

No. AIX/OT/20160689

Date: 24.03.2017

**Subject: Open tender as detailed below:**

**OPEN TENDER**

1. Sealed tenders with the Tender No. and opening date clearly superscribed on the cover are invited for the following job.

| Sl. No. | Tender No.                  | Description of Equipment                            | Qty. (No.)   | Opening date |
|---------|-----------------------------|---|--|--------------|
| 1.      | <b>X/6450/2016/0689/Y/1</b> | MACHINING OF TEMPLATES & GAUGES WITH BHEL MATERIALS | 5 COMPONENTS OF 2 NOS. QTY. EACH AS PER ANNEXURE-G | 15.04.2017   |

2. Last date for obtaining tender documents and opening of tenders is indicated against the tender. Quotations will be received up to 1.45 P.M. on opening date (15.04.2017) and opened on the same day at 2.00 P.M. in the Tender Room. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.**

3. BHEL will not be responsible for any type of postal delay / incomplete information from vendor.

5. Other terms and conditions will be as per tender documents.

- Guarantee Certificate required.
- Pre-Qualifying Conditions (As per Annexure-A) to be filled up.
- For details regarding drawing of Templates are enclosed herewith (Annexure-H)
- Modvat as applicable.
- Material Specification as per HW10892 (T90MN6WCR2/OHNS, HARDNESS 50-55 HRC).
- Acceptance shall be done after inspection at BHEL Haridwar.
- Delivery Schedule: Within 30 days of receipt of materials from BHEL.
- Materials shall be collected by vendor from BHEL Haridwar and deliver back at its own cost.
- Delivery of finished components will be full responsibility of vendor. BHEL will not be responsible for any financial or any other implication. Freight, Insurance and other charges shall be borne by vendor.

**B. K. Sharma**  
**Sr. Manager (AIX-T)**

**BHARAT HEAVY ELECTRICALS LIMITED**  
**HEEP: HARDWAR-249 403 (UA)**  
**Fax: 0091 01334-226462, Phone: 0091 01334-285310 / 284566**  
**E-mail: [bksharma@bhelhwr.co.in](mailto:bksharma@bhelhwr.co.in), [parvind@bhelhwr.co.in](mailto:parvind@bhelhwr.co.in), [subhra@bhelhwr.co.in](mailto:subhra@bhelhwr.co.in)**

**Enquiry No.: X/6450/2016/0689/Y/1**

**Date of issue : 24.03.2017**  
**Due Date : 15.04.2017**

Sub: Tender Enquiry No. X/6450/2016/0689/Y/1

We are pleased to invite your offer in **TWO PARTS (PART-I & PART-II)** strictly as per enclosed terms and conditions and “Instruction to Bidders”, in sealed covers for the below mentioned job.

| Description of Sub-Contract Work                   | Qty. (Nos.)  | Delivery Required                                | EMD (Earnest Money Deposit) |
|--|--|--|-----------------------------|
| MACHINING OF TEMPLATES & GAUGES WITH BHEL MATERIAL | 5 COMPONENTS OF 2 NOS. QTY. EACH AS PER ANNEXURE-G | WITHIN 30 DAYS OF RECEIPT OF MATERIALS FROM BHEL | NIL                         |

Please submit your lowest quotation / offer for the above requirement subject to our terms and conditions.

The date for opening shall be 15.04.2017. Tenders will be received up to 1.45 PM on 15.04.2017 and opened on the same day at 2.00 PM in the Tender Room. Please note that tender received after due date & time (1.45 PM on 15.04.2017) will not be entertained or opened. BHEL will not be responsible for any type of postal / courier delay.

Any clarification, if required can be asked for through e-mail [bksharma@bhelhwr.co.in](mailto:bksharma@bhelhwr.co.in) / [parvind@bhelhwr.co.in](mailto:parvind@bhelhwr.co.in) / [subhra@bhelhwr.co.in](mailto:subhra@bhelhwr.co.in) before tender opening. Vendors are welcome to have pre-bid meeting with BHEL engineers for better understanding our requirements. Amendments/corrigendum, if any, will be hosted on our website only. Other terms and conditions will be as per tender documents.

**The quantity may undergo change at the time of ordering.**

**NOTE: The vendors should submit their best price at this stage itself and they will not be allowed to revise the price. Any revision / discount given by vendor subsequently will be ignored.**

KINDLY READ “INSTRUCTION TO BIDDERS” THOROUGHLY. QUOTATION NOT IN ACCORDANCE WITH THE ABOVE INSTRUCTION ARE LIABLE TO BE DISQUALIFIED AND IGNORED

For & ON BEHALF OF BHEL, HARDWAR

**Sr. Manager (AIX-T)**

## **Instruction to Bidders**

### **Clause 1.0 – Tender submission**

The tenders have to be submitted in **TWO PARTS (Envelopes)** as described below on or before the due date and time of tender opening:

- a) Part-I (Envelope I) : 1. Valid MSE certificate applicable for Micro and small Enterprises, as mentioned below.

MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (format enclosed where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above stated documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted Officer.

2. Pre-Qualifying Requirement (PQR) duly filled.
3. Techno-Commercial Bid. General Terms and Conditions as per Annexure-B should be filled up by vendor and submitted along with techno-commercial bid.

- b) Part-II (Envelope II) : Price Bid.

➤ Any corrections / amendments shall be properly & fully authenticated with signature.

Procurement directly from the manufacturers / suppliers shall be preferred. However, if OEM / Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer / supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer / supplier or the manufacturer / supplier could bid directly but not both. In case bids are received from both, the manufacturer / supplier and the agent, bid received from the agent shall be ignored.

The bidders (original manufacturers) will have to submit ink-signed offer / bid in original directly to BHEL. In case the bid is submitted by FAX / email, the bidders shall simultaneously ensure submission of ink-signed original bid to BHEL also in the manner prescribed in the tender. Each page of quotation should be signed and stamped by authorized representative of vendor, else the offer is liable to be rejected. However, in case of e-tender ink signed offer is not required. **Unsigned bids are liable to be ignored.**

The suppliers or their authorized person may be allowed to attend the tender opening, if duly authorized by their principals, through a specific letter for a particular enquiry for specific price bid opening on that particular day. General authorization letter is not acceptable. However, in case of e-tender, vendor should see the tenders of others on the opening date only. Thereafter, the respective window will get closed.

### **Clause 1.1**

The Techno-commercial offer and PQR in envelope - I (Part-I) shall comprise of following:

- i) Point wise reply to all the points mentioned in Pre- Qualifying Conditions specified in the tender.
- ii) Relevant documents as requested in Pre-Qualifying Requirement must be attached.
- iii) Complete Technical offer.

- iv) Catalogue of the Company, Complete reference of the past experience of the same or similar type of job giving details of customer with Name of the contact person, Fax no, phone no, E-mail if available.
- v) Acceptance of commercial terms by vendor as per **Annexure-B**.
- vi) Deviation with reference to specification to be laid down on separate sheet.  
Cost of deviation is to be submitted along with the price bid essentially. In case vendor withdraws the deviation clauses the same will be considered for final evaluation.
- vii) Copy of Price Bid (without prices).
- viii) The rating of the company quoting for this tender from a third party (independent agency). **Compliance of this clause is mandatory in case of foreign supplier. Indigenous suppliers to submit the copy of balance sheets for last three years** in absence of third agency report.
- x) Any additional documents (please specify).

## **Clause 1.2**

The Price Bid in envelope - II (Part-II) shall comprise of following:

- i) The price Bid (with price) for the complete scope.

If price bid is not submitted along with Part-I bid, the offer will be rejected out rightly.

### **Note :**

- a) Prices are to be indicated in both figures and words. In case of any discrepancy of value the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) **The evaluation of tender shall be on the basis of “Total Landed cost at Destination”. For evaluation of foreign bids, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid opening) shall be considered. If the relevant day happens to be a bank holiday, then the Forex rate as on the previous bank (SBI) working day shall be taken.**
- c) Prices should be quoted on F.O.R. Destination basis. Transit insurance shall be arranged by vendor and not to be included in the prices. The offers quoted on other than F.O.R destination basis may result in non consideration of such bids. In case BHEL accepts the EX-Works prices such offers will be loaded with actual freight charges as per BHEL freight rate contract whichever is higher.
- d) Applicable sales Tax, Excise duty, Service tax, educational cess and any other statutory levy should be indicated separately and clearly in the quotation.
- e) Prices quoted should not be more than the prices quoted to any other BHEL units/offices/divisions.
- f) Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.

## **Clause 2.0 – Tender Opening :**

- a) Offer should be complete in all respect (i.e. Part-I & Part-II) as described below:

Part I : Part I bid (Envelope-I) comprising MSE Certificate (along with CA certificate if applicable), duly filled Pre- Qualifying Requirement (PQR), Techno-commercial bid.

Part II : Part II bid (Envelop-II) comprising Price Bid.

- b) The tenders shall be opened in **TWO PARTS (Part-I & Part-II)** as described below:

- Part-I containing MSE Certificate towards exemption of EMD, duly filled Pre- Qualifying Requirement (PQR), Techno-commercial bid will be opened on the date and time specified in the tender cover page, in the presence of those vendors, who wish to attend the tender opening.

- Part II containing Price Bid will be opened on a separate date for those vendors who have qualified in the Part I. The opening date of Part II will be intimated in advance to the vendors qualified in part-I.
- In the event of BHEL calling for supplementary bid, the part-II price Bid along with supplementary priced bid (if necessary) will be opened at a later date of only those bidders who have qualified in the Part I. The opening date of Part II along with supplementary price bid (if necessary) will be intimated in advance to the vendors qualified in part-I.

**BHEL reserves the right to evaluate vendor's process capability / quality systems etc. by visiting vendor's works (if required)**

**Clause 3.0 – Superscription on envelopes:**

The following shall be super-scribed on the envelopes:

**PART-I**

1. TENDER NO.
2. DUE DATE FOR OPENING
3. “TECHNO-COMMERCIAL BID”.

**PART-II**

1. TENDER NO.
2. DUE DATE FOR OPENING OF PART-I.
3. “PRICE BID”.

**Clause 3.1 :**

The part-I & part-II shall be individually sealed and super-scribed as indicated above and shall be enclosed further in one single envelop duly sealed and super scribed as:

“TENDER FOR (ITEM NAME) AGAINST TENDER NO.----- DUE ON -----  
 -----CONTAINING PART-I & PART-II OF THIS OFFER.” Vendor's full name and address should be clearly mentioned on the envelope and shall be addressed to:

To,

Head of Materials Management,  
 Heavy Electrical Equipment Plant,  
 BHEL, Ranipur.  
 Haridwar- 249403

**Clause 3.2:**

Envelopes not marked as above are liable to be ignored and will not be opened.

**Clause No. 4:**

**As per directives of CENTRAL VIGILANCE COMMISSION, GOVERNMENT OF INDIA, one agent can not represent two or more suppliers or quote on their behalf in a particular tender. If so found at any stage, BHEL Hardwar is likely to cancel Enquiries / POs to such suppliers. Further, such Indian Agent is likely to be de-listed (Black listed for business from BHEL)**

**Clause No. 5:**

**The offers of the bidders who are on the banned list and also the offer of the bidders, who engage the services of the banned firm, shall be rejected. The list of banned firms is available on BHEL website [www.bhel.com](http://www.bhel.com)**

Essential conditions:

1. BHEL reserves the right to open the price bid (part-II) along with the opening of techno-commercial offer at its option and in that case vendor will be informed accordingly.
2. BHEL reserves the right to go for reverse auction. Vendors are requested to give their best price. In case of failure of reverse auction the paper bid shall be processed. Bidder should clearly indicate their acceptance for reverse auctioning in Annexure-B. The bids of those vendor who do not agree for reverse auction may not be considered. Terms and conditions of Reverse Auctioning are as per Annexure-E.

For & on behalf of BHEL, Hardwar.

**B. K. Sharma**  
**Sr. Manager (AIX-T)**

**ANNEXURE – B: - ACCEPTANCE OF TECHNICAL & COMMERCIAL TERMS BY VENDOR**

| <b>BHEL Standard Terms</b>  | <b>Vendor's Acceptance</b> |
|---|----------------------------|
| <b>1. Scope of Work:</b><br>Machining of Templates as in enquiry shall be done by vendor with BHEL materials.   |                            |
| <b>2. Payment terms:</b><br>90% payment will be done after receipt and acceptance of components in HEEP, BHEL, Haridwar and balance 10% payment will be done after final accountal of materials.  |                            |
| <b>3. Submission of Bank Guarantee &amp; Indemnity bond:</b><br>All bank guarantees should be from one of the Indian branch of BHEL consortium banks ( <b>Annexure-C</b> ) and the bank guarantees/indemnity bonds should be in the format as prescribed by BHEL ( <b>annexure-D</b> ). The performance bank guarantee as well as the list of consortium banks is displayed at BHEL web-site <a href="http://www.bhelhwr.co.in">www.bhelhwr.co.in</a> also. However, in case the bank guarantee is not from Indian branch of BHEL consortium banks, then the vendor has to confirm bank guarantee on any Indian branch of consortium bank and all the bank charges are to be borne by the bidder.<br><br>Bank Guarantee (BG) of minimum value Rs. 2000.00 in BHEL prescribed format from any of the Indian branch of consortium bank of BHEL or from a reputed bank and confirmed by any Indian branch of Consortium banks of BHEL and Indemnity Bond of minimum value Rs. 5000.00 should be submitted after placement of P.O. Without submission of Bank Guarantee & Indemnity Bond, materials shall not be handed over to vendor. |                            |
| <b>4. CURRENCY OF PAYMENT:</b> Indian Rupees  |                            |
| <b>5. TAXES :</b><br>All statutory taxes, if any, will be deducted at source & to be borne by the beneficiary. Tax deduction certificate shall be issued at the end of financial year if required.<br><br>Quantum of TDS will be as per prevailing rates based on Availability / Non-availability of PAN. At present TDS rate without PAN is 20% and with PAN as per DTAA with the particular country.  |                            |
| <b>6. Excise Duty:</b><br>Not applicable being materials provided by BHEL.  |                            |
| <b>7. Sales Tax / VAT:</b> Not applicable being materials provided by BHEL.   |                            |
| <b>8. Service Tax:</b> As applicable (shall be paid against submission of service tax deposit certificate and receipt along with invoice).  |                            |

| BHEL Standard Terms  | Vendor's Acceptance |
|--|---------------------|
| <p><b>9. ORDER ACCEPTANCE:</b> Order acceptance (ink-signed) along with Contract Execution Bank Guarantee must be submitted within 30 days from the date of PO.</p>  |                     |
| <p><b>10. Late delivery penalty Clause:</b> Penalty on delay in 'Supply' will be applicable to the delays attributed to vendor. The rate of penalty for delayed Supply shall be @ 0.5% per week of delay of total PO value in supply subject to a maximum of 10% of total PO value.</p> <p>In case of delivery FOR Destination, Date of receipt at BHEL Hardwar (if supply is direct to BHEL) or date of GR + one week (if documents are through bank)</p> |                     |



| BHEL Standard Terms   | Vendor's Acceptance |
|---|---------------------|
| <b>11. Transportation:</b><br>Materials shall be collected from BHEL Haridwar and delivered to BHEL Haridwar by vendor itself at its own cost & responsibility. BHEL shall not be charged & responsible for material transportation.  |                     |
| <b>12. Delivery Period:</b> Within 30 days of receipt of materials from BHEL Haridwar.  |                     |
| <b>13. Delivery basis :</b><br>Delivery must essentially be FOR BHEL Haridwar basis. Freight, Insurance and other charges for supplying components to BHEL Haridwar shall be borne by vendor.   |                     |
| <b>14. Settlement of Disputes:</b><br><br><ul style="list-style-type: none"> <li>If any dispute, controversy or claim arising out of, relating to, or in connection with, this contract, or the breach, termination or validity thereof, arises, both parties hereto shall endeavor to settle such dispute amicably. Should this attempt fail, the disputes between the parties shall be resolved through arbitration in accordance with the Arbitration and Conciliation Act, 1996. The attempt to bring about an amicable settlement is considered to have failed as soon as one of the parties hereto, after reasonable attempts (which attempt shall continue for not less than 30 days); give 30 days' notice, in writing, invoking arbitration and calling upon the other party to constitute the tribunal as provided.</li> </ul> <p>All or any such disputes or differences arising between the parties to this contract shall be referred to an Arbitral Tribunal consisting of three arbitrators. Both the parties shall appoint one arbitrator each and the arbitrators appointed so by the parties shall appoint a presiding arbitrator.</p> <ul style="list-style-type: none"> <li>The venue of arbitration shall be Haridwar Courts, which will have exclusive jurisdiction.</li> </ul> |                     |
| <b>15. Inspection:</b><br>Finished items will be inspected at BHEL Haridwar and acceptance will be given after inspection.  |                     |
| <b>16. Guarantee Certificate:</b><br>Vendor should submit Guarantee Certificate along with each supply of components.   |                     |
| <b>17. Attending to any complaint during guarantee period :</b><br>For any type of complaint (such as poor quality of machining/assembly, poor performance etc.), vendor has to rectify the job without any financial implication (free of cost).   |                     |

| BHEL Standard Terms  | Vendor's Acceptance |
|--|---------------------|
| <b>18.</b> Details of Contact person Name, Designation, Department complete postal, E-mail address & Fax no, phone, Mobile no. to be mentioned.  |                     |
| <b>19. Validity:</b><br>Validity of the offer should be minimum 120 days from tender opening date.   |                     |
| <b>20. Bank Charges:</b><br>Bank Charges on either side. Or your prices will be loaded suitably.   |                     |
| <b>21. Participation in Reverse Auction:</b> BHEL may decide to process the case through RA (As per Annexure-E attached). Vendors to give their confirmation for participation in Reverse Auction process.   |                     |
| <b>22. Beneficiary of PO: Please confirm the beneficiary of PO along with the complete address (In case of unregistered vendor only)</b>   |                     |
| <p><b>23. Risk Purchase Clause:</b> In case of delays in supplies / defective supplies or non-fulfillment of any other terms and conditions given in the Purchase Order the purchaser may cancel the purchase order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier.</p> <p>In case vendor does not agree to above risk purchase clause, their offer is liable to be rejected. In case any vendor accepts risk purchase clause initially and subsequently declines to honour the term in the eventuality of RISK PURCHASE, they may be banned for business with BHEL.</p>  |                     |
| <p><b>24. Force Majeure Clause:</b></p> <p>a) Either party shall be entitled to suspend performance of his obligations under the contract to the extent that such performance is impeded or made unreasonably onerous by any of the following circumstances: fire, war, flood, riots, earthquake etc.</p> <p>b) The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances. If force majeure prevents the purchaser from fulfilling his obligations, he shall not be forced to compensate the contractor for expenses.</p> <p>c) Regardless of what might otherwise follow from these general conditions, either party shall be entitled to terminate the contract by notice in writing to the other party if performance of the contract remains</p> |                     |

| BHEL Standard Terms   | Vendor's Acceptance |
|---|---------------------|
| <p>suspended under Clause Force Majeure for more than 6 months.</p> <p>d. Evidence for this would be “Force Majeure” certificate issued by chamber of commerce of the concerned country.</p>  |                     |
| <p><b>25.</b> BHEL will evaluate the technical bids against essential criteria/requirements. BHEL may seek clarifications, if required, from the qualified bidders only. The clarifications will be communicated to the eligible vendors. The offers of those bidders, who are unable to respond in specified time frame, are likely to be ignored.</p>   |                     |
| <p><b>26. RETURN OF REJECTED MATERIAL FOR REPLACEMENT:</b> The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt.<br/>The rejected material shall be sent back only after receipt of replacement /submission of BG/refund of amount paid.</p>   |                     |
| <p><b>27. RIGHT OF ACCEPTANCE.</b></p> <p>a) BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR reserves the right to reject any or all the bids/quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.</p> <p>b) Any discount/revised offer/bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer/bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.</p> <p>c) Unsolicited discounts/revised offers/bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.</p> <p>d) In case of changes in scope and/or technical specification and/or commercial terms &amp; conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for, then latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.</p> <p>e) The bidder whose bid is technically not accepted will be informed &amp; EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.</p> <p>f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.</p> |                     |
| <p><b>Note:</b> Attach separate sheet for additional information if necessary. The above terms &amp; condition supersedes</p>   |                     |

| <b>BHEL Standard Terms</b>   | <b>Vendor's Acceptance</b> |
|--|----------------------------|
| the terms & conditions found contradictory written elsewhere in the tender enquiry |                            |

**NOTE :**

- a) Prices shall be furnished per pc. basis as per tender condition; ELSE, THE BID IS LIABLE FOR REJECTION. It should be clearly specified in the quotation.
- b) Any item not included in this tender quoted above and shown separately will not be taken cognizance of and shall be ignored while evaluation.

**NOTE:**

1. BHEL will evaluate the technical bids against essential criteria/requirements. BHEL may seek clarifications, if required, from the qualified bidders only. These clarifications will be communicated to the eligible vendors through e-mail or they will be asked to attend techno-commercial discussions on specified dates. The bidders will be given 7 days notice to come prepared with the required documents/clarifications. No extension will be given. **The offers of those bidders, who are unable to respond in this time frame, are likely to be ignored.**
2. The vendors found technically acceptable against their original technical offer and subsequent technical discussion, BHEL will communicate equivalent scope of supply to the qualified bidders who will be required to submit their supplementary technical bid along with impact in the form of addition and deletion in their price bid in separate sealed envelopes. They will also be required to submit copy of un-priced price bid of these impacts in a sealed envelope duly super-scribed. These will be submitted within 15 days. The technical bid along with un-priced price bid of impact will be opened on the communicated date and no extension in this time will be given.

**It is clarified that no correspondence, technical or commercial, other than the above bids is permissible. In case any uncalled for correspondence, technical or commercial, is received, the same will be ignored and entire bid also may be ignored. It is also clarified that no commercial discount will be acceptable.**

1. All the bidders whose offers have been accepted by BHEL will be given notice for opening of their original price bid and supplementary impact.

**Date :**

**Signature :**

**Name :**

**Designation :**

**Department :**

**M/s**

| <b>List of Consortium Bank</b> |                           |    |   |
|--------------------------------|---------------------------|----|---|
|                                | <b>Nationalised Bank</b>  |    | <b>Nationalised Bank</b>                              |
| 1                              | Allahabad bank            | 19 | Vijaya Bank   |
| 2                              | Andhra bank               |    | <b>Public Sector Banks</b>                            |
| 3                              | Bank of Baroda            | 20 | IDBI  |
| 4                              | Canara Bank               |    | <b>Foreign bank</b>                                   |
| 5                              | Corporation bank          | 21 | CITI Bank N.A   |
| 6                              | Central bank              | 22 | Deutsche Bank AG                                      |
| 7                              | Indian Bank               | 23 | The Hongkong and Shanghai Banking Corporation Limited |
| 8                              | Indian Oversea Bank       | 24 | Standard Chartered Bank                               |
| 9                              | Oriental bank of Commerce | 25 | The Royal Bank of Scotland N.V.                       |
| 10                             | Punjab National Bank      | 26 | J P Morgan  |
| 11                             | Punjab & Sindh Bank       |    | <b>Private bank</b>                                   |
| 12                             | State Bank of India       | 27 | Axis Bank   |
| 13                             | State Bank of Hyderabad   | 28 | The Federal Bank Limited                              |
| 14                             | Syndicate Bank            | 29 | HDFC  |
| 15                             | State Bank of Travancore  | 30 | Kotak Mahindra Bank                                   |
| 16                             | UCO Bank                  | 31 | ICICI   |
| 17                             | Union Bank of India       | 32 | Indusind Bank   |
| 18                             | United Bank of India      | 33 | Yes Bank  |



ANNEXURE-D

WAM-28

**Performa for Bank Guarantee**

In consideration of the Bharat Heavy Electrical Limited Siri fort N. Delhi through Division HEEP Hardwar (hereinafter called the Company') having agreed to exempt-----  
----- (hereinafter called 'the said Contractor' which term includes 'Suppliers' for the purpose of this Bond) from the demand under the terms and conditions of an Agreement date. -----  
Made between -----and ----- for (hereinafter called 'the said Agreement') of Security Deposit for the due fulfillment by the said Contractor of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. -----  
(Rupees-----only).

1. We, \_\_\_\_\_ (Indicate the name of the Bank) (hereinafter referred to as 'the Bank') at the request \_\_\_\_\_  
\_\_\_\_\_(Contractor (s) do hereby undertake to pay to the Company an amount not exceeding Rs. \_\_\_\_\_ against any loss or damage caused to or suffered or would be caused to or suffered by the Company by reason of any breach by the said Contractor (s) of any of the terms and conditions contained in the said Agreement.
2. We, \_\_\_\_\_ (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Company by reason of breach by the said Contractor(s), of any of the terms of conditions contained in the said Agreement or by reason of the contractor(s), failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. \_\_\_\_\_.
3. We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, \_\_\_\_\_ (indicate the name of the Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till \_\_\_\_\_ Office / Department / Division of Bharat Heavy Electrical Limited certifies that the terms and conditions of the said Agreement have been fully and property carried out by the said contractor(s) and accordingly discharged this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the \_\_\_\_\_  
\_\_\_\_\_ we shall be discharged from all the liability under this guarantee thereafter.
5. We, \_\_\_\_\_ (indicate the name of the Bank) further agree with the Company that the Company shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said

Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the power exercisable by the company against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the company or any indulgence by the company to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
7. We, \_\_\_\_\_ (indicate the name of the bank) \_\_\_\_\_ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Company in writing.

Dated the \_\_\_\_\_ day of \_\_\_\_\_

For \_\_\_\_\_ (indicate the name of the bank) \_\_\_\_\_

## Performa for Indemnity Bond

This Indemnity Bond made on this \_\_\_\_\_ day of \_\_\_\_\_ by \_\_\_\_\_ a company registered under the Indian Companies Act 1956 and having its registered office at \_\_\_\_\_ (hereinafter referred to as the Contractor) in favour of M/s Bharat Heavy Electricals Ltd., Ranipur Hardwar, registered under the Company Act 1956 having its registered office at BHEL House Siri Fort New Delhi (hereinafter referred to as the 'Purchaser').

Whereas the purchaser places an developmental order ref.no \_\_\_\_\_ with the contractor for the machining of \_\_\_\_\_ on mutually settled terms & conditions of said order ref.no. \_\_\_\_\_. The Purchaser has to supply certain materials to the contractor against bank guarantee so as to enable the contractor to execute the said order.

And whereas on the request from the contractor, the Purchaser has agreed to waive off the condition of submission of Bank guarantee and has agreed to issue the said materials to the contractor on submission of an Indemnity Bond by the contractor as hereinafter appearing to cover the free issue material supplied against the order ref.no. \_\_\_\_\_ placed by the purchaser on contractor.

Now therefore in consideration of the Purchaser agreeing to issue the said materials to the contractor, the contractor does hereby indemnify the Purchaser and agree at all the time responsible for the loss, destruction or deterioration of the materials issued or to be issued by the Purchaser to the Contractor as per terms of the said order for any reason whatsoever while the goods in his custody. It is clearly understood by the contractor that the materials issued by the Purchaser to the contractor in the terms of the terms of the aforesaid order shall continue to be the property of the Purchaser and the contractor shall not sell or dispose off or transfer or otherwise part with the said materials nor than compliance with and performance of the contract which is the subject matter of the aforesaid orders. The contractor shall make all arrangement for the safe custody and proper utilization of the materials issued by the Purchaser and contractor shall be responsible for the Loss destruction or deterioration of all any of the materials issued by the purchaser even if he has taken reasonable precautions and care. The contractor further indemnifies the Purchaser in respect of all direct and indirect losses which may be suffered by the Purchaser in case the contractor fails to deliver to the Purchaser the materials issued to contractor as aforesaid without demand as soon as the time specified in the respective order has expired or the purposes for which they were issued has been accomplished which ever is earlier.

This bond and the trust hereby created shall remain in valid and bring on the contractor till the \_\_\_\_\_ and till such time as the above said order have been fully and finally executed and the contractor has delivered all the materials as per the order placed with the contractor and material accounted for as laid down in the respective order. It is mutually agreed that the liability of the contractor in respective of the Indemnity Bond shall be limited to Rs. \_\_\_\_\_ for fabrication/machining as aforesaid.

In witness where of the parties here to have set their hand in this deed on the day and year herein above mentioned.

For and on behalf of

Witness:

1)

2)



## **GENERAL TERMS AND CONDITIONS OF REVERSE AUCTIONING**

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to “REVERSE AUCTION PROCEDURE” i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit “online sealed bid” in the Reverse Auction. Non-submission of “online sealed bid” by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHEL” like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for noncompliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL 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 BHEL shall be opened as per BHEL’s standard practice.
12. Bidders shall be required to read the “Terms and Conditions” section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction“, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.

14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.
16. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non- consideration of their bids, in case BHEL decides to go for RA. In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

**DETAILS OF COMPANY PERFORMANCE****A. Capacity Details:**

|   |                         |                      |
|---|-------------------------|----------------------|
| Components machining and assembly Capacity (Machines with Qty.)                     | Type of Machines        | Qty.                 |
|   |                         |                      |
| Machining and assembly of components done during last 5 years (Year-wise with Qty.) | Scheduled Supply Period | Actual Supply Period |
|   |                         |                      |
| Outstanding Order Book position (Type of components with Qty. & name of customers*) |                         |                      |

\* If any bidder is unable to give name of all the customer(s) due to confidentiality restrictions, they may give details without disclosing such customer's identity.

**B. Performance of supplies to BHEL:**

Details of POs to be considered in last 5 years shall include (i) Last 5 POs fully/partially executed and (ii) all POs overdue. Details of all POs to be given.

| Sl. No. | Name of BHEL Unit | P.O. No. & Date | P.O. Value | Supply Date |                | Reason of delay, if any |
|---------|-------------------|-----------------|------------|-------------|----------------|-------------------------|
|         |                   |                 |            | As per P.O. | Actual/ Likely |                         |
| (1)     | (2)               | (3)             | (4)        | (5)         | (6)            | (7)                     |
| 1.      |                   |                 |            |             |                |                         |
| 2.      |                   |                 |            |             |                |                         |
| 3.      |                   |                 |            |             |                |                         |
| 4.      |                   |                 |            |             |                |                         |
| 5.      |                   |                 |            |             |                |                         |

Note:

1. In case bidder has not received any Purchase Order in the last 5 years from any of the Units of BHEL, then 'NIL' should be indicated.
2. Reasons for delay to be explained in details.
3. BHEL reserves the right to reject the offer, if past performance of the bidder is evaluated to be unsatisfactory and/or false information is given by the bidder.

**Certificate by Chartered Accountant on letter head**

This is to Certify that M/s .....  
(hereinafter referred to as 'company') having its registered office at  
.....is registered under MSMED Act 2006, (Entrepreneur  
Memorandum No (Part- II) .....dtd:.....,  
Category:.....(Micro/Small) (copy enclosed).

Further verified from the Books of Accounts that the investment of the company as  
on date .....as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost  
excluding land and building and the items specified by the Ministry of Small Scale Industries vide  
its notification No. S.O.1722(E) dated October 5, 2006: Rs.....Lacs

2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building  
and furniture, fittings and other items not directly related to the service rendered or as may be  
notified under the MSMED act, 2006: Rs.....Lacs

**(Strike off whichever is not applicable)**

The above investment of Rs .....Lacs is within permissible limit of  
Rs..... Lacs for.....micro / small (Strike off which is not  
applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro / Small) (**Strike off  
whichever is not applicable**) and the date of graduation of such enterprises from its original  
category is ..... (dd/mm/yyyy) which is within the period of 3 years from the date  
of graduation of such enterprises from its original category as notified vide S.O. No. 3322(E)  
dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name-

Membership Number-

Seal of Chartered Accountant

## **ANNEXURE - G**

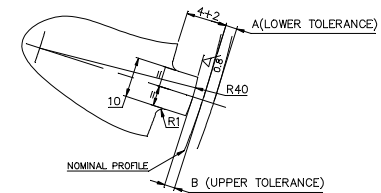
### **LIST OF TEMPLATES & GAUGES TO BE MACHINED**

| <b>SL.<br/>NO.</b> | <b>DESCRIPTION</b>      | <b>DRAWING NO.</b> | <b>UNIT</b> | <b>QTY.</b> |
|--------------------|-------------------------|--------------------|-------------|-------------|
| 1                  | 7-PT. CHECKING TEMPLATE | R8392-1524         | NO.         | 2           |
| 2                  | 7-PT. CHECKING TEMPLATE | R8392-1525         | NO.         | 2           |
| 3                  | BLOCK GAUGE FORM 10.3   | R8739-6074/002     | NO.         | 2           |
| 4                  | BLOCK GAUGE FORM 14     | R8739-6075/002     | NO.         | 2           |
| 5                  | BLOCK GAUGE FORM 17     | R8739-6076/002     | NO.         | 2           |

| Indent No 20160689 |   |                                    |  |
|--------------------|---|------------------------------------|--|
| 01.00              | PRE QUALIFYING CONDITIONS   | REQUIRED                           |  |
| 01.01              | <p>a) Only Vendors having CNC EDM Wirecut machine with machining accuracy tolerance of within +/- 0.01 mm or vendors having manufacturing tie-ups with sub-suppliers having CNC EDM Wirecut machine with machining tolerance of within +/- 0.01 mm should quote.</p> <p>b) Vendors to inform Make , Model and accuracy of above referred CNC EDM wirecut machine.</p> | Vendor to confirm & submit details |  |
| 01.02              | Name of the customer / company with complete contact details and month/year of previous supply of referred item where similar item has been supplied on their own or through their sub-supplier/manufacturing tie ups.  | Vendor to submit details           |  |
| 01.03              | <p>BHEL reserves the right to verify the information provided by vendor. BHEL may also visit vendor works. In case the information provided by vendor is found to be false/ incorrect, their offers are liable to be rejected. BHEL reserves the right to not to further consider the offer of vendor at any stage without assigning any reason thereof.</p>          | Vendor to accept                   |  |

*[Signature]*  
22/3/17  
(E1/TR)

*[Signature]*  
22/3/17  
ESTR

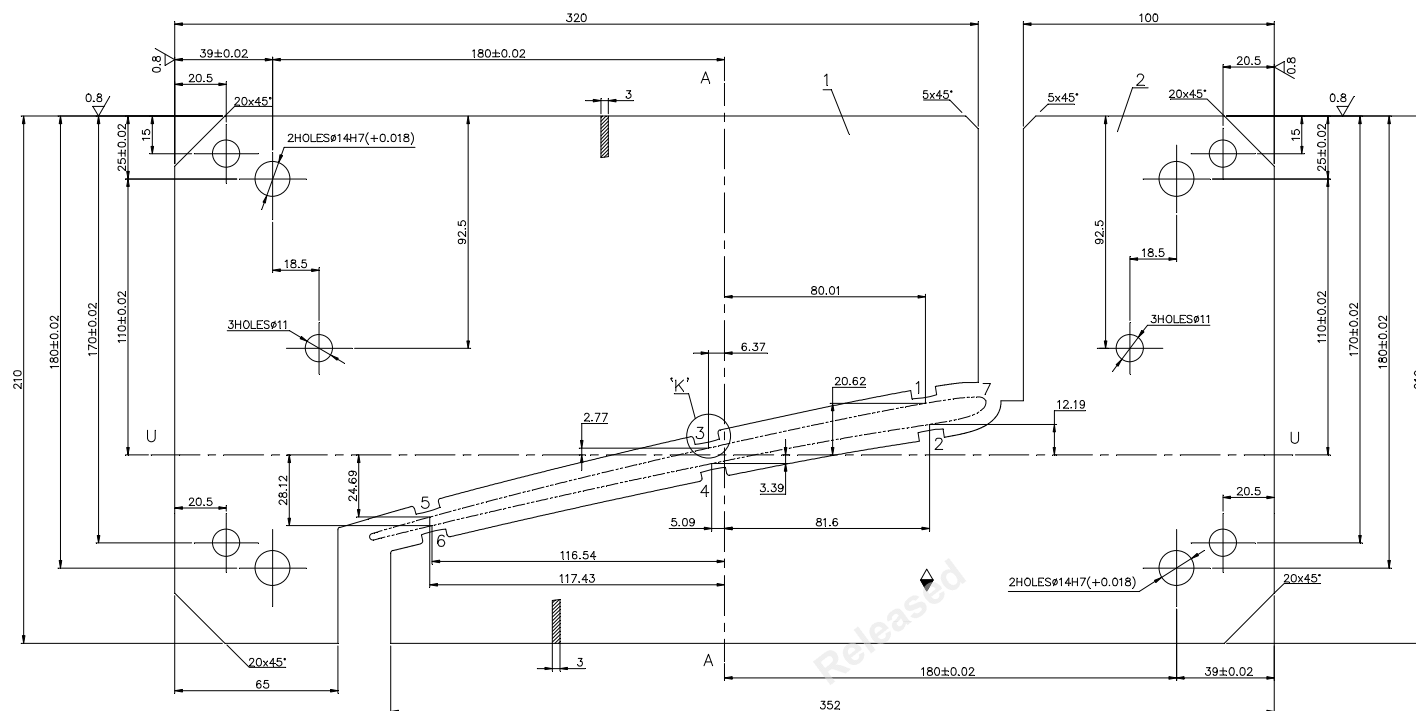


DETAIL-'K' FOR ALL POINTS.

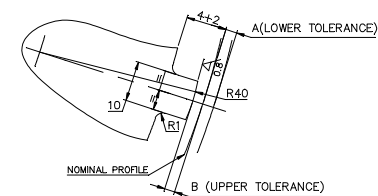
R8392-1525  
SEC. A17-A17  
EXT. PROFILE  
POINTS 2,4,6  
800MW,  
AFTER INLET EDGE  
HARDENING

| ITEM NO. | PROFILE POINT | DIMENSION (A) | DIMENSION (B) | MAX TOL. | W./ORDER NO. | DRG.NO.    | WEIGHT (kg) |
|----------|---------------|---------------|---------------|----------|--------------|------------|-------------|
| 01.      | 3             | 0.9           | 4             | 4.3      | NBF/1976     | R8392-1524 | 1.30        |
|          | 1             | 0.9           | 3.4           | 4.9      |              |            |             |
|          | 5             | 0.9           | 2.7           | 3.6      |              |            |             |
|          | 2             | 4             | 2.3           | 6.3      |              |            |             |
| 02.      | 4             | 3.4           | 2.3           | 5.7      | NBF/1977     | R8392-1525 | 1.48        |
|          | 6             | 2.7           | 2.3           | 5.0      |              |            |             |
|          |               |               |               |          |              |            |             |

[illegible]

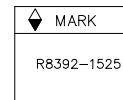


1.6/  THE REST



SCALE-NTS

DETAIL-'K' FOR ALL POINTS.





TECH.REQ: —

- 1-SHARP EDGES TO BE ROUNDED OFF.  
\*2-THE MAXIMUM TOLERANCE TO BE MARKED ON BOTH SIDES.  
3-HARDEN TO HRC. 50±55 AS PER PS. No. 0912.008.  
4-TO BE USED WITH WE-013-3400-4537.  
5-PROFILE DRAWING No. 01030758002.  
6-MANUFACTURING ACCURACY OF PROFILE ±0.02.  
7-CONSERVATION TO BE DONE AS PER TL-30007.

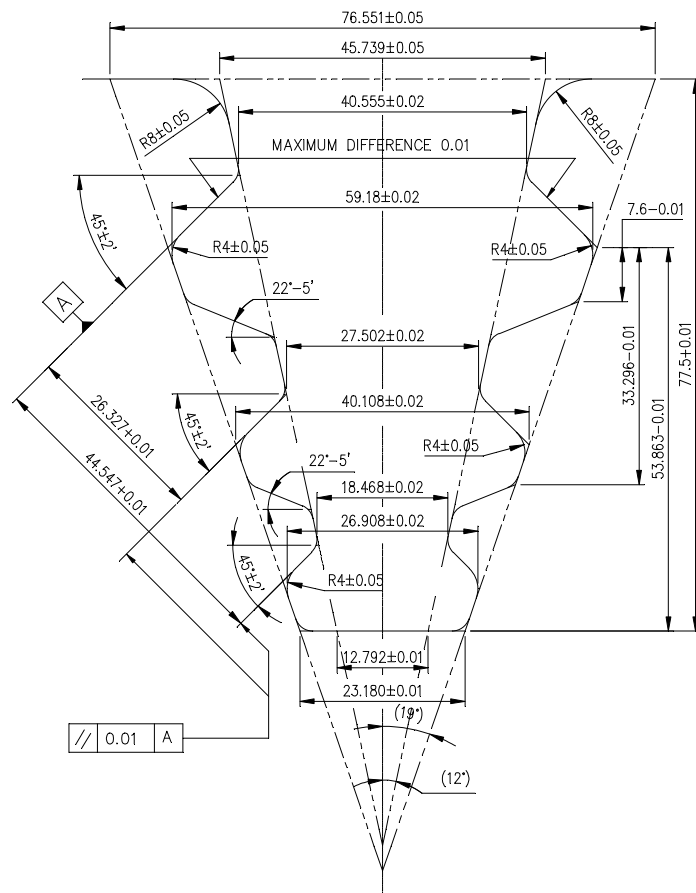
| ITEM NO. | PROFILE POINT | DIMENSION (A) | DIMENSION (B) | MAX. TOL. (A+B) | W./ORDER NO. | DRG.NO.    | WEIGHT (kg) |
|----------|---------------|---------------|---------------|-----------------|--------------|------------|-------------|
| 01.      | 1             | 0.9           | 4             | 4.9             | NBF/1976     | R8392-1524 | 1.30        |
|          | 3             | 0.9           | 3.4           | 4.3             |              |            |             |
|          | 5             | 0.9           | 2.7           | 3.6             |              |            |             |
| 02.      | 2             | 4             | 2.3           | 6.3             | NBF/1977     | R8392-1525 | 1.48        |
|          | 4             | 3.4           | 2.3           | 5.7             |              |            |             |
|          | 6             | 2.7           | 2.3           | 5.0             |              |            |             |

|        |                       |                       |             |            |             |                       |             |      |
|--------|-----------------------|-----------------------|-------------|------------|-------------|-----------------------|-------------|------|
| C2.    | TEMPLATE EXT. PROFILE | R8392-1525            | T90Mn6WCr2  | 1.48       | UNIT WEIGHT | ZONE                  |             |      |
|        |                       |                       | AA10821     | 0.1        |             |                       |             |      |
|        | C1.                   | TEMPLATE INT. PROFILE | R8392-1524  | T90Mn6WCr2 |             |                       | 1.30        |      |
|        |                       |                       |             | AA10821    |             |                       | 0.1         |      |
| VAR.00 | REMARKS               | ITEM No.              | DESCRIPTION | STD.       | DRAWING No. | MATERIAL CODE         | UNIT WEIGHT | ZONE |
|        |                       |                       |             |            |             | VAR. MATERIAL SPEC. C | QTY.        |      |

|                          |              |                    |                  |  |                               |   |                                  |                                 |                           |                              |                                 |  |
|--------------------------|--------------|--------------------|------------------|--|-------------------------------|---|----------------------------------|---------------------------------|---------------------------|------------------------------|---------------------------------|--|
| QMS No./GR.SP.No.        |              |                    |                  | STATUS   | TYPE OF PRODUCT               |   | COMP. DRG. No.<br>01030758002-00 |                                 | M/C TOOL TRANS No.<br>--- |                              | REF. DRG. No.<br><br>R8392-1258 |  |
| APPROVED<br>DRPT.<br>NBF | NAME<br>ANIL | SIGN.<br>-sd-      | DATE<br>18-06-16 | 800 MW   |                               | DESIGN ORDER No.<br>SEE TABLE   |                                  | MODEL No.<br>BIG VERTICAL STAND |                           |                              |                                 |  |
|                          |              |                    |                  |   | BHARAT HEAVY ELECTRICALS LTD. |   |                                  |                                 | NAME<br>MUKESH            | SIGN.<br>-sd-                | DATE NO. OF<br>16-05-16 1       |  |
|                          |              |                    |                  |  | HARDWARE                      |   |                                  |                                 | CHD RAVI                  | -sd-                         | 17-05-16 1                      |  |
|                          |              |                    |                  |  |                               |   |                                  |                                 | APD ANKUR                 | -sd-                         | 20-05-16 1                      |  |
| REV.                     | DATE         | ALTERED<br>CHECKED |                  | DEPT.  | JTE                           |  | SCALE<br>1:1                     | WEIGHT(Kg.)<br>~2.78            | REF. TO ASSY. DRG.        |                              | ITEM NO.<br>(IT)                |  |
|                          |              |                    |                  |  | 209                           |   |                                  |                                 | DRAWING No.<br>R8392-1525 |                              | REVISION                        |  |
| REV.                     | No.          | C/A No.            | DATE             | 7 POINT CHECKING TEMPLATE AT SEC A17-A1Z<br>(EXT PROFILE, AFTER INLET EDGE HARDENING). |                               |   |                                  |                                 |                           |                              |                                 |  |
|                          |              |                    |                  |  |                               |   |                                  |                                 |                           | SHEET No. 01 No. OF SHEET 02 |                                 |  |



DRAWING No. R8739-6074/002



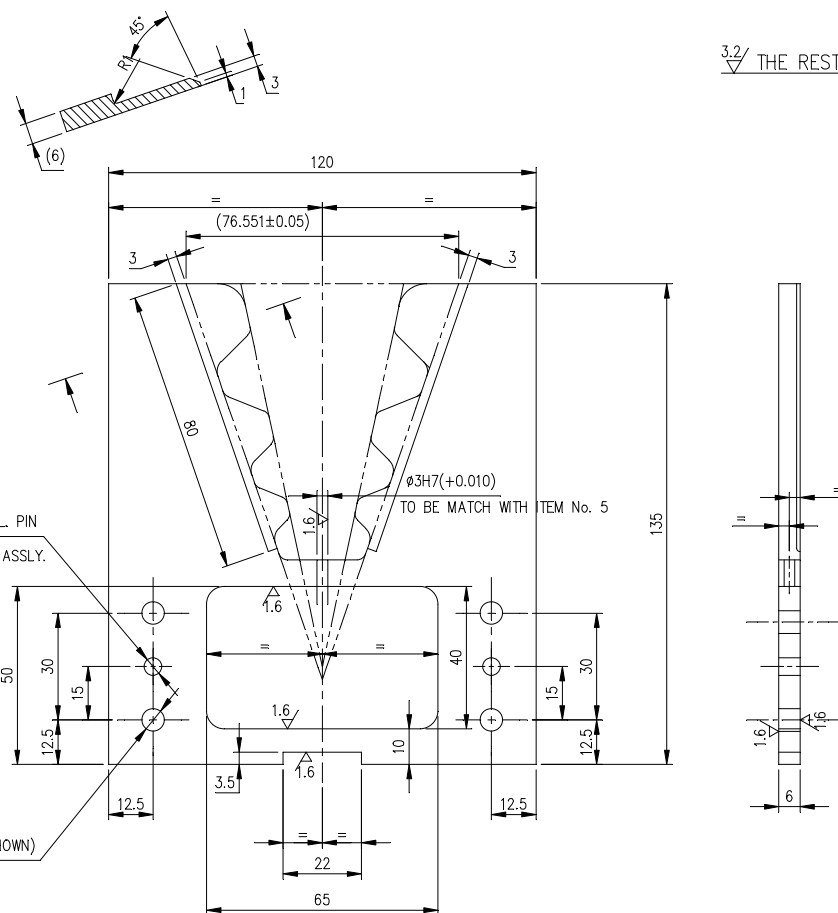
1-NON-WORKING SHARP EDGES TO BE ROUNDED OFF.

2-HARDEN TO HRc 50-60 AS P.S. No. 0912-008.

3-ROOT PROFILE DRAWING No. 2-10307-41036.

4-TOLERANCE ON PROFILE IS  $\pm 0.01$ .



5-SURFACE FINISH ON PROFILE IS  $\sqrt{0.4}$



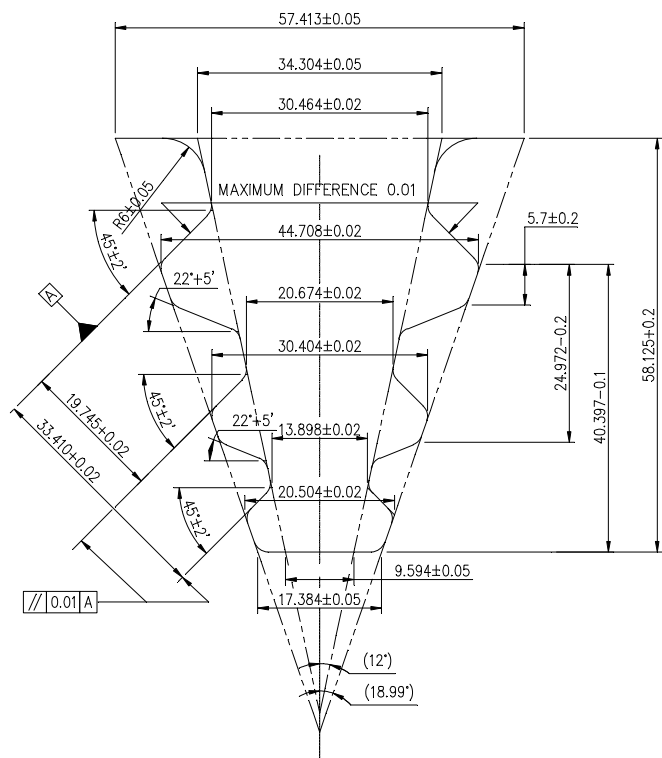
2-HOLES ,  $\phi 5$  H7(+0.012) FOR CYL. PIN  
TO BE MADE WITH ITEM No. 2 & 4 IN ASSLY.

4-HOLES , Ø6.5 (AS SHOWN)

[illegible]

|                   |  |                |  |   |  |  |  |
|-------------------|--|----------------|--|---|--|--|--|
| GMS No./GR.SP.No. |  | STATUS OF DRG. |  | TYPE OF PRODUCT   |  |  |  |
| ACCRD DEPT.       |  | NAME           |  | SIGN.   |  | DATE   |  |
| DATE WHEN MADE    |  | DATE WHEN MADE |  | DATE WHEN MADE  |  | DATE WHEN MADE   |  |
| 04                |  |                |  |  |  | BHARAT HEAVY ELECTRICALS LTD.<br>HARDWAR                   |  |
| 1                 |  |                |  | DRN. M.P.S. —Sd— 15-03-11<br>CHD RAVI/ANKUR —Sd— 15-03-11<br>APD                      |  | NAME SIGN. DATE<br>REF. TO ASSY. DRG. ITEM No. 03          |  |
| REV.              |  | DATE           |  | ALTERED CHECKED   |  | DEPT. JTE<br>CODE 209                                      |  |
|                   |  |                |  |  |  | SCALE 1:1<br>WEIGHT(Kg.) ~0.481                            |  |
|                   |  |                |  | TITLE BLOCK GAUGE   |  | DRAWING No. R8739-6074/002<br>SHEET No. 01 No. OF SHEET 01 |  |
|                   |  |                |  |   |  | SIZE A 2   |  |

DRAWING No. R8739-6075/002



### DIMENSIONS FOR GO-GAUGE SIZE OF PROFILE

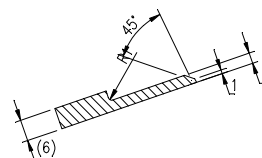
1-NON-WORKING SHARP EDGES TO BE ROUNDED OFF.

2-HARDEN TO HRc 50-60 AS P.S. No. 0912-008.

3-ROOT PROFILE DRAWING No. 2-10307-46035.

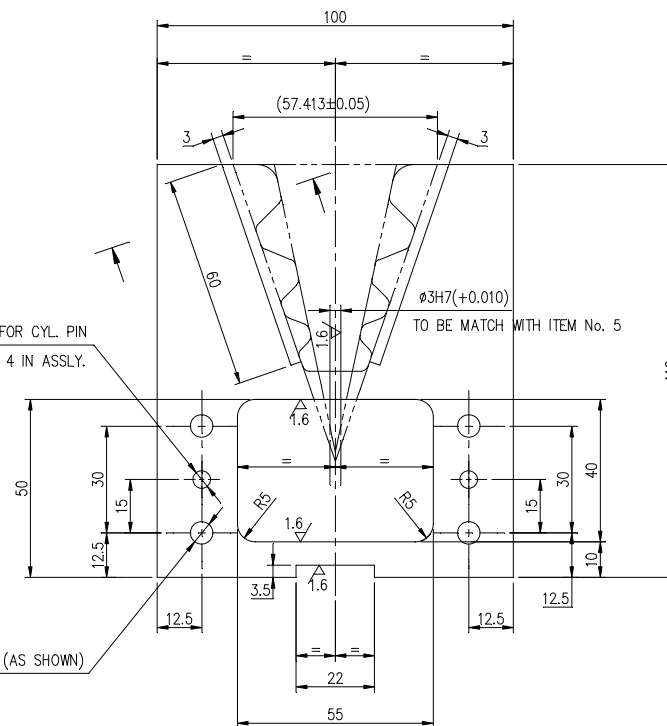
4-TOLERANCE ON PROFILE IS  $\pm 0.01$ .

5-SURFACE FINISH ON PROFILE IS  $0.8 \sqrt{\text{in}}$




### 3.2/ THE REST

2-HOLES ,  $\phi 5$  H7(+0.012) FOR CYL. PIN  
TO BE MADE WITH ITEM No. 2 & 4 IN ASSLY.



4-HOLES ,  $\phi 6.5$  (AS SHOWN)

[illegible]

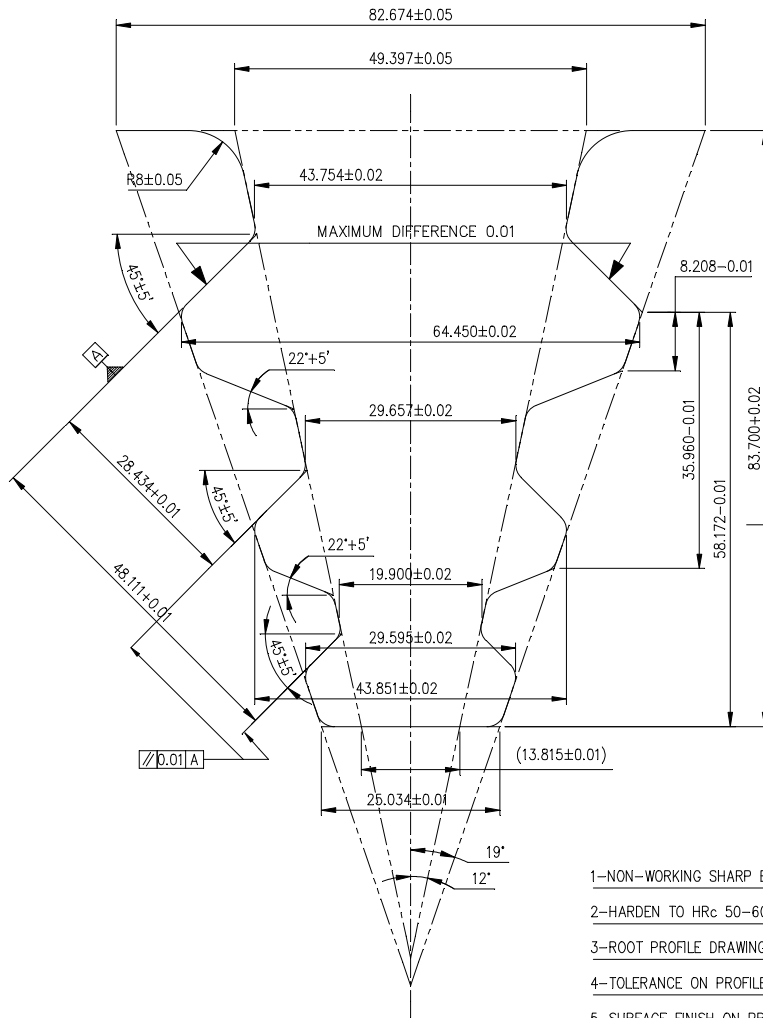
|  |  |                |  |                 |  |                 |  |   |  |             |  |                    |  |            |  |                               |  |                 |  |
|--|--|----------------|--|-----------------|--|-----------------|--|---|--|-------------|--|--------------------|--|------------|--|-------------------------------|--|-----------------|--|
| GMS No./GR.SP.No.  |  |                |  | STATUS OF DRG.  |  | TYPE OF PRODUCT |  |   |  |             |  |                    |  |            |  |                               |  |                 |  |
| ACRDED DEPT.   |  | NAME           |  | SIGN.           |  | DATE            |  |   |  |             |  |                    |  |            |  |                               |  |                 |  |
| DATE DATE DATE   |  | DATE DATE DATE |  | DATE DATE DATE  |  | DATE DATE DATE  |  |   |  |             |  |                    |  |            |  |                               |  |                 |  |
| <div><div><div>भारत भार</div><div>BHEL</div></div><div>BHARAT HEAVY ELECTRICALS LTD.<br/>HARDWAR</div></div> |  |                |  |                 |  |                 |  | NAME  |  | SIGN.       |  | DATE               |  | No.        |  |                               |  |                 |  |
|  |  |                |  |                 |  |                 |  | M.P.S.  |  | -Sd-        |  | 18-04-11           |  | No.        |  |                               |  |                 |  |
|  |  |                |  |                 |  |                 |  | CHD RAVI/ANKUR  |  | -Sd-        |  | 18-04-11           |  | No.        |  |                               |  |                 |  |
|  |  |                |  |                 |  |                 |  | APD   |  |             |  |                    |  |            |  |                               |  |                 |  |
| REV.   |  | DATE           |  | ALTERED CHECKED |  | DEPT. JTE       |  | SCALE   |  | WEIGHT(Kg.) |  | REF. TO ASSY. DRG. |  | ITEM No.   |  | No. OF ITEM                   |  |                 |  |
|  |  |                |  |                 |  | CODE 209        |  |  |  | 1:1         |  | ~ 0.381            |  | R8739-6075 |  | 03                            |  |                 |  |
| TITLE  |  |                |  |                 |  |                 |  | BLOCK GAUGE   |  |             |  |                    |  |            |  | DRAWING No.<br>R8739-6075/002 |  | REV.            |  |
|  |  |                |  |                 |  |                 |  |   |  |             |  |                    |  |            |  | SHEET No. 01                  |  | No. OF SHEET 01 |  |
| SIZE A 2   |  |                |  |                 |  |                 |  |   |  |             |  |                    |  |            |  |                               |  |                 |  |

SIZE A 2

FIRST ANGLE PROJECTION (ALL DIMENSIONS IN m.m.)

FORM DG 44(B)

DRAWING No. R8739-6076/002

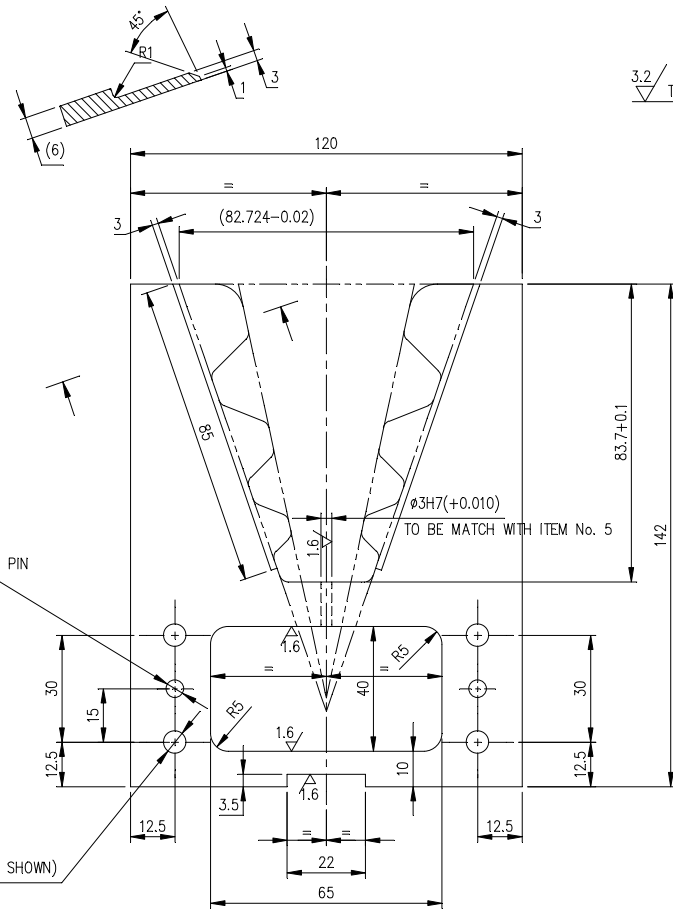


2-HOLES,  $\phi 5$  H7(+0.012) FOR CYL. PIN  
TO BE MADE WITH ITEM No. 2 & 4  
IN ASSLY.

Released

4-HOLES,  $\phi 6.5$  (AS SHOWN)

- 1-NON-WORKING SHARP EDGES TO BE ROUNDED OFF.
- 2-HARDEN TO HRC 50-60 AS P.S. No. 0912-008.
- 3-ROOT PROFILE DRAWING No. 2-10307-41031.
- 4-TOLERANCE ON PROFILE IS  $\pm 0.01$ .
- 5-SURFACE FINISH ON PROFILE IS  $0.8/\sqrt{\text{ }}$
- 6-ALL UNDIMENSIONED RADII TO BE R2.5±0.1



|        |         |          |             |      |             |                      |          |               |             |      |      |
|--------|---------|----------|-------------|------|-------------|----------------------|----------|---------------|-------------|------|------|
| VAR.00 | REMARKS | ITEM No. | DESCRIPTION | STD. | DRAWING No. | T90Mn6WCr2           | AA 10821 | MATERIAL CODE | UNIT WEIGHT | QTY. | ZONE |
|        |         |          |             |      |             | VAR. MATERIAL SPECN. |          |               |             |      |      |

|  |  |      |  |                    |  |                 |  |  |  |                               |  |  |  |             |  |                     |  |                               |  |             |  |                |  |
|--|--|------|--|--------------------|--|-----------------|--|--|--|-------------------------------|--|--|--|-------------|--|---------------------|--|-------------------------------|--|-------------|--|----------------|--|
| GMS No./GR.SP.No.  |  |      |  | STATUS OF DRG.     |  | TYPE OF PRODUCT |  |  |  |                               |  |  |  |             |  |                     |  |                               |  |             |  |                |  |
| AGREED DEPT.   |  | NAME |  | SIGN.              |  | DATE            |  |  |  |                               |  |  |  |             |  |                     |  |                               |  |             |  |                |  |
| ---  |  | ---  |  | ---                |  | ---             |  |  |  |                               |  |  |  |             |  |                     |  |                               |  |             |  |                |  |
| GRADE OF UNTOL.DIM. :-<br>M/CG- <del>E</del> /M/E/AA0230208<br>WELDING-A/B/C/D-AA0621104<br>GAS CUTTING-T3'AA0621101 |  |      |  |                    |  |                 |  | BHARAT HEAVY ELECTRICALS LTD.<br>HARDWAR |  | DRN. CHD<br>RAVI/ANKUR<br>APD |  | NAME<br>M.P.S.<br>SIGN.<br>-Sd-<br>DATE<br>04-05-11        |  | No. OF VAR. |  |                     |  |                               |  |             |  |                |  |
| REV.   |  | DATE |  | ALTERED<br>CHECKED |  | REV.            |  | DATE                                     |  | ALTERED<br>CHECKED            |  | DEPT. JTE  |  | SCALE NTS   |  | WEIGHT(Kg.) ~ 0.414 |  | REF. TO ASSY. DRG. R8739-6076 |  | ITEM No. 03 |  | No. OF ITEM 09 |  |
| BLOCK GAUGE  |  |      |  |                    |  |                 |  |  |  |                               |  | DRAWING No. R8739-6076/002<br>SHEET No. 01 No. OF SHEET 01 |  |             |  |                     |  |                               |  |             |  |                |  |

SIZE A 2



# PLANT PURCHASING SPECIFICATION

## HEEP - HARDWAR

HW 10092

PAGE 1 OF 54

### TOOL STEEL, FLATS T90Mn6WCr2

#### 1. GENERAL :

This specification governs the quality of annealed Manganese- Chromium- Tungsten tool steels- flats.

#### 2.0 APPLICATION

For the manufacture of tools capable of being hardened and tempered.

#### 3.0 CONDITION OF DELIVERY :

3.1 The material shall be supplied in Hot Rolled & annealed condition followed by rough machining.

3.2 When specified in the order, the material shall be supplied in hot rolled & annealed, ground & tempered condition. XXXXXXXXXX The material should be properly annealed so that there is no bend during wire cutting operation.

#### 4. COMPLIANCE WITH NATIONAL STANDARD

The material shall comply with the requirements of :-

IS : 4430-79 (REAFFIRMED-<sup>2004</sup>95) } (a) Tool and mould steels.

Gr : T90Mn6WCr2, Annealed } (a)

#### 5.0 DIMENSIONS AND TOLERANCES :

5.1 Sizes : Flats of thickness 2,3,4,5,6,8, & 10 mm in different widths and lengths.

#### 5.2 Tolerances

5.2.1 The tolerances on flats- Hot rolled, annealed and rough

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SIGN & DATE

INVENTORY No.

P- 3114

|              |              |             |            |                           |                  |
|--------------|--------------|-------------|------------|---------------------------|------------------|
|              |              |             |            | NAME                      | SIGN. & DATE     |
|              |              |             | DRAWN      |                           |                  |
|              |              |             | WORKED     | Shri S. N. Bhatnagar      | 1.7.89           |
| MTE          | J. P. MEENA  | 14/3/90     | CHECKED    | S. KUMAR                  | Sudhakar 10.7.89 |
| AGREED DEPT. | NAME         | SIGN & DATE | SUPERVISED | PRAKASH SINGH             | 12/2/90          |
| REVISION: 01 |              |             | APPROVED:  | PLANT                     | PS               |
|              |              |             |            | STANDARDIZATION COMMITTEE | 2.60             |
| REV. 01      | (REAFFIRMED) | REV 02      | PREPARED:  | ISSUED:                   | DATE:            |
| DT-2-2-2008  |              | 17.11.08    | TSX        | STANDARDS DIVISION        | 19/3/90          |

|  |             |   |                          |  |   |   |          |
|--|-------------|---|--------------------------|--|---|---|----------|
| INVENTORY No.<br><b>P-3114</b>   | SIGN & DATE | COPYRIGHT AND CONFID. JTIAL<br>The information on this document is the property of Bharat Heavy Electricals Limited.<br>It must not be used directly or indirectly in any way detrimental to the interest of the company. | SUPERSEDES INVENTORY No. | SIGN & DATE                              |  | <b>Plant Purchasing Specification</b><br>HEEP - HARDWAR | HW 10092 |
|  |             |   |                          |  |   | PAGE 2 OF 54  |          |
| <p>machined shall be as follows :</p> <p>Thickness            ± 0.1 mm<br/>Width                * 6mm, -0<br/>Length                + 10mm , -0</p> <p>5.2.2 The tolerances on flats- Hot rolled annealed, ground and tempered shall be as follows :</p> <p>Thickness            ±0.05 mm<br/>Width                + 6.00 mm, -0<br/>Length                + 10.00 mm, -0<br/>Flatness off <del>          </del> hardened blank is permissible up to 0.05/100 limiting to 0.2/600 .</p> <p>6.0 <u>MANUFACTURE</u></p> <p>Material shall be manufactured from Killed Steel. Steel shall be made by the Electric or any other approved process as agreed to , between the purchaser &amp; the manufacturer. Sufficient reduction and discards shall be made from each in got to ensure freedom from piping, segregation and other harmful defects. The material shall be rough machined, chipped or ground to remove all surface imperfections which are likely to produce defects in the finished products. If the material is conditioned by grinding or chipping, depth of conditioning shall be exceed half the machining allowance per side &amp; width of conditioning shall be atleast four times its greatest depth.</p> <p>7. <u>FREEDOM FROM DEFECTS :</u></p> <p>The finished material shall be free<sup>from</sup> all internal and surface defects such as seams, cracks , pipes, flakes and segregations.</p> <p>8. <u>CHEMICAL COMPOSITION :</u></p> <p>In ladle analysis of steel and permissible variation in the composition of the finished product from the ladle analysis shall be as follows :</p> |             |   |                          |  |   |   |          |
| REVISION 01  |             | REV.02<br>DATE:17/11/08   |                          | WORKED BY <i>Shriy S. N. Singh</i> 17.89 |   | CHECKED BY S. KUMAR <i>Sudhu</i> 10.7.89                |          |



# Plant Purchasing Specification

HEEP - HARDWAR

HW 400 92

PAGE 3 OF 54

SIGN &amp; DATE

SUPERSEDES  
INVENTORY No.

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SIGN &amp; DATE

INVENTORY No.

P-3114

| Element    | Percent |       | Permissible variation<br><del>percent max.</del> (a) |
|------------|---------|-------|--|
|            | Min.    | Max.  |  |
| Carbon     | 0.85    | 0.95  | $\pm 0.03$   |
| Silicon    | 0.10    | 0.35  | $\pm 0.03$   |
| Manganese  | 1.25    | 1.75  | $\pm 0.06$   |
| Chromium   | 0.30    | 0.60  | $\pm 0.05$   |
| Tungsten   | 0.40    | 0.60  | $\pm 0.04$ (a)                                       |
| Vanadium   | -       | 0.25  | $\pm 0.02$   |
| Sulphur    | -       | 0.035 | $\pm 0.005 + 0.005$ (a)                              |
| Phosphorus | -       | 0.035 | $\pm 0.005 + 0.005$ (a)                              |

**NOTE :**

Elements not quoted above shall not be added to the steel, except when agreed to, other than for the purpose of finishing the heat and shall not exceed the following limits.

| Elements   | Percent , Max. |
|------------|----------------|
| Nickel     | 0.25           |
| Molybdenum | 0.25           |
| Copper     | 0.35           |
| Cobalt     | 0.10           |

**9. TEST SAMPLES :**

One sample product shall be taken from each case for chemical analysis. For hardness test 5 percent of the no. of pieces in the charged upto a maximum of 10 & minimum of 2 covering all sizes shall be taken.

**10. MECHANICAL PROPERTIES :**

Hardness as Received conditions :

When tested in accordance with IS:1500-2005, the test pieces shall show a Brinell Hardness of 230 HB Maximum.

**11. RESPONSE TO HEAT TREATMENT :**

Material shall be capable of responding to the heat treatment specified below and the material must achieve a minimum hardness of 60-65 HRC without showing any sign of

REVISION 01

REV - 02

DATE - 17.11.08

WORKED BY

Shiv S. Nishigandhi


17.89

CHECKED BY

S. KUMAR

Sudhir

10.7.89

|  |             |                 |   |   |  |                 |
|--|-------------|-----------------|---|---|--|-----------------|
| INVENTORY No.<br><b>P-3114</b>   | SIGN & DATE | SIGN & DATE     | SIGN & DATE                               |  | <b>Plant Purchasing Specification</b><br><b>HEEP - HARDWAR</b> | <b>HW 10892</b> |
|  |             |                 |   |   |  | PAGE 4 OF 54    |
| <p>overheating. Harden in oil at a temp. of 800-830°C.<br/>         Temper at a suitable temp. between 170-300°C.</p> <p>12. <u>TEST CERTIFICATE :</u><br/>         Three copies of test certificates shall be supplied unless otherwise stated on the order.<br/>         The test certificate shall bear the following information:</p> <p>12.1 <u>BHEL References :</u><br/>         12.2 <u>BHEL Order No :</u><br/>         12.3 <u>Supplier's Reference :</u><br/>         Name :<br/>         Identification No :<br/>         Cast No :<br/>         Details of Heat Treatment :</p> <p>13. <u>RESULTS OF TESTS :</u><br/>         Results, of chemical analysis and hardness tests in annealed, hardened and tempered conditions.</p> <p>14. <u>PACKING AND MARKING :</u><br/>         The material shall be suitably packed in bundles to prevent corrosion and damage during transit.<br/>         Material above 25mm in dia or of equivalent cross section shall be stamped HW 10892 and cast no. on the side near the end or on the end face.<br/>         A metal lable shall be securely attached to each bundle and shall bear the following information.<br/>         HW 10892 : T90Mn6WCr2 Tool Staal flat - Annealed.<br/>         BHEL Order No :<br/>         Consignment or identification No :<br/>         Cast No :<br/>         Size and weight :<br/>         Supplier's Name :</p> <p>15. <u>EQUIVILENT STANDARD &amp; GRADES (FOR REFERENCE ONLY) - (a)</u><br/>         BOHLAR : K460<br/>         AISI : 01<br/>         DIN : 1.2510 100 MnCrW4<br/>         BS : 801<br/>         IS : 4430-1979</p> |             |                 |   |   |  |                 |
| REVISION 01  | REV - 02    | DATE - 17-11-00 | WORKED BY <i>Chirag S. Nataraj</i> 1.7.89 | CHECKED BY <i>S. KUMAR</i> 10.7.89  |  |                 |

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