

BHARAT HEAVY PLATE & VESSELS LIMITED.,  
(A Subsidiary Bharat Heavy Electricals Limited)  
A Government of India Enterprises  
Visakhapatnam – 530 012 INDIA.  
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**NOTICE INVITING TENDER( NIT)**

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

**SUB: Retrofit & Reconditioning of  
40T & 60T EOT CRANES**

Our Ref: **MM/2/10/1990/CAP/W-181/5187**

**DATE: 26.10.2012**

Sealed quotations in duplicate are invited from suppliers on **or before 16.11.2012** **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.	Retrofit and Reconditioning of 40T & 60T EOT CRANES (Estimated Cost of work is Rs. 85.57 Lakhs)	5 No 's
	<b>Encl:</b>  <b>1. Qualifying Criteria</b> ..... 1 pages <b>2. Technical Specifications</b> ..... 30 Pages <b>3. General Terms/ commercial terms and conditions</b> ..... 9 pages <b>(INCLUDING CHECK LIST)</b>	

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

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

**Revamping of 40/10T and 60/10T double girder EOT Cranes**

**DETAILS OF CRANE SPECIFICATIONS CAPACITY WISE, SCOPE OF WORK  
AND SCOPE OF SUPPLY**

**Objective:** The work is intended to recondition the 40T and 60T double girder EOT Cranes which are presently available in BHPV shop floor.

The list of Cranes that are required to be reconditioned under this tender are given below.

SNO	CAPACITY(TON)	MAKE	SPAN(Mtrs)	QTY(NOS)	REMARKS
1.	60/10T	Hindustan Motors	28.50	4	EOT Crane
2.	40/10T	Hindustan Motors	28.50	1	EOT Crane
	<b>TOTAL 5 Nos.</b>				

The vendor has to visit BHPV, examine the cranes that are to be reconditioned. Though the scope of work and scope of supply are outlined in the tender, it may be noted that the vendor has to include in their scope all the components/parts that require replacement/ reconditioning so that crane can be operated in normal working condition after reconditioning. The vendor has to mention in their offer, the works that may be required to be carried out, if any apart from what is mentioned in the technical specification to get the normal working of the Crane.

The vendor should also note that the reconditioning is to be done while the work shops are under working condition.

**LIST OF ENCLOSURES:**

1. PRE QUALIFICATION CRITERIA FOR 40/10T & 60/10T EOT CRANES - ANNEXURE-C1
2. SCOPE OF WORK, SCOPE OF SUPPLY AND GENERAL TERMS & CONDITIONS FOR 40/10T EOT CRANE – 1 No – ANNEXURE-C2
3. TECHNICAL SPECIFICATIONS FOR 40/10 T EOT CRANES – ANNEXURE-C3
4. SCOPE OF WORK, SCOPE OF SUPPLY AND GENERAL TERMS & CONDITIONS FOR 60/10T EOT CRANES - 4 Nos – ANNEXURE-C4
5. TECHNICAL SPECIFICATIONS FOR 60/10 T EOT CRANES – ANNEXURE-C5

**COMMON TO ALL 40/10T AND 60/10T EOT CRANES**

6. LIST OF SUPPLIERS FOR BOUGHT OUT ITEMS – ANNEXURE-C6
7. SPECIFICATIONS OF CABLES – ANNEXURE-C7
8. SPECIFICATIONS OF MASTER CONTROLLERS – ANNEXURE-C8
9. SPECIFICATIONS OF RADIO REMOTE CONTROL – ANNEXURE-C9

ANNEXURE C1

**PRE QUALIFICATION CRITERIA FOR 40/10T & 60/10T EOT CRANES**

The following conditions have to be satisfied by the tenderer and documentary proof is to be enclosed along with the tender bid. **In case the agency fails to enclose the following documentary proof with tender, the tender will be liable for rejection.**

i). The vendor shall be of crane Manufacturer of similar capacity cranes or a party doing retrofit/reconditioning of EOT Cranes. Average Annual financial turnover during the last 3 Years, ending 31<sup>st</sup> March 2011 should be at least 30% of the estimated cost. Party must submit at least three satisfactory certificates issued by customers for three different works done by the party is compulsory. Copies of purchase orders/work orders and corresponding completion certificates should be submitted as proof for verification. The dates of the P.O/Certificates should be within 7 Years only. Offers without these documents will be rejected. List of the customers along with respective contracting officers' addresses (Including Phone No/E-Mail ID) for whom the Cranes were supplied/reconditioned should be enclosed with the offer.

ii). Experience of having successfully completed similar works during last 7 Years ending 31<sup>st</sup> July 2011 should be any one of the following:-

Three similar completed works (40T or above capacity double girder EOT/Gantry Cranes) costing not less than the amount (value of each order) equal to 40% of the estimated cost.

Or

Two similar completed works (40T or above capacity double girder EOT/Gantry Cranes) costing not less than the amount (value of each order) equal to 50% of the estimated cost.

Or

One similar completed work (40T or above capacity double girder EOT/Gantry Cranes) costing not less than the amount (value of each order) equal to 80% of the estimated cost.

iii). Definition of "similar work" means 'Manufacturers of EOT Cranes including erection and commissioning of EOT Cranes or repair/reconditioning of EOT Cranes'.

Both the above conditions (i and ii) should be fulfilled.

iv). The cut-off date for clarification to the vendors, visit to BHPV for inspection of cranes to be completed 10 days prior to tender due date. There will be not be any further extension of due date.

**ANNEXURE C2**

**SCOPE OF WORK, SCOPE OF SUPPLY AND GENERAL TERMS & CONDITIONS  
FOR 40/10T EOT CRANE – 1 No**

**Scope of work**

The vendor's scope of work broadly consists of

1. Disconnecting Electrical supply to the Cranes from DSL line. Disconnecting all the cables from panels and removing all the cables. Dismantling the control panels and bringing down the panels and cables. Dismantling and removal of the existing cable tray.
2. Fixing of panels and resistance boxes on the bridge platform on a 'L' angle fabricated support frame.
3. Total rewiring of the crane. The cables on the platforms have to be placed in perforated cable trays. Junction boxes have to be provided at suitable locations.
4. Fixing the limit switches for all motions and connecting them in the circuit.
5. Power up of the crane and checking all the motions for proper functioning.
6. The SWL of the Crane is to be lifted and shown for proper working.
7. All the mechanical parts supplied by vendor are to be assembled to the crane.
8. Any other work that is required to be carried out to get the crane to normal working condition.
9. Prove out/Load test to be carried out as per IS standard and performance of the crane to be demonstrated.
10. All the works mentioned under Technical Specifications(Annexure-C3) forms part of scope of work.

**Scope of supply**

**A. Electrical**

The following are to be supplied and erected as minimum.

1. Crane control panels as per the specifications enclosed are to be supplied in the specified quantities. The bought – out items to be supplied should be from the list of Suppliers (enclosed at Annexure C6).
2. Perforated cable trays, glands, hooters, lugs and ferrules, limit switches for all motions and cable trolleys are to be supplied and erected.

**ANNEXURE C2**

3. All the cables required for total wiring up the crane shall be supplied and old cabling shall be replaced with new cables as per the list of Suppliers for bought – out items (enclosed at Annexure C6).
4. The dressing and proper clamping is in the scope of vendor.
5. The main contactor should operate after checking zero interlocks of respective MH,AH,LT,CT and respective limit switches.
6. Anti collision device (collision between two cranes) is to be provided in all EOT cranes under retrofitting.
7. All limit switches(MH,AH,LT,CT) and existing resistance boxes are to be replaced with new ones by the vendor. In addition to it, additional gravity limit switches are to be provided for MH and AH in all cranes.
8. All the items mentioned in the Technical specifications(Annexure-C3) form part of the scope of work.

**B. Mechanical**

The condition of all the brakes shall be examined for their condition and shall be replaced, if required.

**Note:** Two years operational / maintenance spares (both mechanical and electrical) to be quoted separately.

**ANNEXURE C2**

**General terms and conditions**

1. Materials required such as welding generator, electrodes, cotton waste, C-channels, I – sections, 'L' angular will be supplied by BHPV at free of cost
2. Safety of the workmen is the sole responsibility of the supplier and all the safety regulations as per AP factories act are to be followed while doing the work
3. The contractor and his / her workmen shall use the necessary safety equipments (like safety belts, helmets etc.,) and shall comply with BHPV safety rules.
4. The necessary works on the crane and prove out for proper functioning of crane is to be done by the vendor.
5. These conditions should be read in conjunction with general conditions of contract of BHPV Limited, Vishakhapatnam – 530 012.
6. Contractor shall procure the complete materials required for scope of work and arrange his own tools & tackles. Power can be drawn by the contractor from the existing supply point of BHPV free of cost. Cables etc., required for drawing the supply is in contractor scope. Compressed air & water etc shall be supplied to the contractor free of cost. Welding machine shall be provided by BHPV free of cost.
7. 'L' angles required for fabricating the stands below the panels will be provided by BHPV free of cost.
8. All the tools and material brought inside the factory should be registered at the security gate at the time of bringing inside the factory. No gate pass will be given to take back the above on completion of work if the contractor fails to show the security department's certification that the material has been brought inside.
9. Contractor shall maintain all records pertaining to his work.
10. No foreign / used or unused / scrapped / broken parts shall be left on the Gantry girder / walk ways / Cranes. All used / worn out / scrapped / replaced spares / parts shall remain the property of BHPV
11. The contractor and their staff should follow the rules and regulations for employment of labour by contractors in BHPV
12. Utmost care should be taken by the contractor to carry out the works in a proper way and with quality workmanship so as to adhere to the safety requirements as per the latest version of AP Factories Act. All the contractor's personnel shall use PPEs (Personnel Protection Equipment) as required.
13. Two Years operational / maintenance spares(both Mechanical and electrical) to be quoted separately.
14. Contractor should abide by the regulations (PF, Min wages Act, ESI, Safety etc.)
15. Decision to replace or repair the worn out part shall be mutual on consent of the Engineer-in-charge or his any representative and the contractor. In the event of any controversy the decision of the Accepting Authority shall be final and binding.

**ANNEXURE C3**

**TECHNICAL SPECIFICATIONS FOR 40/10 T EOT CRANES**

**40/10T EOT Crane(1 No) (Span = 28.5 Mtrs, hook height = 10.5 Mtrs) with two motors for LT motion.**

1. The existing Crane is operational from operator cabin through drum control for CT operation and other motions by master control.
2. The following voltages shall be used in the crane
  - a) Incoming supply : 3 Phase,415V,50 Hz, 4 wire system with one conductor for earth
  - b) Lighting supply: 220V AC
  - c) Control circuits supply: 110 V AC
  - d) Hand lamp supply: 24 V AC
3. All the crane motors are totally enclosed fan cooled slip ring induction motors.
4. The motors present on the Crane for different functions are as follows

**Main Hoist motor**

KW : 75  
 FLC : 142 A  
 RV : 235 V, Stator Volt: 415V  
 RA : 200 A  
 RPM: 980

**Cross Travel Motor**

KW: 11  
 FLC: 23A  
 RV:260V, Stator Volt: 415V  
 RA: 25A  
 RPM: 960

**Auxiliary Hoist motor**

KW : 45  
 FLC : 90 A  
 RV : 175 V, Stator Volt: 415V  
 RA : 153 A  
 RPM : 970

**Long Travel motor(Two motors for LT motion)**

KW: 25  
 FLC: 48A  
 RV: 245V, Stator Volt: 415V  
 RA: 65A  
 RPM: 960

All the above motors are crane duty slip ring induction motors with 150 starts per hour and half hour rating.

5. The existing Resistance Box details.
 

Make: Seimens India Ltd

  - a. MH: Type:12/D3.1  
 Resistance: 3 X 0.3 Ohm  
 Amps: 235 170 110  
 Duty: 20% 40% 100%
  - b. AH : Resistance: 3 X 2.38 Ohm
  - c. LT : Resistance: 3 X 0.14 Ohm
  - d. CT : Resistance: 3 X 4.9 Ohm

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**ANNEXURE C3**

**Vendor should fill up the following form:**

SINo	BHPV Specification	Supplier Offer	Remarks
1.	Single control panel with Individual cubicles with doors comprising of Protective Panel, MH Panel, AH Panel, CT Panel and LT Panel are to be designed, manufactured and supplied to interface 40T Capacity EOT Crane as per the following specifications.		
2.	The crane shall be operated from either the master controller or Radio remote control unit. Selection between the master controller and the RRC unit shall be by means of rotary selector switch placed in the cabin.		
3	A socket with a switch and fuse protection shall be provided for hand lamp supply. Fuse / MCB protection of suitable rating shall be provided for control circuit supply and lighting supply.		
4	One incoming RM switch of 32A capacity should be mounted on the crane platform on a suitable bracket made from 'L' angles. The supply from the RM switch should go to the protective panel. A switch fuse unit with handle (panel mounting type) of suitable capacity should be provided in the protective panel to isolate the power supply to the protective panel and all the other panels. A separate MCCB is to be provided in the protective panel to isolate the supply to control circuits.		
5	Individual isolating MCCBs of required rating shall be provided for MH, AH,CT and LT circuits		
6	Individual protection fuses of required rating shall be provided for each of the circuits (MH, AH,CT & LT)		
7	MH and AH circuits shall be designed for resistance control on the rotor circuit during lifting and lowering operations. Mechanical braking shall not be employed during lowering operation. Suitable Electro Hydraulic thruster motor with brake units for all the motions should be provided.		
8	Cross travel and Long travel circuits shall be designed for resistance control on the rotor circuit.		
9	The Hoist motions, Cross travel and Long travel motions shall have four speed steps in either direction through master controller (10%, 25%, 50% and 100%). They will have three steps through RRC(10%, 50% and 100%).		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**Vendor should fill up the following form:**

SINo	BHPV Specification	Supplier Offer	Remarks
10	Creep speed operation shall be provided for MH and AH application. The 10% speed mentioned above shall be the creep speed. Tapping shall be provided on the Creep transformer as follows- Primary:200V, 230V, 260V, 280V and 300V. Secondary:415V, Separate creep transformer of suitable KVA rating and tappings for creep speed operation shall be provided for each Hoist motion.		
11	MH and AH motions shall be provided with one series limit switch of counter weight type and one rotary shunt limit switch. Cross travel and long travel motions shall be provided with lever operated limit switches to be incorporated in the respective control circuits		
12	Contactors shall be of from the preferred makes list enclosed. The rating of the contactors shall be suitable for Crane duty application as per IS: 3177 – 1999. All other switchgear items also shall be of from the preferred makes list enclosed.		
13	All the power and auxiliary contactors, individual overload relays, timers etc., shall be mounted in a panel fabricated from sheet steel of 14 gauge material. The control panel shall be dust and vermin proof and with good finishing.		
14	All the components are to be mounted on a U shaped mounting channel fabricated out of 12 SWG CR sheet, zinc plated and passivated.		
15	All the contactors, timers, I/O relays etc., shall be mounted securely in a vertical arrangement with due consideration to the vibration encountered in the operation of the crane. The bottom row of equipment mounted inside the panel excepting terminals blocks shall be at least 300 mm above the bottom cover of the panel to facilitate inspection and repair works. The terminal blocks shall be mounted 200mm above the bottom cover of the panel.		
16	The dimensions of the panels shall be as follows a. The height of the panel shall not exceed 1500 mm and the depth of the panel 350 mm. b. The length of the panel shall be as per requirement c. The panels shall be provided with stands fabricated from MS 32 angular of 50 mm x 50 mm x 6 mm (Height of stand should be 400 mm)		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**Vendor should fill up the following form:**

SINo	BHPV Specification	Supplier Offer	Remarks
17	The panel shall be well braced to the Crane structure and shall be provided with two eye bolts for lifting the panel		
18	Each door of the panel shall be provided with locking facility (slotted clit and moving flanker)		
19	One extra C – Channel is to be fixed in the panel and 10 Nos. of 10 Sq. mm connectors are to be mounted on the channel for RRC system installation purpose. Type 10 Sq.mm terminals are to be used for control circuits. 30% spare connectors are to be provided in the panel.		
20	All the power circuit connectors shall be of as per preferred list of bus bar type connectors.		
21	Four sets of Block diagrams, Circuit diagrams, electrical drawings for each panel shall be provided		
22	Arrangements of terminal blocks inside the panel shall be in an approved manner with consideration to the vibrations encountered in operation of the crane. The terminal blocks shall be so located that the chances of flash over between live terminals are minimized due to falling and accumulation of conducting dust on the terminals. The terminal blocks shall be fitted in such a way that there is adequate clearance between the bottom most row of equipment and the terminal blocks.		
23	Terminal strip shall be fixed inside the panel preferably in a horizontal alignment leaving enough space underneath the panel for termination of cables in a convenient manner. A minimum clearance of 200 mm shall be provided between the terminal blocks and floor of the panel to facilitate entry of incoming cables.		
24	Power and control cables shall be segregated. Power terminal blocks shall be separated from each other by means of insulated terminal spacers. All power cables shall be of a minimum size of 6 Sq.mm or above (as required) and control cables of a minimum size of 1.5 Sq.mm. Both power and control cables shall be of copper conductors and multi stranded (Class 5 as per IS694) Single strand wires shall not be used for wiring.		
25	All the equipment and power / control terminals / cables shall have proper identification. All the wires shall be numbered with proper size ferrules.		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**ANNEXURE C3**

<b>SINo</b>	<b>BHPV Specification</b>	<b>Supplier Offer</b>	<b>Remarks</b>
26	Degree of protection of panels shall be IP 54 as per IS: 2147		
27	A suitable pocket of sheet steel is to be fabricated on the inside of the panel door to keep a set of electrical circuit drawings.		
28	One set of Electrical drawings of the panels are to be sent to BHPV for approval before commencement of production. Three sets of approved drawings are to be supplied along with the panels		
29	Test certificates to be given for all bought out items wherever applicable		
30	The bought out items shall be as per the list enclosed		
31	The panel doors are to be fixed with labels made from aluminum foil on the front side indicating the type of circuit (MH or AH or CT etc).		
32	For the existing 40T EOT crane the CT is in drum control. This crane has to be converted to Master control.		
33	One main contactor(Master contactor) is to be provided in all cranes with MCCB and incoming isolator(Specification – MCCB with adjustable thermal – magnetic trip unit(overload & short circuit) Auxiliary contact(1 NO + 1NC), 3 pole 500V. Zero interlocks of master controllers and rotary limit switches to be incorporated with main contactor.		
34	Master contactor and MCCB of 315A for EOT and Gantry Cranes have to be provided in the protective panels.		
35	Individual isolators for each crane are to be mounted on the girder of the crane with ratings mentioned above. Isolator(Iron clad triple pole isolator switch without fuses and of load isolating type).		
36	Individual MCCB protection for all motions of all the cranes.		
37	Fault indications and reset facility is to be provided in the respective control panels on the crane for each motion(MH,AH,LT,CT).		
38	All master controllers should be dead man handle type and spring returned to zero position.		

**SCOPE OF WORK, SCOPE OF SUPPLY AND GENERAL TERMS & CONDITIONS FOR 60/10T EOT CRANES - 4 Nos**

**Scope of work**

The vendor's scope of work broadly consists of

1. Disconnecting Electrical supply to the Cranes from DSL line. Disconnecting all the cables from panels and removing all the cables. Dismantling the control panels and bringing down the panels and cables. Dismantling and removal of the existing cable tray.
2. Fixing of panels and resistance boxes on the bridge platform on a 'L' angle fabricated support frame.
3. Total rewiring of the crane. The cables on the platforms have to be placed in perforated cable trays.
4. Fixing the limit switches for all motions and connecting them in the circuit.
5. Power up of the crane and checking all the motions for proper functioning.
6. The SWL of the Crane is to be lifted and shown for proper working.
7. All the mechanical parts supplied are to be assembled to the crane.
8. Any other work that is required to be carried out to get the crane to normal working condition.
9. Prove out/Load test to be carried out as per IS standard and performance of the crane to be demonstrated.

**Scope of supply**

**A. Electrical**

The following are to be supplied and erected as minimum.

1. Crane control panels as per the specifications enclosed are to be supplied in the specified quantities. The bought – out items to be supplied should be from the list of Suppliers (enclosed Annexure II , details as per 'D' page 1).
2. Perforated cable trays, glands, hooters, lugs and ferrules, limit switches and cable trolleys are to be supplied and erected.

**ANNEXURE C4**

3. All the cables required for total wiring up the crane shall be supplied and old cabling shall be replaced with new cables as per the list of Suppliers for bought – out items (enclosed Annexure II , details as per 'E' page 1).
4. The dressing and proper clamping is in the scope of vendor.
5. The main contactor should operate after checking zero interlocks of respective MH,AH,LT,CT and respective limit switches.
6. Anti collision facility (collision between two cranes) is to be provided in all EOT cranes under retrofitting.
7. All limit switches(MH,AH,LT,CT) and existing resistance boxes are to be replaced by the vendor. In addition to it, gravity limit switches are to be provided for MH and AH in all cranes.

**B. Mechanical**

For 60T EOT Cranes, the following are to be supplied and commissioned as minimum.

1. LT drive wheels as per drawing (Drg.No.M2-486-G18-22) – 6 Nos.
2. LT idle wheels as per drawing (Drg.No.M2-486-G18-22) – 16 Nos.
3. Main hoist snatch block pulleys as per drawing (Drg.No.M3-3333-G18-224) – 6 Nos.
4. Auxiliary hoist snatch block pulleys as per drawing (Drg.No.M3-2709-G18-168) – 4 Nos.
5. Plummer block (110 dia) as per drawing (Drg.No.M2-868-G-18-43) - 6 Nos.
6. Ring gear for CT & LT as per drawing (Drg.No.M2-491-G-18-24) - 4 Nos.

The condition of all the brakes shall be examined for their condition and shall be replaced, if required.

**Note:** Two years operational / maintenance spares (both mechanical and electrical) to be quoted separately.

**General terms and conditions**

1. Materials required such as welding generator, electrodes, cotton waste, C-channels, I – sections, 'L' angular will be supplied by BHPV at free of cost
2. Safety of the workmen is the sole responsibility of the supplier and all the safety regulations as per AP factories act are to be followed while doing the work
3. The contractor and his / her workmen shall use the necessary safety equipments (like safety belts, helmets etc.,) and shall comply with BHPV safety rules.
4. The necessary works on the crane and prove out for proper functioning of crane is to be done by the supplier
5. These conditions should be read in conjunction with general conditions of contract of BHPV Limited, Vishakhapatnam – 530 012.
6. Contractor shall procure the complete materials required for scope of work and arrange his own tools & tackles. Power can be drawn by the contractor from the existing supply point of BHPV free of cost. Cables etc., required for drawing the supply is in contractor scope. Compressed air & water etc shall be supplied to the contractor free of cost. Welding machine shall be provided by BHPV free of cost.
7. 'L' angles required for fabricating the stands below the panels will be provided by BHPV free of cost.
8. 4. All the tools and material brought inside the factory should be registered at the security gate at the time of bringing inside the factory. No gate pass will be given to take back the above on completion of work if the contractor fails to show the security department's certification that the material has been brought inside.
9. Contractor shall maintain all records pertaining to his work.
10. No foreign / used or unused / scrapped / broken parts shall be left on the Gantry girder / walk ways / Cranes. All used / worn out / scrapped / replaced spares / parts shall remain the property of BHPV
11. The contractor and their staff should follow the rules and regulations annexed with for employment of labour by contractors in BHPV
12. Utmost care should be taken by the contractor to carry out the works in a proper way and with quality workmanship so as to adhere to the safety requirements as per the latest version of AP Factories Act. All the contractor's personnel shall use PPEs (Personnel Protection Equipment) as required.
13. Two Years operational / maintenance spares(both Mechanical and electrical) to be quoted separately.
14. Contractor should abide by the regulations (PF, Min wages Act, ESI, Safety etc.)
15. Decision to replace or repair the worn out part shall be mutual on consent of the Engineer-in-charge or his any representative and the contractor. In the event of any controversy the decision of the Accepting Authority shall be final and binding.

**TECHNICAL SPECIFICATIONS FOR 60/10T EOT CRANES**

**60/10T EOT Cranes(4 Nos) (Span = 28.5 Mtrs, hook height = 16.1 Mtrs-2 Nos, 10.5 Mtrs – 2 Nos) with two motors for AH motion.**

1. The existing Cranes are operational from drum control for CT motion and other motions by master control(3 Nos) and one crane operates with both Master controller and RRC.
2. The following voltages shall be used in the crane
  - a) Incoming supply : 3 Phase,415V,50 Hz, 4 wire system with one conductor for earth
  - b) Lighting supply: 220V AC
  - c) Control circuits supply: 110 V AC
  - d) Hand lamp supply: 24 V AC
3. All the crane motors are to tally enclosed fan cooled slip ring induction motors.
4. The motors present on the Crane for different functions are as follows

**Main Hoist motor**

KW : 75  
 FLC : 142A  
 RV : 225 V, Stator Volt: 415V  
 RA : 216A  
 RPM : 980

**Auxiliary Hoist Motor(Two motors for AH operation)**

KW : 20  
 FLC : 38A  
 RV : 245V  
 RA : 51A  
 RPM: 975

**Cross Travel motor**

KW : 14.5  
 FLC : 28A  
 RV : 230 V, Stator Volt: 415V  
 RA : 41A  
 RPM : 955

**Long Travel motor (One motor for LT motion)**

KW : 60  
 FLC : 115A  
 RV : 180 V, Stator Volt: 415V  
 RA : 205A  
 RPM : 960

All the above motors are crane duty slip ring induction motors with 150 starts per hour and half hour rating

5. Existing Resistance Box details.

Make: Seimens India Ltd

- |  |  |   |
|--|--|---|
| <p>a. MH: Cast iron type<br/>                 Resistance: 3 X 0.09 Ohm<br/>                 Amps: 430 310 200<br/>                 Duty Factor: 20% 40% 100%</p> | <p>b. AH: Type: 8/D18<br/>                 Resistance: 3 X 1.8 Ohm</p> | <p>c. LT: Type: 10/D1.4<br/>                 Resistance: 3 X 0.14 Ohm<br/>                 Amps 310 225 145<br/>                 Duty Factor 20% 40% 100%</p> |
| <p>d. CT: Type: 2/D4.0<br/>                 Resistance: 3 X 4 Ohm</p>  |  |   |

**ANNEXURE C5**

**Vendor should fill up the following form:**

<b>SINo</b>	<b>BHPV Specification</b>	<b>Supplier Offer</b>	<b>Remarks</b>
1.	Single control panel with individual cubicles with doors comprising of Protective Panel, MH Panel, AH Panel, CT Panel and LT Panel are to be designed, manufactured and supplied to interface 60T Capacity EOT Cranes as per the following specifications.		
2.	The crane shall be operated from either the master controller or Radio remote control unit. Selection between the master controller and the RRC unit shall be by means of rotary selector switch placed in the cabin.		
3	A socket with a switch and fuse protection shall be provided for hand lamp supply. Fuse / MCB protection of suitable rating shall be provided for control circuit supply and lighting supply.		
4	One incoming RM switch of 32A capacity should be mounted on the crane platform on a suitable bracket made from 'L' angles. The supply from the RM switch should go to the protective panel. A switch fuse unit with handle (panel mounting type) of suitable capacity should be provided in the protective panel to isolate the power supply to the protective panel and all the other panels. A separate MCCB is to be provided in the protective panel to isolate the supply to control circuits.		
5	Individual isolating MCCBs of required rating shall be provided for MH, AH,CT and LT circuits		
6	Individual protection fuses of required rating shall be provided for each of the circuits (MH, AH,CT & LT)		
7	MH and AH circuits shall be designed for resistance control on the rotor circuit during lifting and lowering operations. Mechanical braking shall not be employed during lowering operation. Suitable Electro Hydraulic thruster motor with brake units for all the motions should be provided.		
8	Cross travel and Long travel circuits shall be designed for resistance control on the rotor circuit.		
9	The Hoist motions, Cross travel and Long travel motions shall have four speed steps in either direction through master controller (10%, 25%, 50% and 100%). They will have three steps through RRC(10%, 50% and 100%).		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**ANNEXURE C5**

**Vendor should fill up the following form:**

S/No	BHPV Specification	Supplier Offer	Remarks
10	Creep speed operation shall be provided for MH and AH application. The 10% speed mentioned above shall be the creep speed. Tapping shall be provided on the Creep transformer as follows- Primary: 200V, 230V, 260V, 280V and 300V. Secondary: 415V, Separate creep transformer of suitable KVA rating and tappings for creep speed operation shall be provided for each Hoist motion.		
11	MH and AH motions shall be provided with one series limit switch of counter weight type and one rotary shunt limit switch. Cross travel and long travel motions shall be provided with lever operated limit switches to be incorporated in the respective control circuits		
12	Contactors shall be of from the preferred makes list enclosed. The rating of the contactors shall be suitable for Crane duty application as per IS: 3177 – 1999. All other switchgear items also shall be of from the preferred makes list enclosed.		
13	All the power and auxiliary contactors, individual overload relays, timers etc., shall be mounted in a panel fabricated from sheet steel of 14 gauge material. The control panel shall be dust and vermin proof and with good finishing.		
14	All the components are to be mounted on a U shaped mounting channel fabricated out of 12 SWG CR sheet, zinc plated and passivated.		
15	All the contactors, timers, I/O relays etc., shall be mounted securely in a vertical arrangement with due consideration to the vibration encountered in the operation of the crane. The bottom row of equipment mounted inside the panel excepting terminals blocks shall be at least 300 mm above the bottom cover of the panel to facilitate inspection and repair works. The terminal blocks shall be mounted 200mm above the bottom cover of the panel.		
16	The dimensions of the panels shall be as follows a. The height of the panel shall not exceed 1500 mm and the depth of the panel 500 mm. b. The length of the panel shall be as per requirement c. The panels shall be provided with stands fabricated from suitable MS angular of 50 mm x 50 mm x 6 mm (Height of stand should be 400 mm)		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**ANNEXURE C5**

**Vendor should fill up the following form:**

<b>S/No</b>	<b>BHPV Specification</b>	<b>Supplier Offer</b>	<b>Remarks</b>
17	The panel shall be well braced to the Crane structure and shall be provided with two eye bolts for lifting the panel		
18	Each door of the panel shall be provided with locking facility (slotted clit and moving flanker)		
19	One extra C – Channel is to be fixed in the panel and 10 Nos. of 10 Sq. mm connectors are to be mounted on the channel for RRC system installation purpose. Type 10 Sq.mm terminals are to be used for control circuits. 30% spare connectors are to be provided in the panel.		
20	All the power circuit connectors shall be of as per preferred list of bus bar type connectors.		
21	Four sets of Block diagrams, Circuit diagrams, electrical drawings for each panel shall be provided		
22	Arrangements of terminal blocks inside the panel shall be in an approved manner with consideration to the vibrations encountered in operation of the crane. The terminal blocks shall be so located that the chances of flash over between live terminals are minimized due to falling and accumulation of conducting dust on the terminals. The terminal blocks shall be fitted in such a way that there is adequate clearance between the bottom most row of equipment and the terminal blocks.		
23	Terminal strip shall be fixed inside the panel preferably in a horizontal alignment leaving enough space underneath the panel for termination of cables in a convenient manner. A minimum clearance of 200 mm shall be provided between the terminal blocks and floor of the panel to facilitate entry of incoming cables.		
24	Power and control cables shall be segregated. Power terminal blocks shall be separated from each other by means of insulated terminal spacers. All power cables shall be of a minimum size of 6 Sq.mm or above (as required) and control cables of a minimum size of 1.5 Sq.mm. Both power and control cables shall be of copper conductors and multi stranded (Class 5 as per IS694) Single strand wires shall not be used for wiring.		
25	All the equipment and power / control terminals / cables shall have proper identification. All the wires shall be numbered with proper size ferrules.		

**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**ANNEXURE C5**

**Vendor should fill up the following form:**

<b>SINo</b>	<b>BHPV Specification</b>	<b>Supplier Offer</b>	<b>Remarks</b>
26	Degree of protection of panels shall be IP 54 as per IS: 2147		
27	A suitable pocket of sheet steel is to be fabricated on the inside of the panel door to keep a set of electrical circuit drawings.		
28	One set of Electrical drawings of the panels are to be sent to BHPV for approval before commencement of production. Three sets of approved drawings are to be supplied along with the panels		
29	Test certificates to be given for all bought out items wherever applicable		
30	The bought out items shall be as per the list enclosed		
31	The panel doors are to be fixed with labels made from aluminum foil on the front side indicating the type of circuit (MH or AH or CT etc)		
32	The existing cable reeling system for CT is to be removed and cable drag chain system of the make specified in the list is to be provided.		
33	3 Nos of 60T EOT cranes are with CT in drum control. These cranes have to be converted to Master control.		
34	One main contactor(Master contactor) is to be provided in all cranes with MCCB and incoming isolator(Specification – MCCB with adjustable thermal – magnetic trip unit(overload & short circuit) Auxiliary contact(1 NO + 1NC), 3 pole 500V. Zero interlocks of master controllers and rotary limit switches to be incorporated with main contactor.		
35	Master contactor and MCCB of 315A for EOT and Gantry Cranes have to be provided in the protective panels.		
36	Individual isolators for each crane are to be mounted on the girder of the crane with ratings mentioned above. Isolator(Iron clad triple pole isolator switch without fuses and of load isolating type)		
37	Individual MCCB protection for all motions of all the cranes.		
38	Fault indications and reset facility is to be provided in the respective control panels on the crane for each motion(MH,AH,LT,CT).		
39	All master controllers should be dead man handle type and spring returned to zero position.		

**ANNEXURE C6**

**THE LIST OF SUPPLIERS FOR BOUGHT OUT ITEMS**

<b>Sl.No</b>	<b>ITEM</b>	<b>MAKE</b>	<b>OTHER DETAILS</b>
1	Bearings	SKF / FAG / Timken / RHP	
2	Cables	Lapp / Igus / Thermo cables / Finolex / Radiant cables / Universal / Mansfield	PVC cables with copper conductors only, Flex CL5 as per IS 694
3	Connectors	Elmex / Wago	
4	Contactors	Siemens/Schneider/BCH	
5	Master Controller	Siemens / SOC / WMI / EMM / Omega	
6	Fuse / Fuse holders	English Electric / Siemens/ Schneider	
7	Isolators, Isolators Switches	Siemens / English Electric	
8	Limit Switches	Siemens / SOC / OMEGA	IP54 or better
9	MCB,MCCB	Siemens / Schneider/BCH	
10	Overload relay (Electrical)	Siemens/ Schneider/English Electric/BCH	
11	Couplings	Hi-Cliff / WMI / OEM	
12	EH thrusters and brake units	SOC / WMI / OMEGA / SNS	IP54 or better
13	Panels	Siemens/Godavari Electricals/SNT controls/Shivpra Cranes/Original equipment manufacturer	Should be made from 18 G sheet steel, Powder coated and should be provided with panel locking facility.
14	Pendent pushbutton station	BCH/Schneider/L&T	With colour coded pushbuttons and name plates (14 push button station) and one mushroom type latching emergency stop push button
15	Pneumatic timers	Bharatia Cutler Hammer/Havells/Siemens	
16	Push Buttons	SIEMENS/L&T/BCH/Schneider	
17	Radio Remote Control	Stromag / SNT/Lotus Wireless	4-0-4 step operation, Hand held push button type with rechargeable batteries and battery charger
18	Resistance Box	BCH / SOC / WMI / OMEGA	IP11 or better. Plate type resistance units or punched steel type . Vendor to specify

**SPECIFICATIONS OF CABLES**

1. THE ARMOURED CABLES SHALL BE PVC INSULATED, SHEATHED AND WEATHER PROOF AS PER IS 1554 PART-I, WITH FLEXIBILITY CLASS 5
  
2. THE UN – ARMOURED CABLES SHALL BE PVC INSULATED, SHEATHED AND WEATHER PROOF AS PER IS 694, WITH FLEXIBILITY CLASS 5
  
3. THE CABLES SUPPLIED SHALL BE AS PER THOSE SPECIFIED IN THE LIST OF BOUGHT ITEMS.

NO OTHER MAKES SHALL BE ACCEPTED

**Specifications of Master controllers**

**1. 4 – 0 – 4 Speed steps**

2. Body : Aluminum die cast & powder coated body
3. Contact tips : Silver Cadmium
4. Contact rating : 40 A
5. Insulation voltage : 500 V AC
6. Frequency of operation : 1000 operations per hour
7. Cams : Should be made of Delrin Acetol material for long life
8. Mounting position : Horizontal
9. Cable Entry : Two holes of suitable diameter to be provided
10. Protection : IP 54 (Copy of test certificate to be furnished along with Offer)
11. No. of steps : 4 speed steps plus one zero position
12. The number of speed steps should be engraved on the body of the master controller
13. Shaft should be provided for cams & ratchet wheel to avoid any slippage in long run
14. The cams shall be individual screw type and removable
15. The hub should be provided of square hole for firm grip & proper operation.
16. The notch marking are firm engraved or aluminum anodized
17. All components provide should be passivated.
18. Master controllers complete should be powder coated Siemens Grey Colour.

**SPECIFICATIONS FOR RADIO REMOTE CONTROL:**

- 1.0 Radio Remote Control with min 12 nos of Push Buttons conforming to IS: 3177 for 4 Motion EOT Crane along with the following features should be provided. Required for four Motion EOT Crane with Main/Creep Speed in One/All Motions with locking arrangement. 1<sup>st</sup> speed should be achieved by pressing motion/direction button and 2<sup>nd</sup> or 3<sup>rd</sup> speed steps by pressing button nos. 2 or 3 while keeping the motion/direction button pressed. It may be noted that button nos. 2 & 3 are common for all motions. Two motions can be operated simultaneously only on 1<sup>st</sup> step.
- 2.0 Technical Requirement:
  - 2.1 The transmitter should be hand held Push Button type.

<b>FUNCTIONS:</b>	
Main Power	Start/Stop
Main line contactor	ON
Main Hoist	Up/down(3 steps)
Aux. Hoist	Up/down(3 steps)
Cross travel	Left/Right(3 steps)
Long Travel	Forward/Reverse(3 steps)
Alarm/Hooter	Required
Emergency stop	Required
Under bridge light	Required
Main/Micro speed selection	Required
Or increment/decrement in speed	Required
Lock/key for functioning of remote	Required

- 2.2 The Crane shall be operated from either the master controller or radio remote control unit. Selection between the master controller and the RRC unit shall be by means of a rotary selector switch, placed in the cabin. Three Speed settings are required.
- 2.3 An antenna and receiver on the bridge, and an intermediate relay panel on the bridge to amplify the signals for the crane contactors.
- 2.4 Operating range should be 100 meters approx. or more for Radio Remote.
- 2.5 Isolation transformer and surge suppressor for the receiver supply to be provided.
- 2.6 The wiring should be connected to terminals/ equipment with proper size copper cable, wire lugs.
- 2.7 Supplier must give circuit diagrams of the entire RRC. All panel wires, cables should be ferruled, numbered and the same should appear on electrical drawings.
- 2.8 Three sets of long life rechargeable Nickel Cadmium batteries for the transmitter along with battery charger are to be supplied.

2.9 Any interface, arrangement required for installation of the same shall be in the scope of supplier.

2.9.1 Common push button for horn and start.

2.9.2 Emergency Mushroom type PB with lock and Key on top panel of RRC Transmitter, 4 line LCD display for battery status, RRC fault, RF field strength etc.

2.9.3 Insulation Class: Protection IP 65 for transmitter and receiver. Baud Rate: 1200 baud or more.

2.9.4 International Safety and quality standards IEC801-1,2,3,4 IEC 68 2 1,2,3,6 etc

2.9.5 Operating Channel display on Transmitter.

3.0 Supplier should obtain frequency allocation letter for the RRC system from the Dept. of Telecommunication, Govt. of India, New Delhi on behalf of BHPV Visakhapatnam free of cost. For this purpose frequency allocation forms should be sent to BHPV Visakhapatnam after receipt of the purchase order for filling. These forms along with an authority letter from the Factory Manager shall be sent back to the supplier for further necessary action. After the system is dispatched, necessary operating license/permission for the RRC system on the crane should be arranged by the supplier from statutory bodies as per the details given in the frequency allocation letter. License fee, if any, should be borne by the supplier for the first time on behalf of BHPV Visakhapatnam.

3.1 Supply, installation and satisfactory testing on all the cranes.

3.2 Two sets of Operation & maintenance manuals, safety provisions, photographs, schematic diagrams and details of PCBs etc should be provided. A set of CDs containing the documents/information recorded on it should also be provided.

3.3 Warranty shall be 12 months from the date of completion of Reconditioning, Commissioning and performance prove out.



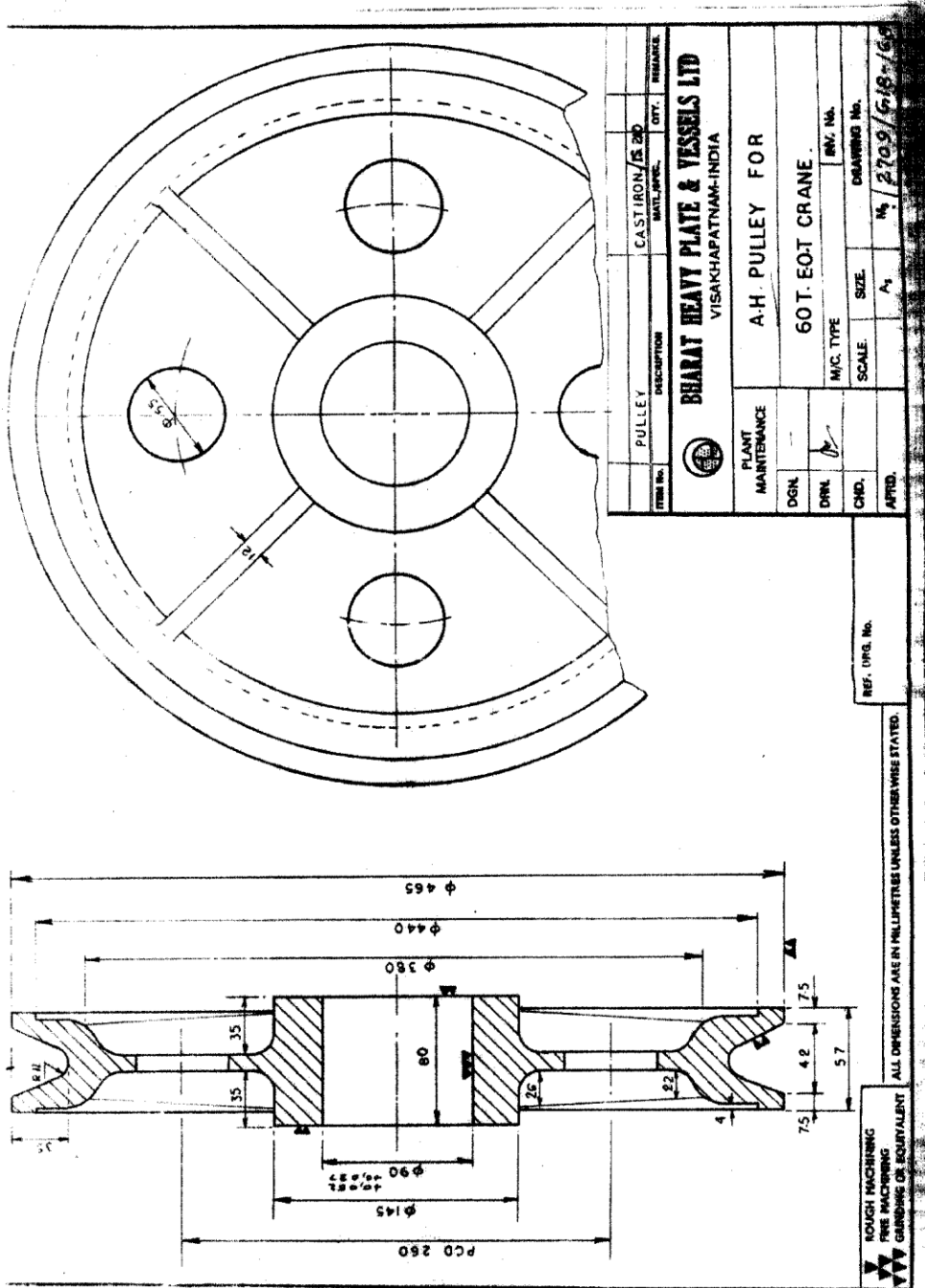


SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES

SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GRIDER EOT CRANES

**60 T EOT Cranes**

4. Auxiliary hoist snatch block pulley as per drawing (Drg. No. M3-2709-G18-168) – 4 Nos.

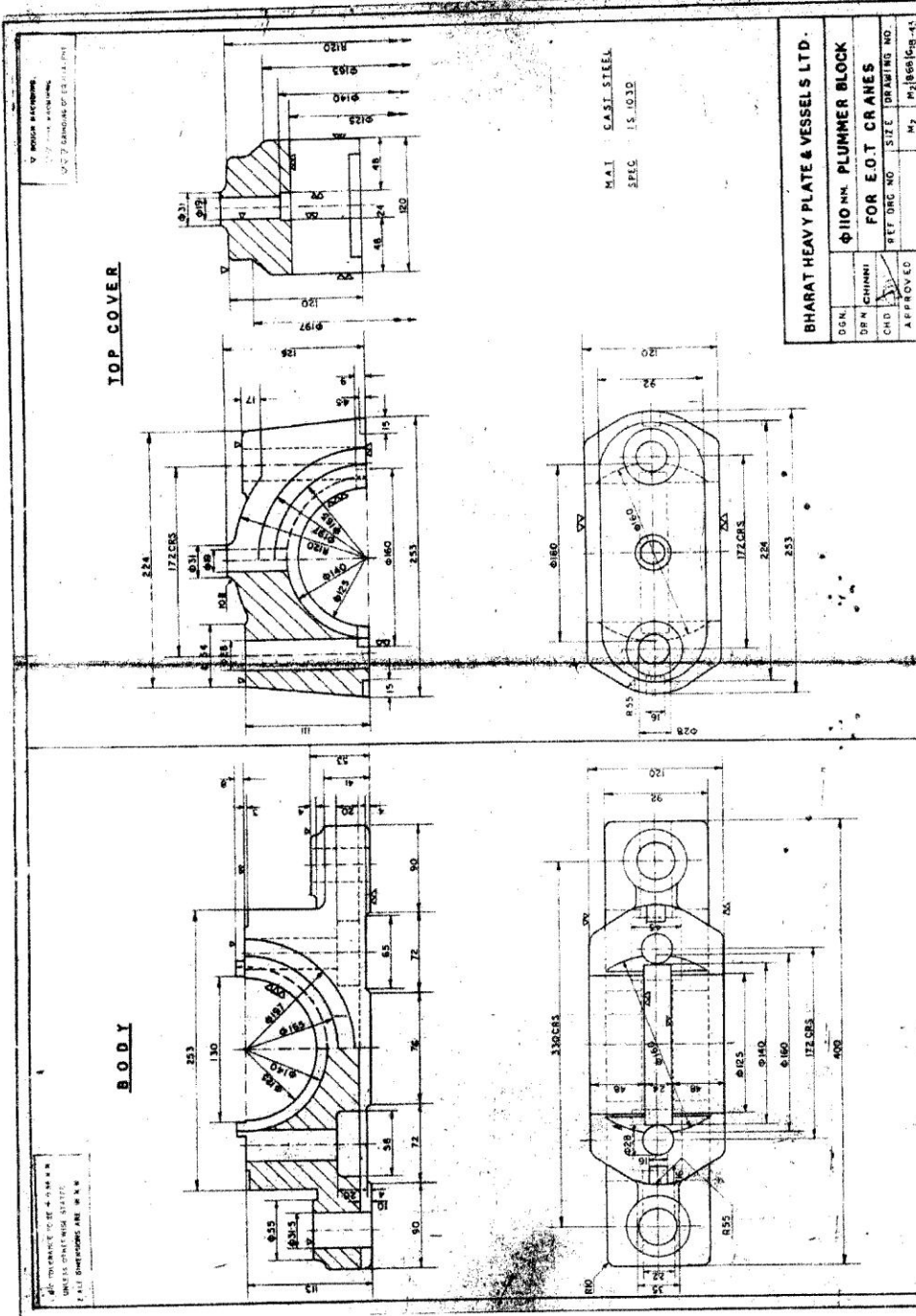


SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES

SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GRIDER EOT CRANES

**60 T EOT Cranes**

5. Plumber block (110 dia) as per drawing (Drg. No. M2-868-G18-43) – 6 Nos.

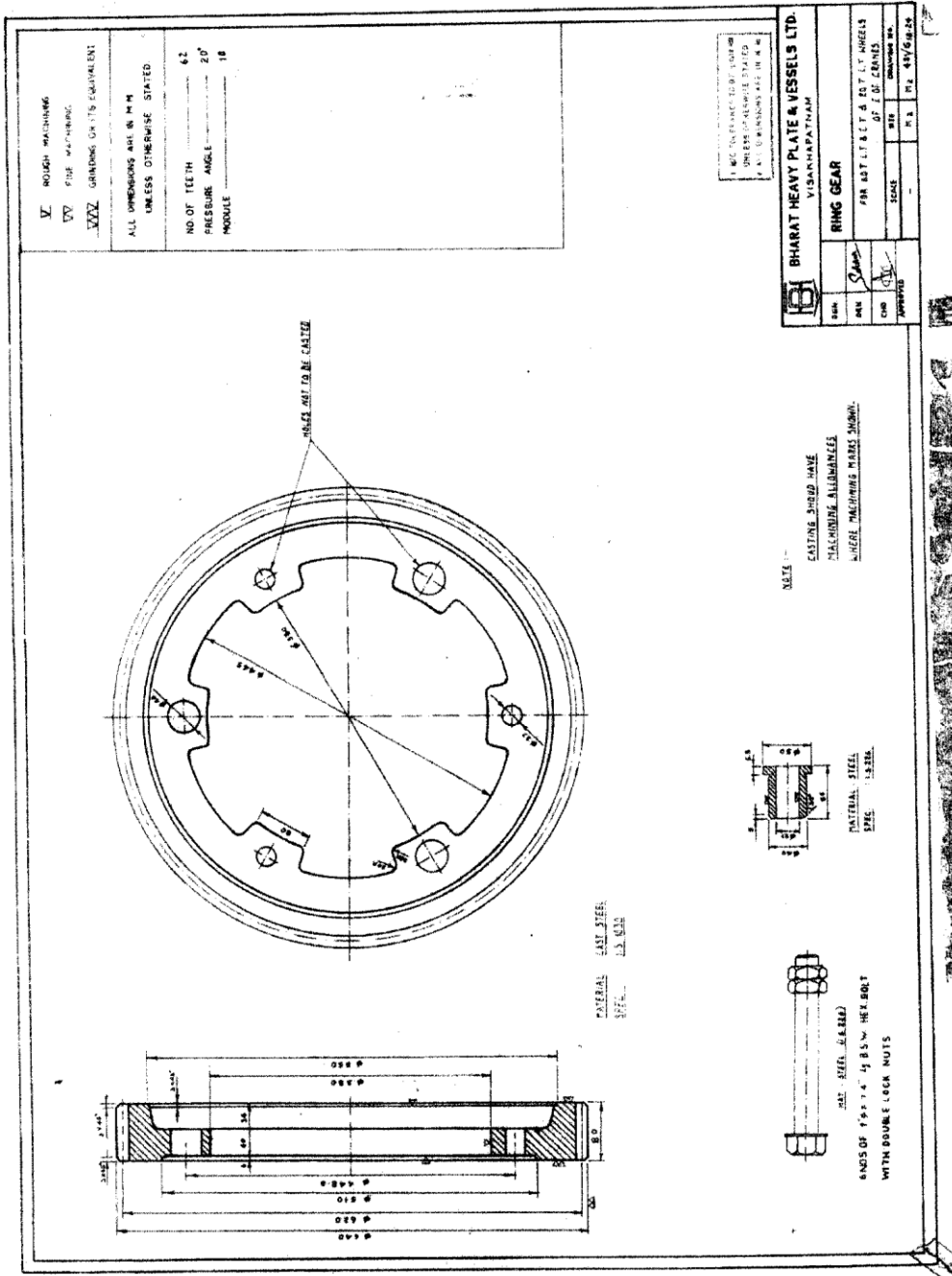


SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES

SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GRIDER EOT CRANES

**60 T EOT Cranes**

6. Ring gear for CT & LT as per drawing (Drg. No. M2-491-G18-24) – 4 Nos.



**SPECIFICATION FOR 40/10 T AND 60/10 TON DOUBLE GIRDER EOT CRANES**

**LIST OF 2 YEARS OPERATIONAL SPARES – 40T (1 No)/60T(4 Nos) EOT CRANES.**

SNO	ITEM	40T	60T
		QTY	QTY
1.	Contactors one no each rating	1 Set	1 Set
2.	Over load relays one set each rating	1 Set	1 Set
3.	CT Limit switches	1 Set	1 set
4.	LT Limit switches	1 Set	1 set
5.	Auxiliary relay	1 No	1 No
6.	On delay timer	1 No	1 No
7.	MPCB for MH Motor	1 Set	1 set
8.	MPCB for AH Motor	1 Set	1 set
9.	Limit switches for MH,AH	1 set	1 set
10.	Push buttons 1 no each color	1 set	1 set
11.	Master controller for MH,AH, CT&LT	1 set (4 Nos)	1 set (4 nos)
12.	Indication lamps	1 set	1 set
13.	Resistance boxes for MH,AH, CT&LT	1 set (4 Nos)	1 set (4 nos)
14.	Input pinion shaft for all gear boxes	1 set	1 set
15.	Oil seals & gaskets for all gear boxes	1 set	1 set
16.	Brake shoe with lining rivits – one set for each brake for MH,AH, CT&LT	1 set (4 Nos)	1 set (4 nos)
17.	Brake springs – one set for each brake	1 set	1 set
18.	LT drive wheel assembly complete	1 No	1 No
19.	Thruster brakes for MH,AH,CT&LT	1 set (4 Nos)	1 set (4 nos)
20.	Complete Radio Remote control unit	1 set	1 set
21.	Spare batteries for Radio Remote Control	2 sets	2 sets

**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 90% payment (90% of basic price + 100% Taxes) will be made within 45 days of receipt of material and balance 10% will be made after acceptance of material/commissioning of the equipment at BHPV, Visakhapatnam and on submission of Performance Bank Guarantee.
- 5.7.2 **Foreign Bidders**  
An Irrevocable letter of Credit shall be established for 80% of FOB/FCA/CFR/ (excluding Indian Agent's commission) 2 months prior to shipment and valid for 3 months for negotiation against shipment Letter of Credit shall be opened through a branch of State Bank of India in the country where order shall be placed. In case, in the country where order is placed, State Bank of India is not there, Letter of Credit will be confirmed by foreign banker. 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.
- 5.7.3 **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 + 2%, which shall be computed for the differential period between BHPV terms of payment and the offered basic price.
- 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 &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
P & F and Freight	
Insurance	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – <b>please Specify</b> )	
Sales Tax ( <b>please Specify</b> )	
Excise Duty ( <b>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%).	
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. 5.7.1)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 ( <b>Offers from vendors not accepting to submit CEBG will be rejected</b> )	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 ( <b>Offers from vendors not accepting to submit PBG will be rejected</b> )	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). <b>(Offers from vendors not accepting to the 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> )	
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>	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	
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> )	
Sales Tax ( <b>please Specify</b> )	
Excise Tax ( <b>please Specify</b> )	
Delivery period from the date of Letter of Intent ( <b>please Specify</b> )	
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)	Acceptable / Not acceptable
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 ( <b>Offers from vendors not accepting to submit CEBG will be rejected</b> )	Yes / No
Performance Bank Guarantee (PBG) as per Clause 5.11 ( <b>Offers from vendors not accepting to submit PBG will be rejected</b> )	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). ( <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> )	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature &amp; Office Seal of the bidder