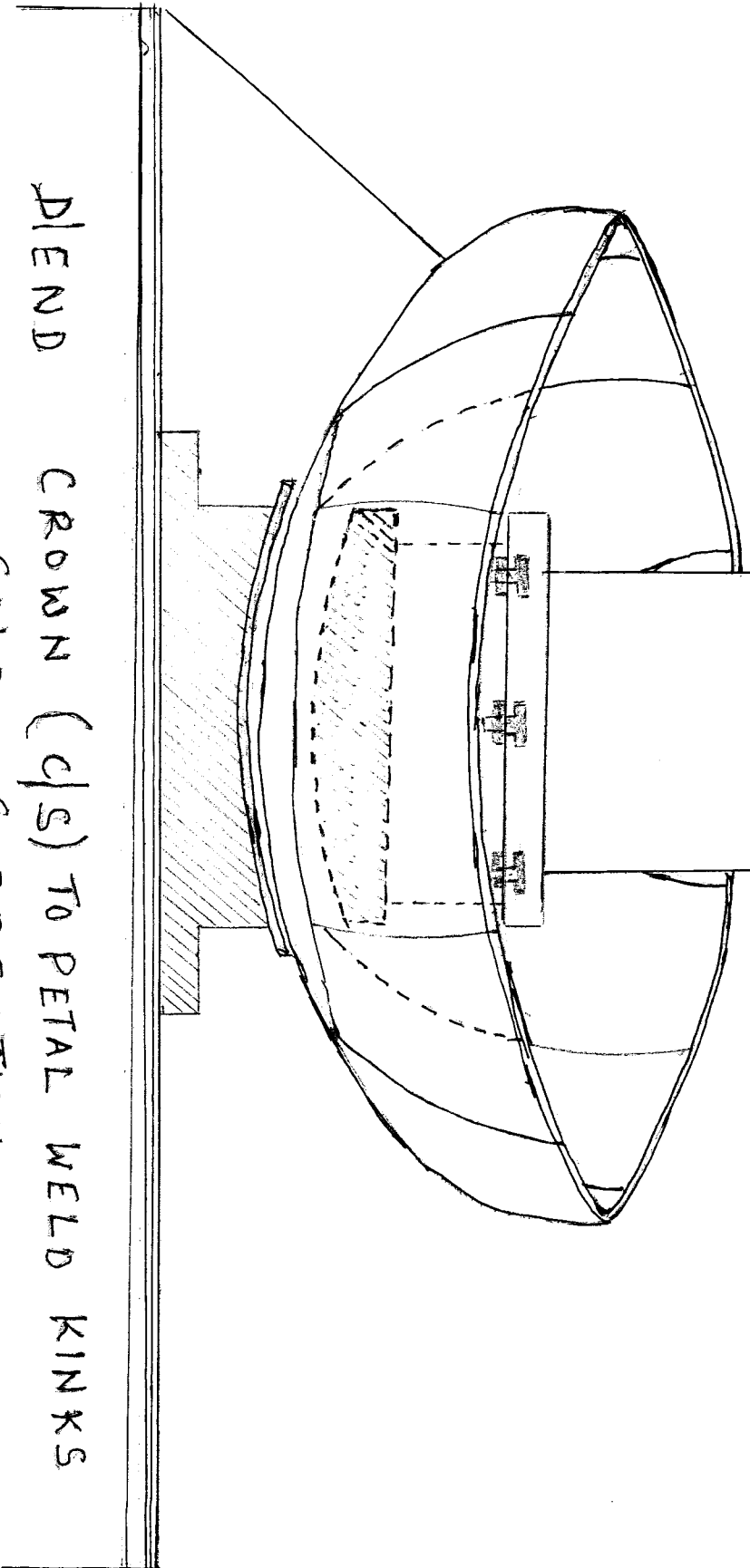




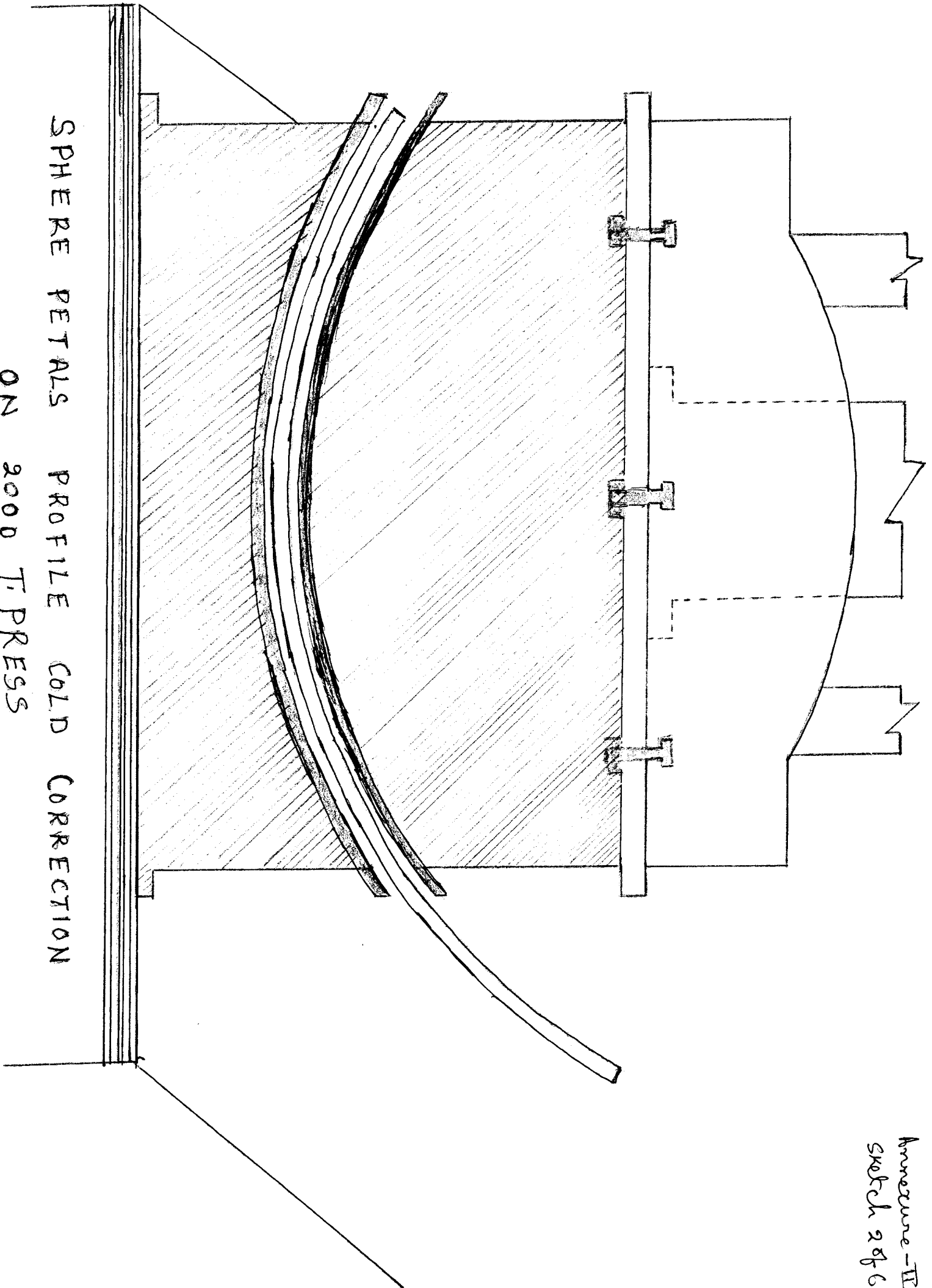




BLEND CROWN (C/S) TO PETAL WELD KINKS  
COLD CORRECTION

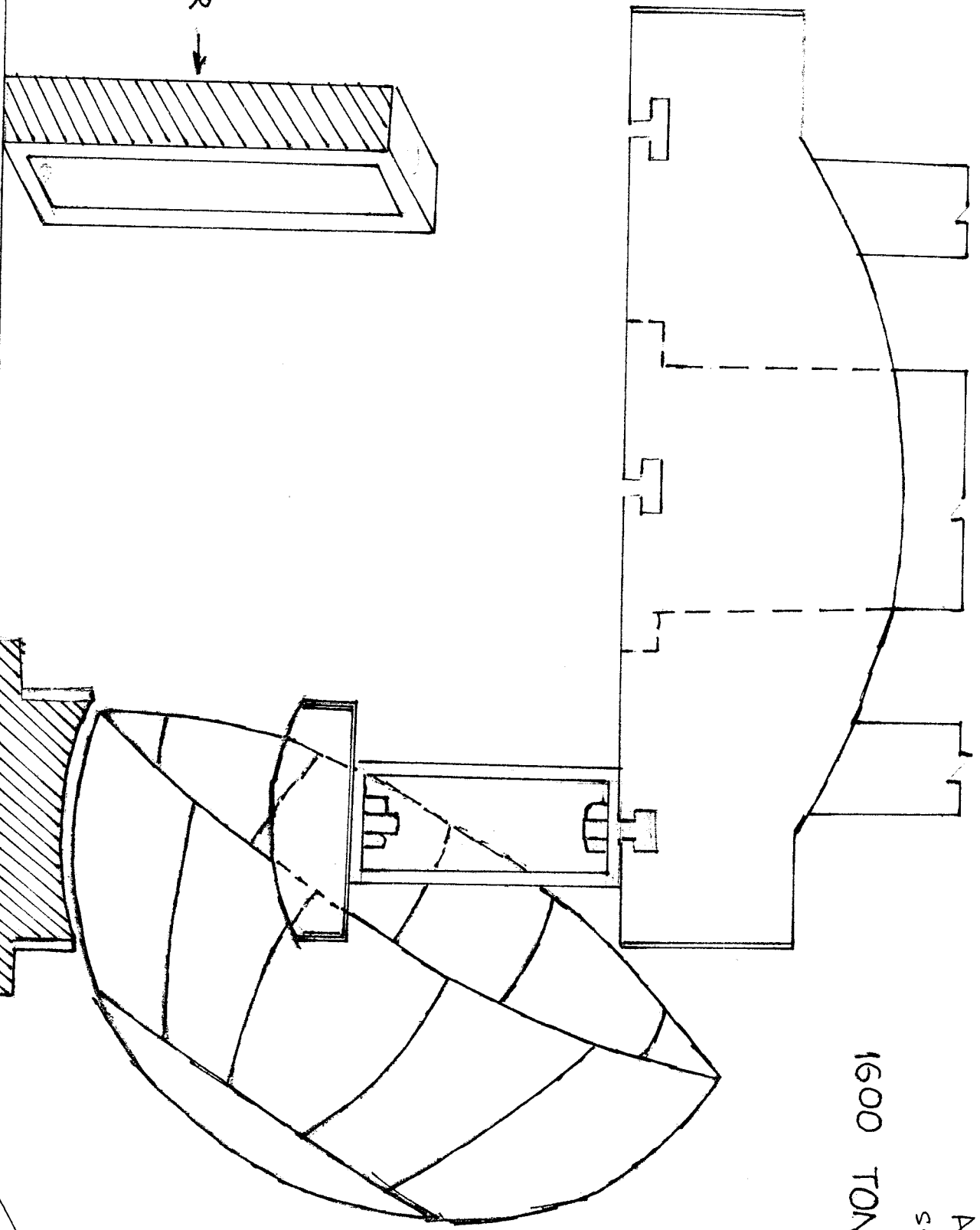


Annexure-II  
Sketch 296



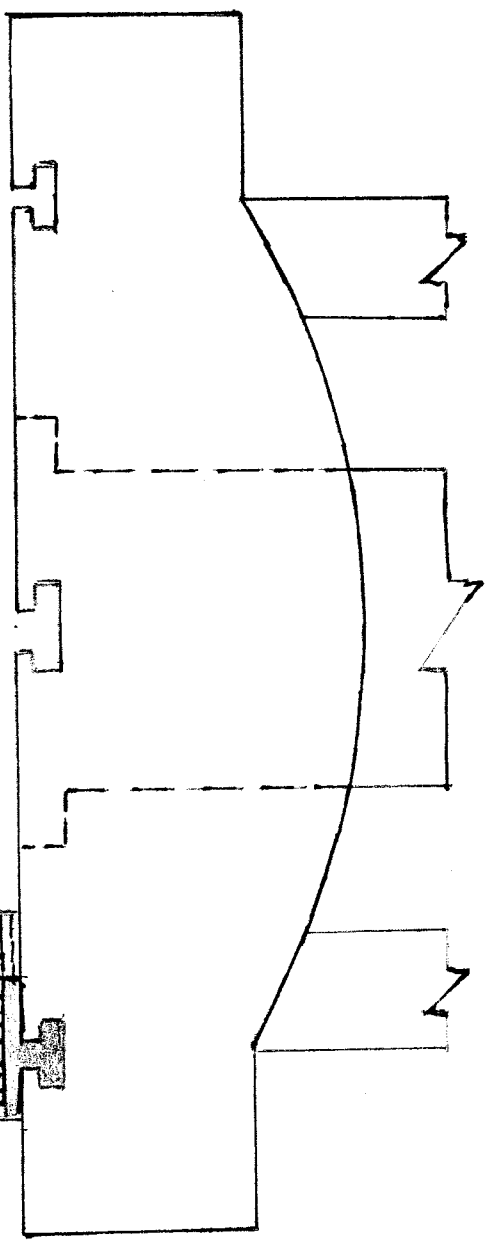
SPHERE PETALS PROFILE COLD CORRECTION  
ON 2000 T PRESS

Annexure - II  
Sketch 3 of 6  
1600 TON PRESS



STOPPER →

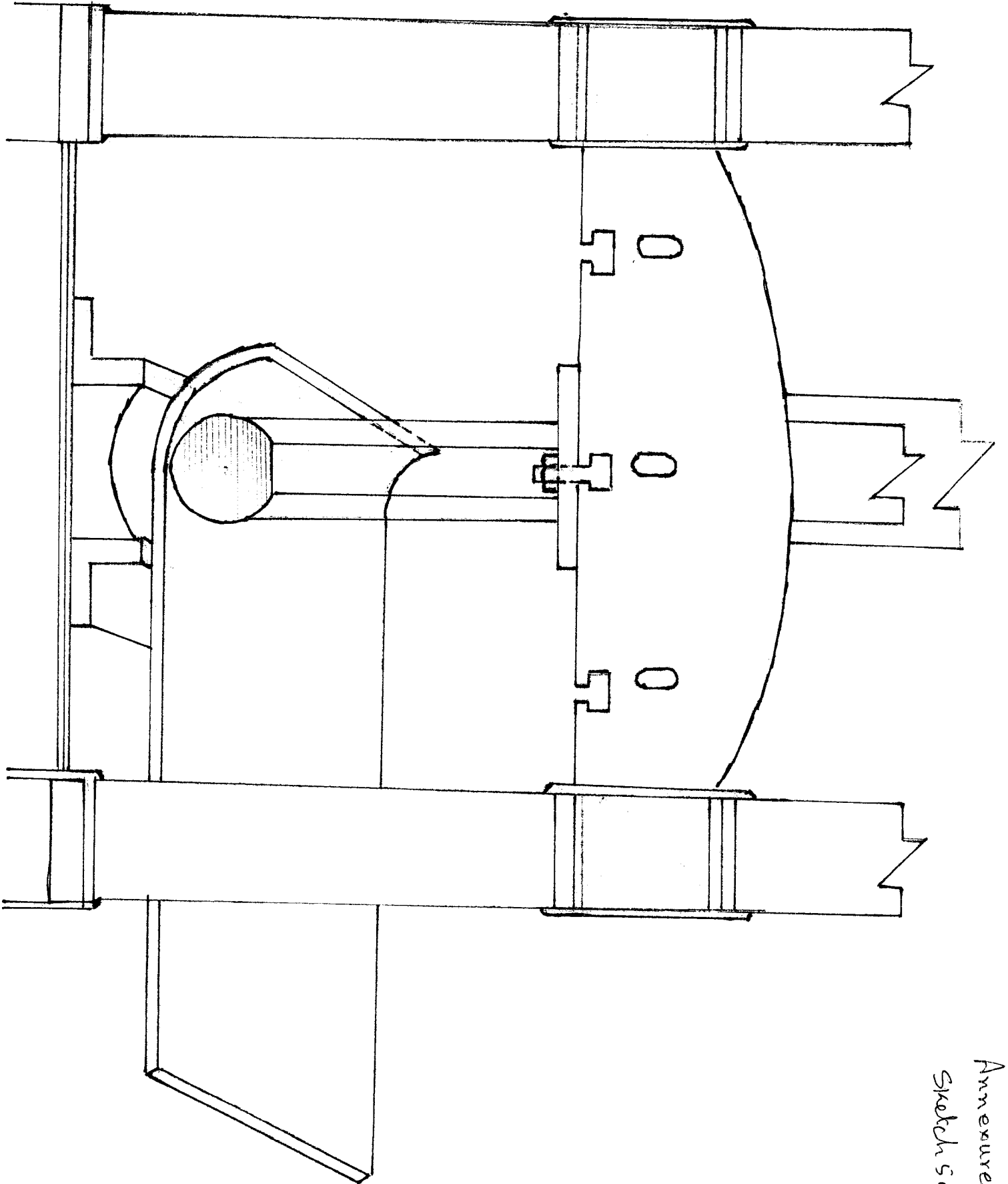
PETAL CONSTRUCTED BEND L/S & C/S WELDS (OLD CORRECTION  
ON 2000 TON PRESS (ECCENTRIC LOADING))



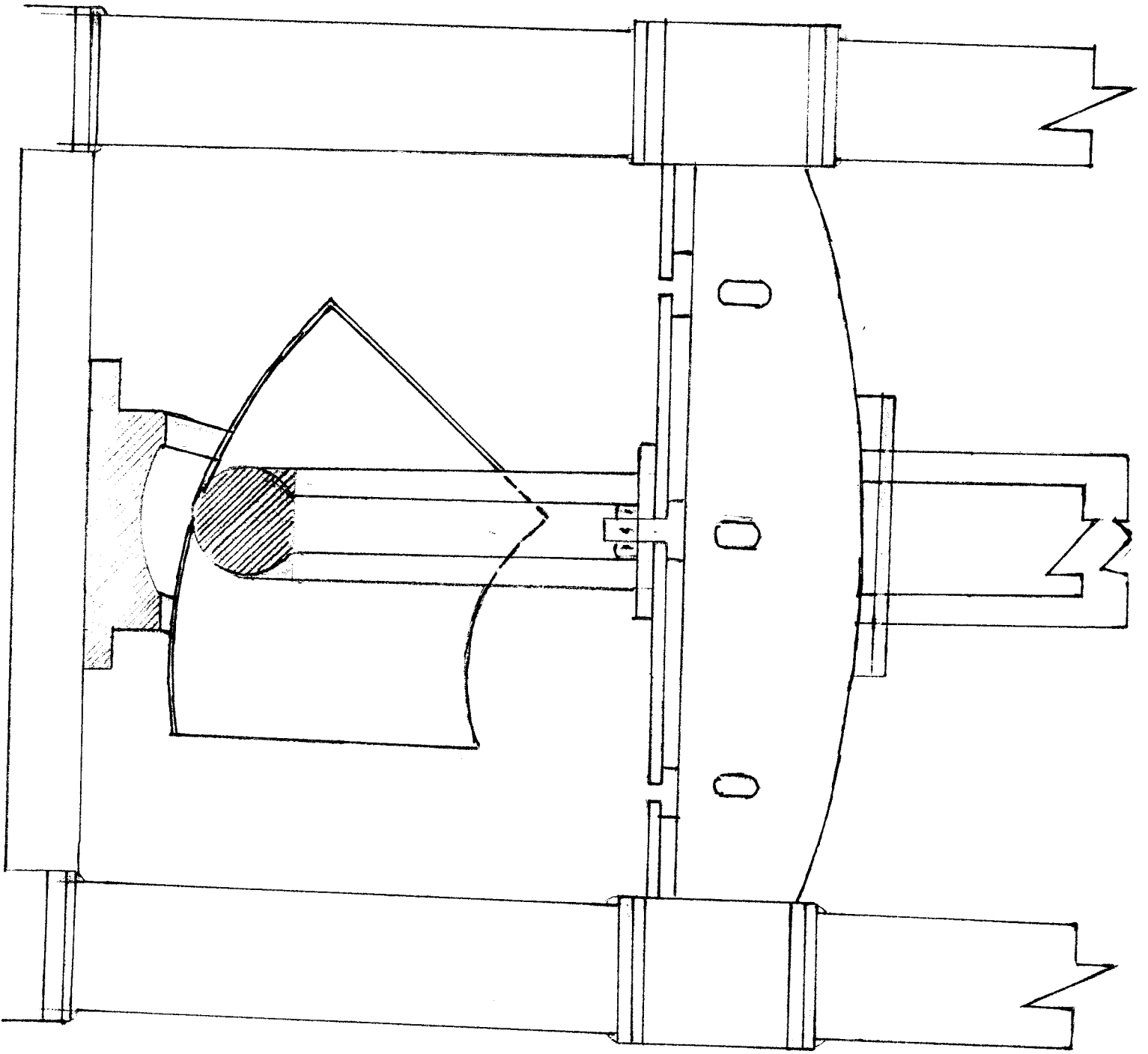
STOPPER →

WELD SEAMS, <sup>ROUGH</sup> & ROVALITY RECTIFICATION (ECCENTRIC LOADING)

Annexure-II  
Sketch 4 of 6



Annexure-II  
Sketch 5 of 6



Annexure-II  
Sketch 6 of 6.

## TYPE OF OPERATIONS

### 1.Dished Ends Hot Pressing (Single Piece).

Sl. No	Type of D.End.	Material	Dia of D/End in M.M	Blank Size & Thickness	Pressing Temp. in Deg.C	Temp. above which pressing to be completed	Remarks.
1	Hemispherical	C.S	500	1000 * 50	940+/-10	850	
2	Hemispherical	LAS	500	1000 * 50	980+/-10	950	
3	Hemispherical	S.S	500	1000 * 50	1080+/-10	1000	
4	Hemispherical	C.S	2200	3750 *120	940+/-10	850	
5	Hemispherical	LAS	2200	3700 * 80	980+/-10	950	
6	Hemispherical	S.S	2200	3700 *60	1080+/-10	1000	
7	Hemispherical	Titanium	1200	2100 * 30	950+/-10	900	
8	2:1 Ellipsoidal	C.S	500	1000 * 50	940+/-10	850	
9	2:1 Ellipsoidal	LAS	500	1000 * 50	980+/-10	950	
10	2:1 Ellipsoidal	S.S	500	1000 * 50	1080+/-10	1000	
11	2:1 Ellipsoidal	C.S	1800	2550 *120	940+/-10	850	
12	2:1 Ellipsoidal	LAS	1800	2500 * 80	980+/-10	950	
13	2:1 Ellipsoidal	S.S	1800	2500 * 60	1080+/-10	1000	
14	2:1 Ellipsoidal	Titanium	1500	2050 *30	950+/-10	900	
15	2:1 Ellipsoidal	C.S	2500	3400 * 100	940+/-10	850	
16	2:1 Ellipsoidal	LAS	2500	3400 * 80	980+/-10	950	
17	2:1 Ellipsoidal	S.S	2500	3350 *60	1080+/-10	1000	
18	2:1 Ellipsoidal	C.S	3200	4250 * 60	940+/-10	850	
19	2:1 Ellipsoidal	LAS	3200	4250 * 60	980+/-10	950	

### 2.Petal Constructed D/End,Tori Cone &Spherepetals

Sl.No	Component	Material	Size(Min./Max Dia.in M.M)	Thick ness	Petal Size	Pressing Temp.in Deg.C	Temp.above which pressing tobe completed	Remarks
1	2:1 Ellipsoidal D/End.	C.S,LAS,S.S	3000/8500	100	L 2000, W 1600	940+/-10	850	
2	2:1 Ellipsoidal D/End.	LAS	3000/8500	80	L 2000, W 1600	980+/-10	950	
3	2:1 Ellipsoidal D/End.	S.S	3000/8500	60	L 2000, W 1600	1080+/-10	1000	

## Petal Constructed D/End,Tori Cone &Spherepetals

Sl.No	Component	Material	Size(Min./Max Dia.in M.M)	Thickness in M.M(Max)	Petal Size	Pressing Temp.in Deg.C	Temp.above which pressing tobe completed	Remarks
1	2:1 Ellipsoidal D/End.	C.S	3000/8500	100	L 2000, W 1600	920+/-10	850	
2	2:1 Ellipsoidal D/End.	LAS	3000/8500	80	L 2000, W 1600	980+/-10	950	
3	2:1 Ellipsoidal D/End.	S.S	3000/8500	60	L 2000, W 1600	1080+/-10	1000	
4	Tori Cone.	C.S	1000/9000	100	L 2500, W 2000	940+/-10	850	
5	Tori Cone	LAS& Clad	1000/9000	80	L 2500, W 2000	980+/-10	950	
6	Tori Cone	S.S	600/5000	60	L 2000, W 1600	1080+/-10	1000	
7	Spheres.	C.S	8500/18000	60	L2500, W 6000	940+/-10	850	

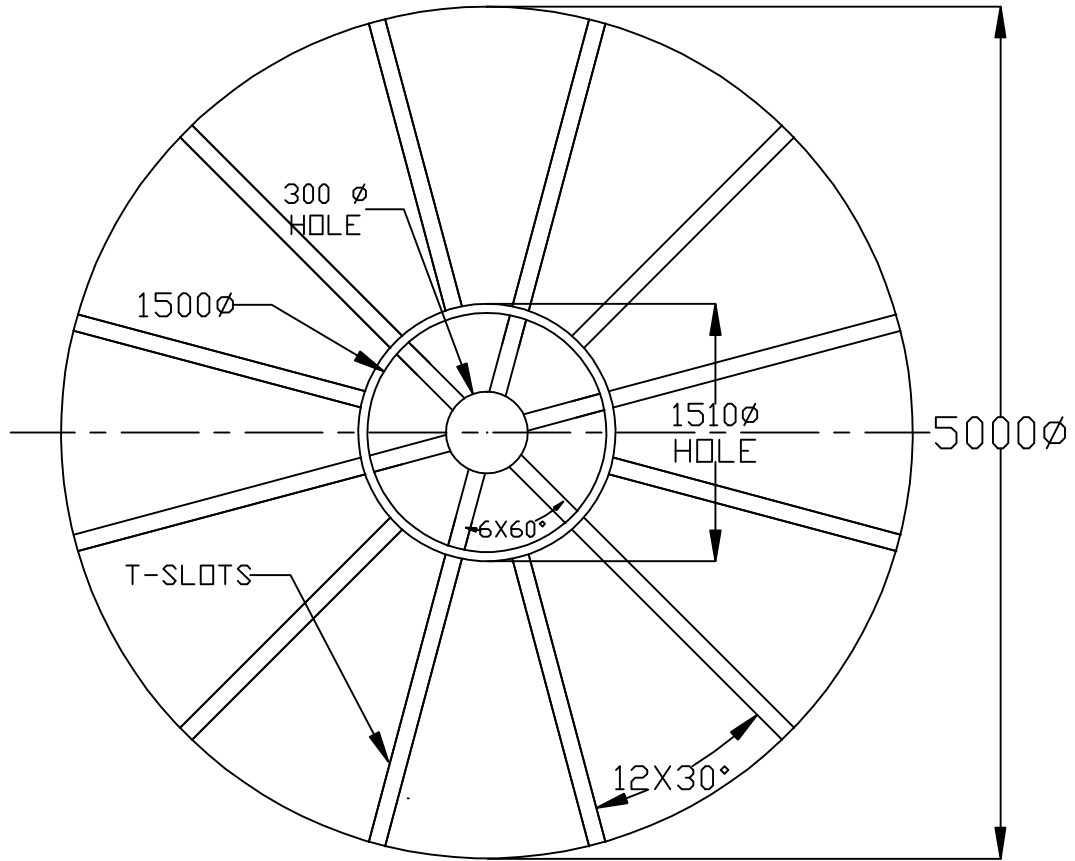
### 3.Cold correction of above Hotpressed Petals to suit the Profile.

### 4.Cold Rectification(WeldKinks onL/S&C/S Joints.)

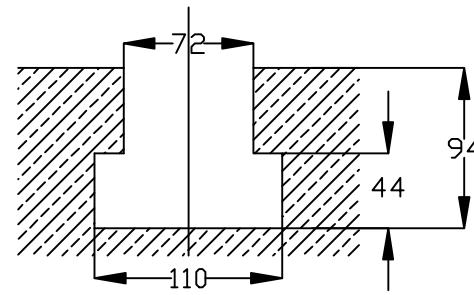
Sl.No	Component	Material	Size(Min./Max Dia.in M.M)	Thickness in M.M(Max)	Remarks
1	Hemispherical D.End.	C.S,LAS&S.S	1000/3000	40	
2	2:1 Ellipsoidal D.End.	C.S	3000/6000	80	
3	2:1 Ellipsoidal D.End.	LAS	3000/6000	60	
4	2:1 Ellipsoidal D.End.	S.S	2500/5000	40	
5	Tori Cone.	C.S	1000/5000	80	
6	Tori Cone	LAS&Clad	1000/5000	60	
7	Tori Cone	S.S	600/5000	40	

### 5.Line pressing of Cone Segments&Prebendingof Shell Sections.

ANNEXURE-4



TOP TABLE



DETAIL OF T-SLOT

BHPV LTD.- VISHAKAPATNAM

CALMPING SURFACE  
OF MOVING BEAM

DRG.NO:CRTK-MOD-2000T-001 REV. 0



**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 &amp; Conditions.

**Applicable for Indian bidders**

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

<b>BHPV Tender No: &amp; Date:</b>	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)	
<b>P &amp; F (Please confirm whether included or not)</b>	
<b>Freight (Please confirm whether included or not)</b>	
<b>Insurance (Please confirm whether included or not)</b>	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – <b>please Specify</b> )	
<b>Sales Tax (please Specify)</b>	
<b>Excise Duty (please Specify)</b>	
Delivery period from the date of Purchase Order ( <b>please Specify</b> ). 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) <b>(Offers from vendors not accepting the Risk Purchase terms will be rejected)</b>	
Payment terms (As per Clause No. 5.7.1) (Yes / No)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Yes / No) <b>(Offers from vendors not accepting to submit CEBG will be rejected)</b>	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) <b>(Offers from vendors not accepting to submit PBG will be rejected)</b>	
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) <b>(Offers from vendors not accepting to the guarantee period will be rejected)</b>	
<b>Inspection (please Specify the Place of Inspection)</b>	
Erection & Commissioning/ Installation/ Training <b>(Please confirm whether charges are included in the total cost or not)</b>	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature &amp; Office Seal of the bidder

**CHECK LIST**

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

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

<b>BHPV Tender No: &amp; Date:</b>	<b>Bidders Confirmation / response</b>
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices basis (FOB/CFR/CIF – <b>Please Specify</b> )	
Insurance ( <b>Please confirm whether included or not</b> )	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – <b>please Specify</b> )	
Currency in which quoted ( <b>please Specify</b> )	
Port of loading ( <b>please Specify</b> )	
Country of Origin ( <b>please Specify</b> )	
Delivery period from the date of Letter of Intent ( <b>please Specify</b> ) 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 ( <b>Offers from vendors not accepting the Risk Purchase terms will be rejected</b> ) (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) ( <b>Offers from vendors not accepting to submit CEBG will be rejected</b> )	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) ( <b>Offers from vendors not accepting to submit PBG will be rejected</b> )	
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). ( <b>Offers from vendors not accepting to the requested guarantee period will be rejected</b> ) (Yes / No)	
Inspection ( <b>please Specify</b> )	
Erection & Commissioning/ Installation/ Training ( <b>Please confirm whether charges are included in the total cost or not</b> )	
Dimension of the Largest Part ( <b>please Specify</b> )	
Packing Schedule (No of containers and their Sizes) ( <b>please Specify</b> )	
Approximate Net Weight of the total Consignment ( <b>please Specify</b> )	
Approximate Gross Weight of the total Consignment ( <b>please Specify</b> )	

Signature &amp; Office Seal of the bidder