 432-003	ENQUIRY VALVES	Bharat Heavy Electricals Limited (A Government of India undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT/VALVES TIRUCHIRAPPALLI-620 014.	Phone:0431-257 7802 Email: tender_cell@bheltry.co.in ramnath@bheltry.co.in
	ENQUIRY NO. EN-SOF1796	DATE 11.05.2016	DUE DATE FOR QUOTATION 20.05.2016
Please quote Enquiry No., and due date in correspondences This is only a request for quotation and not an order.			
<u>Date , Time & Venue of tender opening :</u> 20.05.2016 at 14.30 Hrs. at The Tender Opening Cell / Valves Room No. 26, Building -24 Bharat Heavy Electricals Limited Tiruchirappalli - 620014, Tamilnadu, India	<u>Scope of supply</u> Supply of Xylan coated Fasteners as per the drawings and TDC enclosed. -List of Annexures EN-SOF1796-Open tender Enquiry Annexure 1- Terms and Conditions Annexure 2A -Scope of Supply Annexure 2B- Drawings & TDC Annexure 3- Terms & Condition to confirm Annexure 4A-Unpriced Format Annexure 4 B- Priced Format Annexure 5- Schedule of Deviations		
<p>The rate of Excise Duty and Sales Tax, Prevalent on the date of quotation, should be clearly indicated in the quotation itself.</p> <p>Please, submit your lowest quotation in duplicate subject to our terms and conditions , for the above materials, so as to reach us on or before the due date by 14.00 Hrs. (IST)</p> <p>Quotation will be opened at 14.30 Hrs. (IST) on the due date in the presence of tenderers who may like to be present.</p> <p>Late tenders will not be considered.</p>		<p style="text-align: center;">Yours faithfully,</p> <p style="text-align: center;">For Bharat Heavy Electricals Ltd</p> <p style="text-align: center;">Ramanath Singh Engineer/Purchase/Valves</p>	



434-003

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
 HIGH PRESSURE BOILER PLANT
 PURCHASE DEPARTMENT / VALVES
 THIRUCHIRAPALLI - 620014
 TAMILNADU (INDIA)

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PHONE :91-431-2577305
 GRAMS : BHARATELEC
 FAX NO: 91-431-2520383
 E-mail : valpur@bheltry.co.in
 WEB : http://mm.bheltry.co.in

Vendor Code : 23505 Vendor Name : M/S Open Tender Dummy Code	Enquiry No EN-SOF1796	Enquiry Date 11.05.2016	Due Date for Quotation 20.05.2016
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Delivery Quantity	Schedule Date
SUPPLY OF FOLLWOING XYLAN COATED FASTENERS AS PER THE DETAILS				
10	964693270000 2V4Z0120198/00 STUD, FT, W/2NUTS, 3/4"X5- 1/4", CC, XYLAN B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.	NO	384.00	06.07.16
20	964693380000 2V4Z1220198/00 STUD, FT, W/2NUTS, 1-3/8"X10- 1/4", CC, XYLAN B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.	NO	480.00	06.07.16
30	964693390000 2V4Z1320198/00 STUD, FT, W/2NUTS, 1-3/8"X10-	NO	1,908.00	06.07.16

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 Late tenders are liable to be rejected .

Yours faithfully,
 For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES



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EN-SOF1796 / 11.05.2016		23505		
<p>3/4", CC, XYLAN</p> <p>B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>				
40	964693410000 2V4Z1520198/00	NO	96.00	06.07.16
<p>STUD, FT, W/2NUTS, 1-1/2"X11- 1/4", CC, XYLAN</p> <p>B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>				
50	964693440000 2V4Z1820198/00	NO	128.00	06.07.16
<p>STUD, FT, W/2NUTS, 1- 3/4"X15", CC, XYLAN</p> <p>B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>				
60	964693450000 2V4Z1920198/00	NO	1,836.00	06.07.16
<p>STUD, FT, W/2NUTS, 1-7/8"X13- 3/4", CC, XYLAN</p>				

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	<p>B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>			
70	964693500000 2V4Z0220200/00 STUD, FT, W/2NUTS, 7/8"X6", HH, XYL N	NO	450.00	06.07.16
	<p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>			
80	964693510000 2V4Z0320200/00 STUD, FT, W/2NUTS, 1"X6- 1/2", HH, XYLAN	NO	360.00	06.07.16
	<p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>			
90	964693520000 2V4Z0420200/00 STUD, FT, W/2NUTS, 1"X6- 3/4", HH, XYLAN	NO	24.00	06.07.16
	<p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW</p>			

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EN-SOF1796 / 11.05.2016**23505**

100	964693540000 2V4Z0620200/00	NO	592.00	06.07.16
	<p>CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p> <p>STUD, FT, W/2NUTS, 1-1/8"X7- 1/4", HH, XYLAN</p> <p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>			
110	964693620000 2V4Z1420200/00	NO	18.00	06.07.16
	<p>STUD, FT, W/2NUTS, 1- 1/2"X10", HH, XYLAN</p> <p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.</p>			
120	964693670000 2V4Z1920200/00	NO	234.00	06.07.16
	<p>STUD, FT, W/2NUTS, 1-7/8"X13- 3/4", HH, XYLAN</p> <p>B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN</p>			

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	XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
130	964694030000 2V4Z2520199/00 STUD, DE, W/NUT, 1- 5/8 "X213, CC, XYLAN-4Z25	NO	144.00	06.07.16	
	B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
140	964694090000 2V4Z3120199/00 STUD, DE, W/NUT, 2 "X258, CC, XYLAN- 4Z31	NO	120.00	06.07.16	
	B7, 2H, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
150	964694120000 2V4Z0220201/00 STUD, DE, W/NUT, 3/4 "X100, HH, XYLAN -4Z02	NO	672.00	06.07.16	
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED.				

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	ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.			
160	964694140000 2V4Z0420201/00 STUD, DE, W/NUT, 7/8"X115, HH, XYLAN-4Z04	NO	376.00	06.07.16
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.			
170	964694170000 2V4Z0720201/00 STUD, DE, W/NUT, 1"X117, HH, XYLAN-4Z07	NO	24.00	06.07.16
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.			
180	964694190000 2V4Z0920201/00 STUD, DE, W/NUT, 1"X125, HH, XYLAN-4Z09	NO	256.00	06.07.16
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING			

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Yours faithfully,
 For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES

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THIRUCHIRAPALLI - 620014
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EN-SOF1796 / 11.05.2016**23505**

	AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
190	964694210000 2V4Z1120201/00 STUD, DE, W/NUT, 1- 1/8 "X131, HH, XYLAN-4Z11	NO	154.00	06.07.16	
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
200	964694220000 2V4Z1220201/00 STUD, DE, W/NUT, 1- 1/8 "X142, HH, XYLAN-4Z12	NO	514.00	06.07.16	
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE.				
210	964694230000 2V4Z1320201/00 STUD, DE, W/NUT, 1- 1/4 "X150, HH, XYLAN-4Z13	NO	184.00	06.07.16	
	B7M, 2HM, ZINC, XYLAN FASTENERS TO BE YELLOW CHROMATE - ZINC PLATED AND THEN XYLAN-1070 BLUE COATED. ALL STUD <(>&<)> NUT SHOULD BE ASSEMBLED AS PER THE DRAWING AND THE ASSEMBLY SHOULD BE PACKED				

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Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES

BHARAT HEAVY ELECTRICALS LIMITED

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EN-SOF1796 / 11.05.2016

23505

SUITABLY TO AVOID THREAD
DAMAGE.

220 964694320000 2V4Z2220201/00 NO 600.00 06.07.16
STUD, DE, W/NUT, 1-
1/2 "X186, HH, XYLAN-4Z22

B7M, 2HM, ZINC, XYLAN
FASTENERS TO BE YELLOW
CHROMATE - ZINC PLATED AND THEN
XYLAN-1070 BLUE
COATED.
ALL STUD <(>&<)> NUT SHOULD BE
ASSEMBLED AS PER THE DRAWING
AND
THE ASSEMBLY SHOULD BE PACKED
SUITABLY TO AVOID THREAD
DAMAGE.

General Note:

1. Offers are invited in Two Part Bid
(Techno-Commercial Bid & Price Bid)
2. Drawings , TDC and Terms & condition of enquiry enclosed.
3. Any deviation from purchase Specs should be clearly indicated in the offer, otherwise it will be construed that your offer is complying with BHEL requirement.
4. Delivery Period: 06 weeks from the date of Purchase order.
5. The terms and conditions shall be strictly as per our enquiry.

Special Notes :-

"Please refer the clause No 5 of "Terms and Conditions" for technical qualifications criteria for this tender".

The bidder along with its associate/ collaborators/
sub-contractors/sub-vendors/ consultants/ service providers shall strictly
adhere to BHEL fraud prevention policy displayed on BHEL website
<http://www.bhel.com> and shall immediately bring to the notice of BHEL
management about any fraud or suspected fraud as soon as it comes to their
notice.

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For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE
Trichy - 620 014. India
TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

1. QUOTATIONS:

- a. **Submission of Tender:** Each offer should be sent in double cover separately and the same should be sealed and super scribed with correct Tender No., item of supply and due date of opening. Two or more quotations should not be sent in one cover. Price Bid should contain only Price in Rs per unit for each type. Tender should not be addressed to any individual's name but only by designation as below:
- The Tender Opening Cell / Valves
Room No. -26, Building -24
Bharat Heavy Electricals Limited
Tiruchirappalli - 620014, Tamilnadu, India
Or
Email ID: tender_cell@bheltry.co.in
- b. **Late tenders:** Late tenders shall not be considered under any circumstance.
- c. **Regulations:** Tender should be accompanied by detailed technical literature, Catalogue and detailed dimensional drawings in ENGLISH. 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 figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- d. **Two Bid Systems:** If tender calls for two part bid system (Techno commercial & price Bid). First the Techno Commercial bid will be opened. Techno-commercially suitable vendors alone will be intimated for price bid opening or Reverse Auction.
- e. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- f. **Catalogue:** Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.
- g. **Acceptance:** The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
- h. **Samples:** Samples should be submitted separately if specially requested in tender before due date of the enquiry. They should be clearly marked with the enquiry No and date on the outside cover to facilitate identification.
- i. **Spares:** The tenderer should quote separately for spares that are required for two years trouble free operation. The spares offer should accompany the offer of main equipment; otherwise the quotation will be overlooked.

2. COMMERCIAL TERMS & CONDITIONS:

- a. **Terms of Payment:**
For Indigenous Suppliers: 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement. Offers with payment term as LC and advance payment will be rejected. Any deviation in the above payment term will attract loading as "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders."
For Import Suppliers: 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account. Any deviation in the above payment term will attract loading as "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders." In the case of Usance LCs the loading will be considered @ 1.5% on the offered Value. For LC at sight the loading will be considered @ 3.5% on the offered Value.
- b. **Liquidated Damage** Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.
For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.
Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).
- c. **Delivery Terms:**
For Indigenous Suppliers: FOR BHEL Trichy/FOR site as mentioned in enquiry inclusive of freight and insurance.
For Import Suppliers: FOB nearest SEA Port/FCA nearest AIR port.
- d. **Validity of Offer:** Prices should be valid for 06 months from the date of opening of this tender.
- e. **Duties and Taxes:** If any Sales Tax is payable as extra to the quoted price, it should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.
- f. **Guarantee Clause:** The vendor shall give a guarantee for the performance of his supplies for a period of eighteen months from the date of dispatch or twelve months from the date of commissioning whichever is earlier.
- g. **Risk Purchase:** Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty at the rate mentioned in clause 2 b above.
- h. **Preferential Delivery:** If a contract is placed on a higher tender as a result of this invitation to tender in preference to the lowest acceptable offer in consideration of the earliest delivery, the seller will be liable to pay to the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price FOR destination, including all elements of freight, sales tax, duties and other incidents, incidental in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE Trichy - 620 014, India TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

- i. **MODVAT/CREDIT:** If any Excise Duty is payable, the chapter head/sub-head reference and the rate of the duty should be quoted. If the tender is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser.
- j. **Miscellaneous:** Any Other conditions which might have been quoted by the seller and are in contravention to the terms prescribed in order and which have not been specifically accepted in by Purchaser will not be applicable to the contract.
- k. **Delivery:** Delivery schedule shall be strictly as per BHEL tender requirement which are as indicated against each item in our tender. If supplier offers more than this delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.
- l. **Performance Bank Guarantee:** If tender Calls for Performance Bank Guarantee, Vendor should provide a performance bank guarantee (PBG) for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months.
- m. **Counter offer:** BHEL reserves the right to counter-offer with L2 vendor, in order to have broader vendor base for ensuring delivery.
 - (i) If L2 vendor accepting the counter offer rates, loading shall be 60:40 on L1:L2.
 - (ii) Highest rate bidder will not be considered for this tender, in case of more than two responses for each enquiry serial numbers.
- n. **Special Provisions for Micro and Small Enterprises (MSE):**
 - i. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
 - ii. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
 - iii. In case MSE vendor participating in the tender quotes within the price band of LI +15%, they will be allowed to supply the portion of the requirement subject to acceptance of LI price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
 - iv. MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with CA certificate applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.
- o. **Reverse Auction:** BHEL reserves the right to go for a Reverse Auction (RA) instead of Opening the price bid, which will be decided after techno-commercial bid evaluation. Information and general terms and conditions governing RA are given below:-
GENERAL TERMS AND CONDITIONS OF RA

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 ON INTERNET.

 - i. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
 - ii. BHEL will engage the service provider who will provide all the necessary training and assistance before commencement of on line bidding on internet.
 - iii. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
 - iv. Business rules like event date, time, Start price, bid decrement value; extensions etc. also will be communicated through service provider for compliance.
 - v. Vendors have to mail/fax the Compliance form in the prescribed format (provided by the Service provider) before the start of the Reverse auction. Without this, the vendor will not be eligible to participate in the event.
 - vi. 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 non-compliance to BHEL 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.
 - vii. Reverse auction will be conducted on the scheduled date & time.
 - viii. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
 - ix. The lowest bidder has to mail/fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
 - x. 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 BHEL as per prevailing procedure.

3. GENERAL CONDITIONS

- a. BHEL reserves the right to finalize the tender as per item sl no wise or as a total package or project wise. Separate orders will be released for each project and documents should be supplied for each order separately.
- b. BHEL reserves the right to increase or reduce or split the Tender Quantity and to NOT to order for some or all material based on the changes in project.
- c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. Purchase Order, PO Item SI No, Material code, Quantity should marked the Packing clearly.
- g. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.
- h. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder.

4. DOCUMENTATION:

For Indigenous suppliers:-



BHARAT HEAVY ELECTRICALS LTD

Annexure-1

VALVES PURCHASE
Trichy - 620 014. India
TERMS AND CONDITIONS

Phone: 0431 2577802

Email: ramnath@bheltry.co.in

- With Consignment:** Duplicate for transporter copy of Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Test Certificates, Calibration Report, Compliance Certificate & Guarantee/Warranty Certificate etc...
- To Finance:** Original and Duplicate Invoice for payment with GR reference, should be sent directly to

Sr Manager/Finance/Valves-Bills section
HPBP BHEL Tiruchirappalli-620014, Tamilnadu.

To Purchase:

- FOR BHEL TRICHY case-** Copy of Invoice, Packing list, LWB and Delivery challan for reference, original IBR documents/Inspection despatch clearance certificates.
- FOR Site case-** Original Excise Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate, Original Inspection report, Test certificates as per PO, Original Site Acknowledgment etc...
- Identification:** Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all despatch documents, materials and packing clearly.

For Import suppliers:-

- With Consignment:** O&M manual and Packing List, Fumigation certificates (In case of SEA shipment).
- Through Bank:** All Original Documents in Triplicate Bill of lading in case of SEA/Airway Bill in case of AIR consignment, the invoice indicating the Unit price & total price, Packing List contains quantity, net & gross weight, Packing dimensions, Certificate of Origin, all Inspection test certificates, Guarantee/warranty certificates are to be sent through supplier's bankers to BHEL bankers
- To Purchase:** One copy of above non-negotiable documents are to be sent to purchase department after dispatch of the materials to follow up with freight forwarder.
- Identification:** Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all materials and packing clearly.

5. TENDER EVALUATION:

PART I (Techno-commercial Bid).

- All Vendors shall have atleast 3 supply experience for the supply of Xylan fasteners for corrosive environment and should submit the PO references, catalogue etc.
- All vendors should submit the report for adhesion of xylan coating on the fasteners and Salt fog test as per ASTM B 117 for ensuring the corrosion free surface after coating of Xylan.
- Point by point technical confirmation of all pages of our technical Drawings, TDC and commercial conditions are required with your sign and seal along with techno commercial Offer.
- Offers from supplier not having technical capability or not submitting the above said documents or not agreed for commercial terms, will be rejected
- Vendor who doesn't have manufacturing capacity/capabilities/credentials will be rejected.
- Item quote should be submitted in the BHEL format, annexure-3B
- Vendor who are not registered in BHEL Trichy, Product Material Directory (PMD) should register online in <https://www.bheltry.co.in/olsa/> and should submit copy of online registration form with part I bid.
- BHEL reserves right to visit vendor works before registration for verification of facilities.

PART II (Price Bid).

- Bidders qualified for part I will be intimated for participating in priced bid opening/Reverse Auction.
- L1 bidder will be decided based on landed cost for the item to BHEL.
- Price Bid should be in BHEL format, Annexure 3C.
- For evaluation, the exchange rate shall be taken as TT selling rate of SBI on date of Part-1 bid opening.

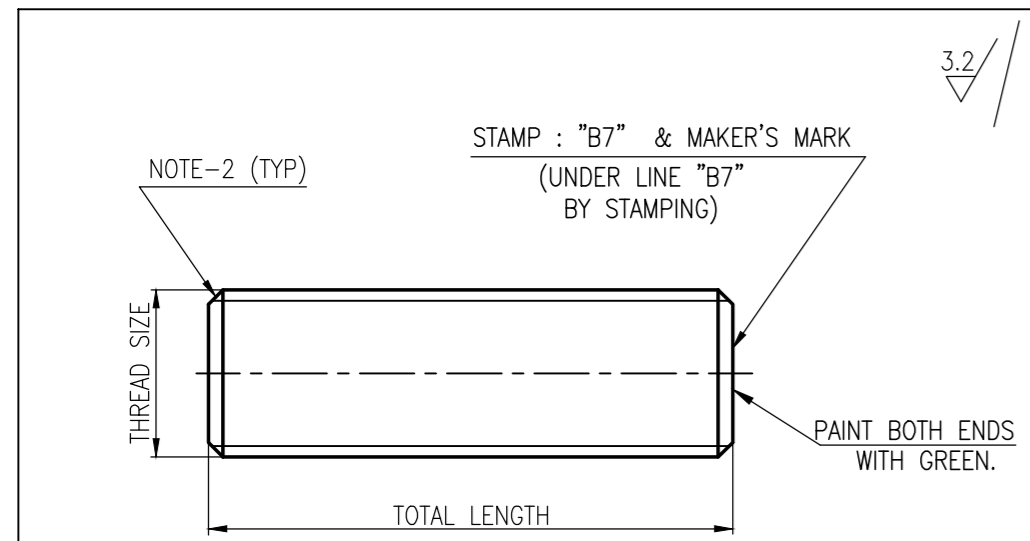
6. FRAUD PREVENTION POLICY:-

The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of the BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

ANNEXURE-2A

SI NO	BHEL Material	Matl_Description	General Specification	Drawing Ref	Quantity	Per Unit Assly Wt
1	964693270000	STUD,FT,W/2NUTS,3/4"X5-1/4",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z0120198	384	0.45
2	964693380000	STUD,FT,W/2NUTS,1-3/8"X10-1/4",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z1220198	480	2.78
3	964693390000	STUD,FT,W/2NUTS,1-3/8"X10-3/4",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z1320198	1908	2.88
4	964693410000	STUD,FT,W/2NUTS,1-1/2"X11-1/4",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z1520198	96	3.64
5	964693440000	STUD,FT,W/2NUTS,1-3/4"X15",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z1820198	128	6.56
6	964693450000	STUD,FT,W/2NUTS,1-7/8"X13-3/4",CC,Xylan	B7,2H,ZINC,Xylan	2V4Z1920198	1836	7.31
7	964693500000	STUD,FT,W/2NUTS,7/8"X6",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z0220200	450	0.7
8	964693510000	STUD,FT,W/2NUTS,1"X6-1/2",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z0320200	360	1.03
9	964693520000	STUD,FT,W/2NUTS,1"X6-3/4",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z0420200	24	1.05
10	964693540000	STUD,FT,W/2NUTS,1-1/8"X7-1/4",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z0620200	592	1.55
11	964693620000	STUD,FT,W/2NUTS,1-1/2"X10",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z1420200	18	3.37
12	964693670000	STUD,FT,W/2NUTS,1-7/8"X13-3/4",HH,Xylan	B7M,2HM,ZINC,Xylan	2V4Z1920200	234	7.31
13	964694030000	STUD,DE,W/NUT,1-5/8"X213,CC,Xylan-4Z25	B7,2H,ZINC,Xylan	2V4Z2520199	144	2.72
14	964694090000	STUD,DE,W/NUT,2"X258,CC,Xylan-4Z31	B7,2H,ZINC,Xylan	2V4Z3120199	120	5.37
15	964694120000	STUD,DE,W/NUT,3/4"X100,HH,Xylan-4Z02	B7M,2HM,ZINC,Xylan	2V4Z0220201	672	0.3
16	964694140000	STUD,DE,W/NUT,7/8"X115,HH,Xylan-4Z04	B7M,2HM,ZINC,Xylan	2V4Z0420201	376	0.46
17	964694170000	STUD,DE,W/NUT,1"X117,HH,Xylan-4Z07	B7M,2HM,ZINC,Xylan	2V4Z0720201	24	0.63
18	964694190000	STUD,DE,W/NUT,1"X125,HH,Xylan-4Z09	B7M,2HM,ZINC,Xylan	2V4Z0920201	256	0.67
19	964694210000	STUD,DE,W/NUT,1-1/8"X131,HH,Xylan-4Z11	B7M,2HM,ZINC,Xylan	2V4Z1120201	154	0.88
20	964694220000	STUD,DE,W/NUT,1-1/8"X142,HH,Xylan-4Z12	B7M,2HM,ZINC,Xylan	2V4Z1220201	514	0.91
21	964694230000	STUD,DE,W/NUT,1-1/4"X150,HH,Xylan-4Z13	B7M,2HM,ZINC,Xylan	2V4Z1320201	184	1.22
22	964694320000	STUD,DE,W/NUT,1-1/2"X186,HH,Xylan-4Z22	B7M,2HM,ZINC,Xylan	2V4Z2220201	600	2.15
		Total Quantity			9554	

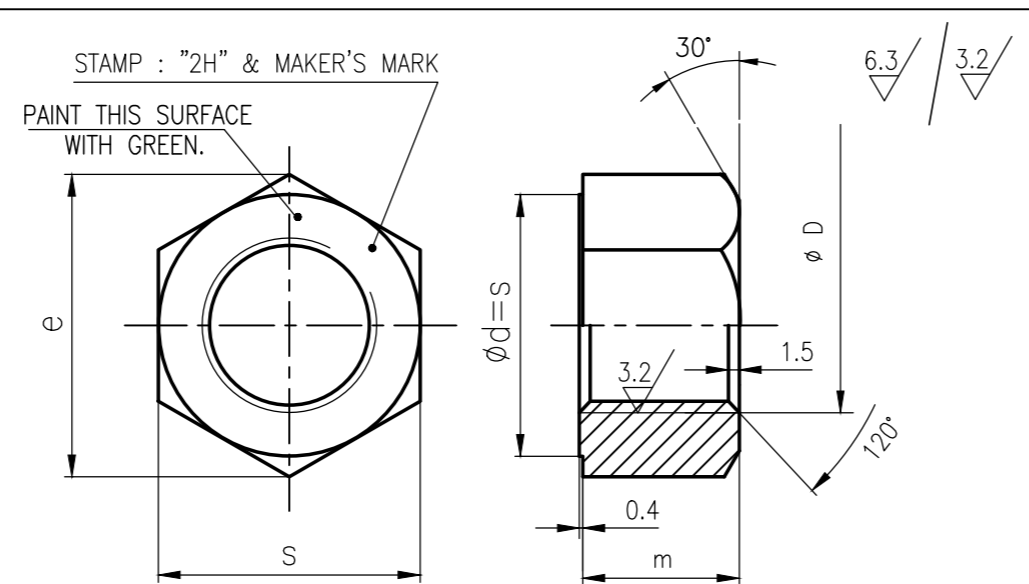
ASSEMBLY DETAILS						DETAILS OF ITEM No. 001					DETAILS OF ITEM No. 002						REMARKS			
SL. No.	DRAWING NUMBER	MATERIAL CODE	API DESIGNATION	FLANGE RATINGS	ASSY wt./kg	MATL. SPECN.	HEAT TREATMENT	THREAD SIZE	TOTAL LENGTH	UNIT Wt (kg)	Ø D	MATL. SPECN.	HEAT TREATMENT	s		e		m		UNIT Wt (kg)
														MAX	MIN	MAX	MIN	MAX	MIN	
01	2-V-4Z00-20198	96 469 326	5/8"x4-1/2"	2-1/16"-2000	0.26			5/8"-11UNC-2A	125 ±1.5	0.19	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033
02	2-V-4Z01-20198	96 469 327	3/4"x5-1/4"	2-1/16"-10000	0.45			3/4"-10UNC-2A	140 ±1.5	0.30	3/4"-10UNC-2B			31.75	30.79	36.65	35.11	19.25	18.04	0.076
03	2-V-4Z02-20198	96 469 328	7/8"x6"	2-1/16"-5000	0.70			7/8"-9UNC-2A	162 ±1.5	0.48	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108
04	2-V-4Z03-20198	96 469 329	1"x 6-1/2"	2-9/16"-5000	1.03			1"-8UNC-2A	177 ±1.5	0.70	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165
05	2-V-4Z04-20198	96 469 330	1"x6-3/4"	3-1/16"-10000	1.05				182 ±1.5	0.72										
06	2-V-4Z05-20198	96 469 331	1-1/8"x7"	4-1/16"-3000	1.48				192 ±1.5	0.95										
07	2-V-4Z06-20198	96 469 332	1-1/8"x7-1/4"	3-1/8"-5000	1.55			1-1/8"-8UN-2A	201 ±1.5	1.01	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266
08	2-V-4Z07-20198	96 469 333	1-1/8"x8"	7-1/16"-3000	1.58				217 ±1.5	1.05										
09	2-V-4Z08-20198	96 469 334	1-1/4"x8"	4-1/16"-5000	2.03				220 ±1.5	1.33	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35
10	2-V-4Z09-20198	96 469 335	1-1/4"x9"	13-5/8"-2000	2.18			1-1/4"-8UN-2A	245 ±1.5	1.48										
11	2-V-4Z10-20198	96 469 336	1-3/8" x 9"	9"-3000	2.55				245 ±1.5	1.82										
12	2-V-4Z11-20198	96 469 337	1-3/8" x 9-1/2"	11"-3000	2.63			1-3/8"-8UN-2A	256 ±1.5	1.90	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364
13	2-V-4Z12-20198	96 469 338	1-3/8"x10-1/4"	13-5/8"-3000	2.78				275 ±1.5	2.05										
14	2-V-4Z13-20198	96 469 339	1-3/8"x10-3/4"	7-1/16"-5000	2.88				290 ±1.5	2.15										
15	2-V-4Z14-20198	96 469 340	1-1/2"x10"	5-1/8"-5000	3.37			1-1/2"-8UN-2A	273 ±1.5	2.40	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485
16	2-V-4Z15-20198	96 469 341	1-1/2"x11-1/4"	7-1/16"-10000	3.64				300 ±1.5	2.67										
17	2-V-4Z16-20198	96 469 342	1-5/8"x11-3/4"	21-1/4"-2000	4.26			1-5/8"-8UN-2A	318 ±1.5	3.26	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50
18	2-V-4Z17-20198	96 469 343	1-5/8" x 12-1/2"	13-5/8"-5000	4.44				332 ±1.5	3.44										
19	2-V-4Z18-20198	96 469 344	1-3/4"x15"	11"-10000	6.56			1-3/4"-8UN-2A	400 ±1.5	4.70	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93
20	2-V-4Z19-20198	96 469 345	1-7/8"x13-3/4"	11"-5000	7.31			1-7/8"-8UN-2A	368 ±1.5	4.95	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18
21	2-V-4Z20-20198	96 469 346	1-7/8"x17-1/4"	13-5/8"-10000	8.66				458 ±1.5	6.30										
22	2-V-4Z21-20198	96 469 347	2"x14-1/2"	20-3/4"-3000	8.84			2"-8UN-2A	391 ±1.5	6.10	2"-8UN-2B			79.37	76.84	91.64	87.61	51.13	48.90	1.37



ITEM No. 001

NOTES:-

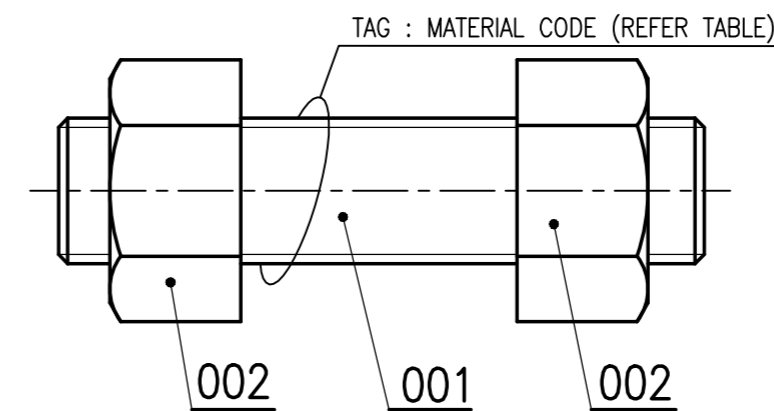
- MATERIAL : ASTM A193-GR.B7 AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- 45° CHAMFER FIRST THREAD
- STUD BOLTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
- TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



ITEM No. 002

NOTES:-

- MATERIAL : ASTM A194-GR.2H AS PER LATEST APPLICABLE QUALITY PROCEDURE
- NUTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- FOR OTHER DIMENSIONS REFER ANSI B18.2.2 (HEAVY HEX.NUT)
- TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
- TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



STUD BOLT WITH 2 NUTS

NOTES:-

- ALL STUDS SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE AND SHOULD ASSEMBLED WITH TWO NUTS.

PSL-1,2,3 & 4
TEMP. RATING : P,U
MATL. CLASS : AA,BB & CC

No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No	
	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT (WITH ZINC PLATED YELLOW CHROMATE & XYLAN COATED-BLUE COLOUR)									
	FOR GENERAL SERVICE									
	BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI - 620014.			DRN	R.NATARAJAN	SIGN	DATE	NO.OF VAR.		
				CHD	P.ARUNKUMAR	P. Arj	28-03-2015			
				APPD	R.ELAYARAJA	R. Elaya	28-03-2015			
DCP No.	ALTERED	APPD								
REV	CHD	DATE								
ZONE										
UNLESS OTHERWISE SPECIFIED										
BREAK SHARP CORNERS : 0.25										
FILLET RADII : 0.76±0.12										
CONCENTRICITY : 0.25 FIM										
SQUARNESS : 0.25 IN 254										
PARALLELISM : 0.25 IN 254										
RFS EXCEPT WHEN (M) MODIFIED.										
CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.										
DEPT VL				SCALE N T S		WEIGHT (KG).		REFERENCE INFORMATION		NO. OF ITEMS
CODE 340										
TITLE				CARD CODE		DRAWING NO.		REV		
STUD-FULL THREADED WITH 2 NUTS				U 01		2-V-0000-20198				

ASSEMBLY DETAILS

DETAILS OF ITEM No. 001

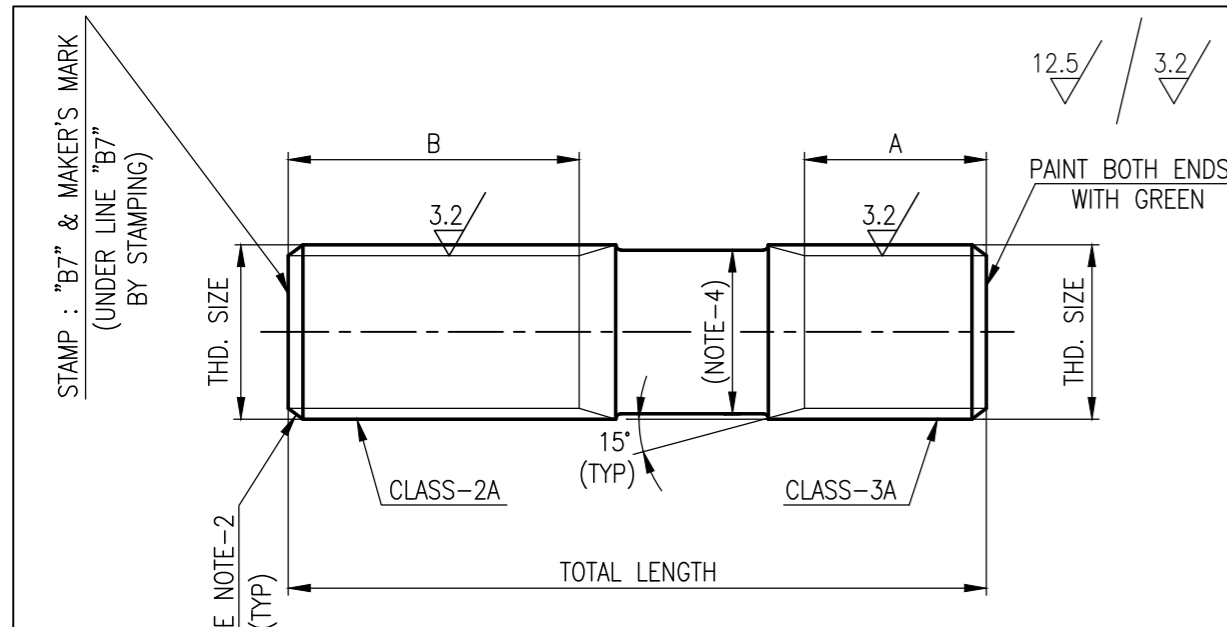
DETAILS OF ITEM No. 002

REMARKS

SL. No.	DRAWING NUMBER	MATERIAL CODE	FLANGE RATINGS	ASSY wt./kg	MATL. SPECN.	HEAT TREATMENT	THREAD SIZE	+1.5		TOTAL LENGTH ±1.5	UNIT Wt (kg)	ø D	MATL. SPECN.	HEAT TREATMENT	s		e		m		UNIT Wt (kg)	REMARKS
								A	B						MAX	MIN	MAX	MIN	MAX	MIN		
01	2-V-4Z00-20199	96 469 378	2-1/16" - 2000	0.14			5/8" - 11UNC	16	44.5	73	0.11	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033	
02	2-V-4Z01-20199	96 469 379	2-1/16" - 2000	0.17			5/8" - 11UNC	16	45	90	0.14	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033	
03	2-V-4Z02-20199	96 469 380	2-1/16" - 10000	0.30			3/4" - 10UNC	21	38	100	0.22	3/4"-10UNC-2B			31.75	30.79	36.65	35.11	19.25	18.04	0.076	
04	2-V-4Z03-20199	96 469 381	—	0.36			7/8" - 9UNC	34	42	91	0.25	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
05	2-V-4Z04-20199	96 469 382	2-1/16" - 5000	0.46			7/8" - 9UNC	24.5	58	115	0.35	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
06	2-V-4Z05-20199	96 469 383	—	0.47			7/8" - 9UNC	27.5	45	99	0.30	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
07	2-V-4Z06-20199	96 469 384	3-1/8"-5000(WKM)	0.59			7/8" - 9UNC	27.5	46	106	0.42	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
08	2-V-4Z07-20199	96 469 385	3-1/16" - 10000	0.63			1" - 8UNC	27.5	46	117	0.46	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
09	2-V-4Z08-20199	96 469 386	2-9/16" - 5000	0.58			1" - 8UNC	27.5	64	124	0.41	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
10	2-V-4Z09-20199	96 469 387	2-9/16" - 5000	0.67			1" - 8UNC	30	65	125	0.50	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
11	2-V-4Z10-20199	96 469 388	3-1/8" - 5000	0.70			1" - 8UNC	30	70	133	0.53	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
12	2-V-4Z11-20199	96 469 389	3-1/8" - 5000	0.88			1-1/8" - 8UN	31	70	131	0.61	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266	FOR FBV
13	2-V-4Z12-20199	96 469 390	3-1/8" - 5000	0.91			1-1/8" - 8UN	31	77	142	0.64	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266	FOR FBV
14	2-V-4Z13-20199	96 469 391	4-1/16" - 5000	1.22			1-1/4" - 8UN	34	77	150	0.87	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
15	2-V-4Z14-20199	96 469 392	13-5/8" - 2000	1.35			1-1/4" - 8UN	34	87	162	1.00	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
16	2-V-4Z15-20199	96 469 393	4-1/16" - 5000	1.70			1-1/4" - 8UN	34	83	230	1.35	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
17	2-V-4Z16-20199	96 469 394	9" - 3000	1.61			1-3/8" - 8UN	37	76	170	1.25	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
18	2-V-4Z17-20199	96 469 395	11" - 3000	1.67			1-3/8" - 8UN	37	89	175	1.30	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
19	2-V-4Z18-20199	96 469 396	13-5/8" - 3000	1.71			1-3/8" - 8UN	37	83	181	1.35	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
20	2-V-4Z19-20199	96 469 397	7-1/16" - 5000	1.70			1-3/8" - 8UN	37	102	188	1.34	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
21	2-V-4Z20-20199	96 469 398	5-1/8" - 5000	2.00			1-3/8" - 8UN	44	74	165	1.47	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
22	2-V-4Z21-20199	96 469 399	3-1/16" - 10000	2.10			1-1/2" - 8UN	40	90	181	1.61	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
23	2-V-4Z22-20199	96 469 400	5-1/8" - 5000	2.15			1-1/2" - 8UN	44	74	186	1.66	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
24	2-V-4Z23-20199	96 469 401	7-1/16" - 10000	2.19			1-1/2" - 8UN	40	102	200	1.70	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
25	2-V-4Z24-20199	96 469 402	9" - 10000	2.39			1-1/2" - 8UN	40	90	219	1.90	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
26	2-V-4Z25-20199	96 469 403	13-5/8" - 5000	2.72			1-5/8" - 8UN	43.5	89	213	2.22	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50	FOR FBV
27	2-V-4Z26-20199	96 469 404	—	2.83			1-5/8" - 8UN	53	70	165	1.90	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50	FOR FBV
28	2-V-4Z27-20199	96 469 405	11" - 10000	3.93			1-3/4" - 8UN	46.5	115	251	3.00	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93	FOR FBV
29	2-V-4Z28-20199	96 469 406	11" - 5000	4.5			1-3/4" - 8UN	50	108	238	3.32	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93	FOR FBV
30	2-V-4Z29-20199	96 469 407	16-3/4" - 5000	4.6			1-7/8" - 8UN	50	115	245	3.41	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18	FOR FBV
31	2-V-4Z30-20199	96 469 408	13-5/8" - 10000	5.02			1-7/8" - 8UN	50	115	283	3.84	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18	FOR FBV
32	2-V-4Z31-20199	96 469 409	20-3/4" - 3000	5.37			2" - 8UN	53	113	258	4.00	2"-8UN-2B			79.37	76.84	91.64	87.61	51.13	48.90	1.37	FOR FBV

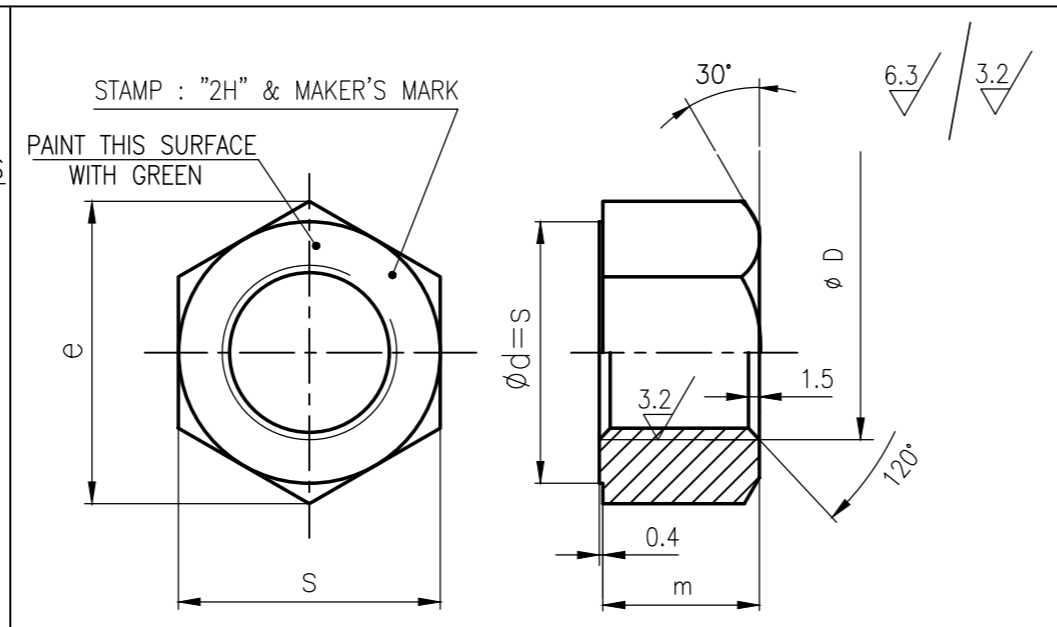
REFER NOTES 1 AND 3

REFER NOTES 1 AND 3



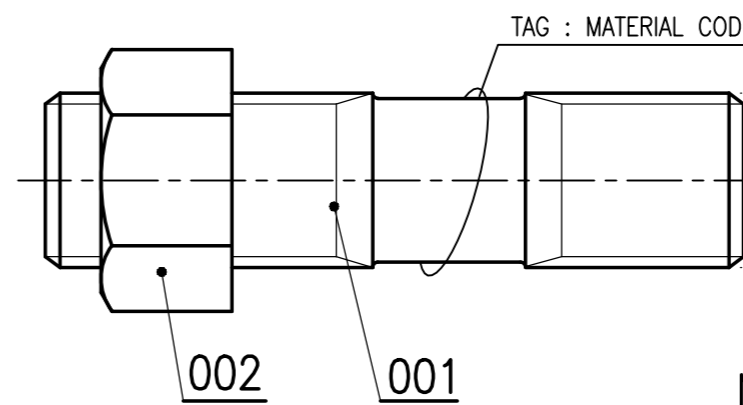
ITEM No. 001

- NOTES:-**
- MATERIAL : ASTM A193-GR.B7 AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - 45° CHAMFER FIRST THREAD
 - STUD BOLTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
 - TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



ITEM No. 002

- NOTES:-**
- MATERIAL : ASTM A194-GR.2H AS PER LATEST APPLICABLE QUALITY PROCEDURE
 - NUTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - FOR OTHER DIMENSIONS REFER ANSI B18.2.2 (HEAVY HEX.NUT)
 - TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
 - TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



STUD WITH 1 NUT

- NOTES:-**
- ALL STUDS SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE AND SHOULD ASSEMBLED WITH ONE NUT IN CLASS-2A END.

PSL-1,2,3 & 4
TEMP. RATING : P,U
MATL. CLASS : AA,BB & CC

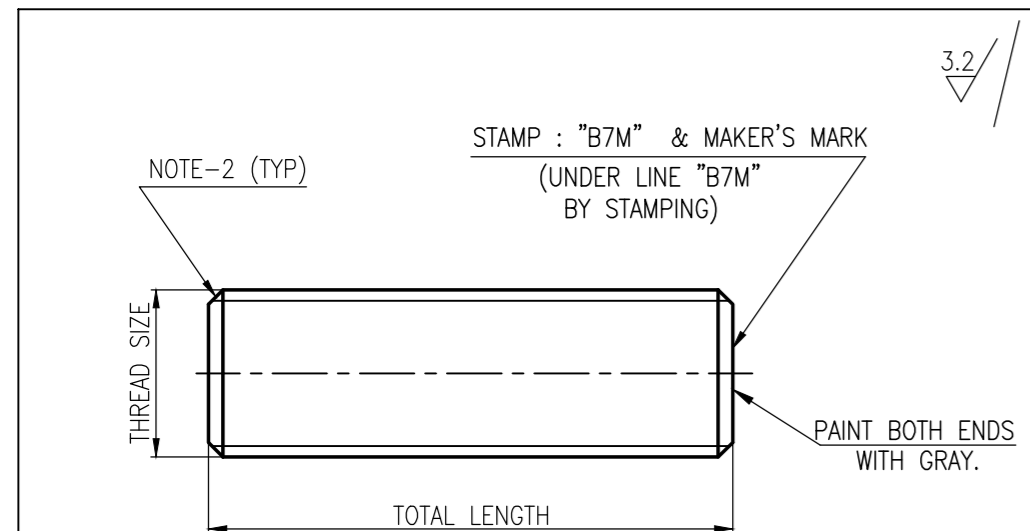
UNLESS OTHERWISE SPECIFIED

BREAK SHARP CORNERS	: 0.25
FILLET RADII	: 0.76±0.12
CONCENTRICITY	: 0.25 FIM
SQUARNESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	TYPE OF PRODUCT								
	OR NAME OF CUSTOMER/PROJECT								
	FOR GENERAL SERVICE (WITH ZINC PLATED YELLOW CHROMATE & XYLAN COATED-BLUE COLOUR)								
	BHARAT HEAVY ELECTRICALS LTD.,		DRN	NAME	SIGN	DATE	NO.OF VAR.		
	UNIT: HIGH PRESSURE BOILER PLANT.		CHD	P.ARUNKUMAR	P. Arj	28-03-2015			
	TIRUCHIRAPALLI - 620014.		APPD	R.ELAYARAJA	R. Elaya	28-03-2015			
	DEPT	SCALE	WEIGHT (KG).	REFERENCE INFORMATION			NO. OF ITEMS		
	VL	N T S							
	CODE			TITLE	CARD CODE	DRAWING NO.	REV		
	340			STUD-DOUBLE ENDED WITH 1 NUT	U 01	2-V-0000-20199			

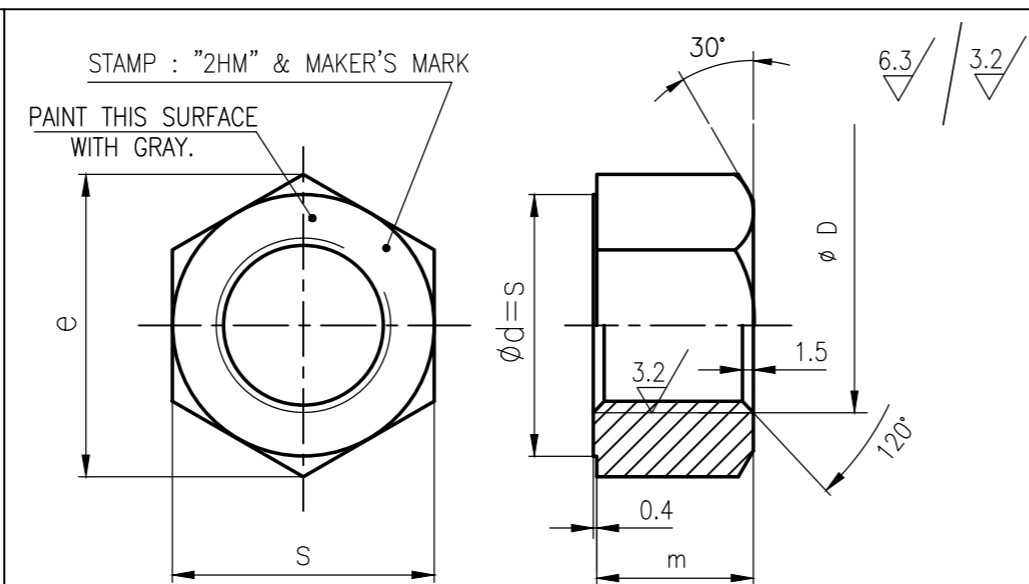
ASSEMBLY DETAILS						DETAILS OF ITEM No. 001					DETAILS OF ITEM No. 002							REMARKS		
SL. No.	DRAWING NUMBER	MATERIAL CODE	API DESIGNATION	FLANGE RATINGS	ASSY wt./kg	MATL. SPECN.	HEAT TREATMENT	THREAD SIZE	TOTAL LENGTH	UNIT Wt (kg)	Ø D	MATL. SPECN.	HEAT TREATMENT	s		e			m	
														MAX	MIN	MAX	MIN	MAX	MIN	
01	2-V-4Z00-20200	96 469 348	5/8"x4-1/2"	2-1/16"-2000	0.26			5/8"-11UNC-2A	125 ±1.5	0.19	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033
02	2-V-4Z01-20200	96 469 349	3/4"x5-1/4"	2-1/16"-10000	0.45			3/4"-10UNC-2A	140 ±1.5	0.30	3/4"-10UNC-2B			31.75	30.79	36.65	35.11	19.25	18.04	0.076
03	2-V-4Z02-20200	96 469 350	7/8"x6"	2-1/16"-5000	0.70			7/8"-9UNC-2A	162 ±1.5	0.48	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108
04	2-V-4Z03-20200	96 469 351	1"x 6-1/2"	2-9/16"-5000	1.03			1"-8UNC-2A	177 ±1.5	0.70	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165
05	2-V-4Z04-20200	96 469 352	1"x 6-3/4"	3-1/16"-10000	1.05				182 ±1.5	0.72										
06	2-V-4Z05-20200	96 469 353	1-1/8"x7"	4-1/16"-3000	1.48				192 ±1.5	0.95										
07	2-V-4Z06-20200	96 469 354	1-1/8"x7-1/4"	3-1/8"-5000	1.55			1-1/8"-8UN-2A	201 ±1.5	1.01	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266
08	2-V-4Z07-20200	96 469 355	1-1/8"x8"	7-1/16"-3000	1.58				217 ±1.5	1.05										
09	2-V-4Z08-20200	96 469 356	1-1/4"x8"	4-1/16"-5000	2.03			1-1/4"-8UN-2A	220 ±1.5	1.33	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35
10	2-V-4Z09-20200	96 469 357	1-1/4"x9"	13-5/8"-2000	2.18				245 ±1.5	1.48										
11	2-V-4Z10-20200	96 469 358	1-3/8" x 9"	9"-3000	2.55				245 ±1.5	1.82										
12	2-V-4Z11-20200	96 469 359	1-3/8" x 9-1/2"	11"-3000	2.63			1-3/8"-8UN-2A	256 ±1.5	1.90	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364
13	2-V-4Z12-20200	96 469 360	1-3/8"x10-1/4"	13-5/8"-3000	2.78				275 ±1.5	2.05										
14	2-V-4Z13-20200	96 469 361	1-3/8"x10-3/4"	7-1/16"-5000	2.88				290 ±1.5	2.15										
15	2-V-4Z14-20200	96 469 362	1-1/2"x10"	5-1/8"-5000	3.37			1-1/2"-8UN-2A	273 ±1.5	2.40	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485
16	2-V-4Z15-20200	96 469 363	1-1/2"x11-1/4"	7-1/16"-10000	3.64				300 ±1.5	2.67										
17	2-V-4Z16-20200	96 469 364	1-5/8"x11-3/4"	21-1/4"-2000	4.26			1-5/8"-8UN-2A	318 ±1.5	3.26	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50
18	2-V-4Z17-20200	96 469 365	1-5/8" x 12-1/2"	13-5/8"-5000	4.44				332 ±1.5	3.44										
19	2-V-4Z18-20200	96 469 366	1-3/4"x15"	11"-10000	6.56			1-3/4"-8UN-2A	400 ±1.5	4.70	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93
20	2-V-4Z19-20200	96 469 367	1-7/8"x13-3/4"	11"-5000	7.31				368 ±1.5	4.95										
21	2-V-4Z20-20200	96 469 368	1-7/8"x17-1/4"	13-5/8"-10000	8.66			1-7/8"-8UN-2A	458 ±1.5	6.30	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18
22	2-V-4Z21-20200	96 469 369	2"x14-1/2"	20-3/4"-3000	8.84			2"-8UN-2A	391 ±1.5	6.10	2"-8UN-2B			79.37	76.84	91.64	87.61	51.13	48.90	1.37



ITEM No. 001

NOTES:-

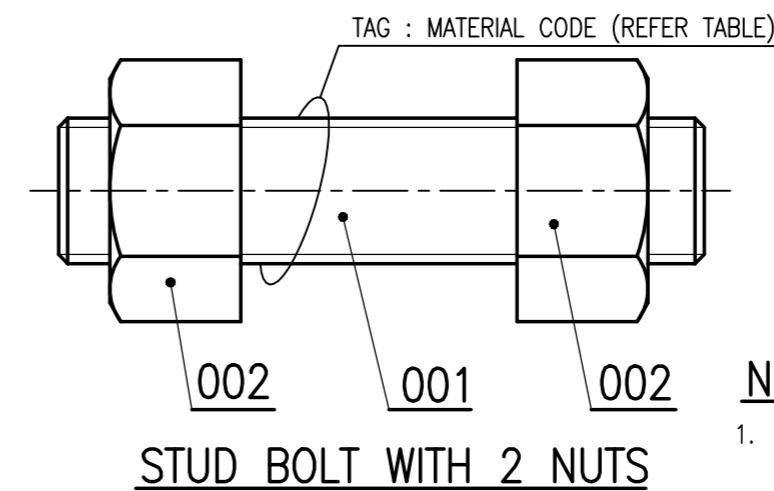
- MATERIAL : ASTM A193-GR.B7M AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- 45° CHAMFER FIRST THREAD
- STUD BOLTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
- TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



ITEM No. 002

NOTES:-

- MATERIAL : ASTM A194-GR.2HM AS PER LATEST APPLICABLE QUALITY PROCEDURE
- NUTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
- FOR OTHER DIMENSIONS REFER ANSI B18.2.2 (HEAVY HEX.NUT)
- TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
- TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



STUD BOLT WITH 2 NUTS

NOTES:-

- ALL STUDS SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE AND SHOULD ASSEMBLED WITH TWO NUTS.

PSL-1,2,3 & 4

TEMP. RATING : P,U

MATL. CLASS : DD,EE,FF,HH &

NACE MR-01-75 CL-II

UNLESS OTHERWISE SPECIFIED	
BREAK SHARP CORNERS	: 0.25
FILLET RADII	: 0.76±0.12
CONCENTRICITY	: 0.25 FIM
SQUARNESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

DCP No.	ALTERED	APPD
REV	CHD	DATE
ZONE		

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT (WITH ZINC PLATED YELLOW CHROMATE & XYLAN COATED-BLUE COLOUR)								
	FOR SOUR SERVICE								
	BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI - 620014.			DRN	R.NATARAJAN	SIGN	DATE	NO.OF VAR.	
				CHD	P.ARUNKUMAR	SIGN	28-03-2015		
				APPD	R.ELAYARAJA	SIGN	28-03-2015		
	DEPT VL	SCALE N T S	WEIGHT (KG).	REFERENCE INFORMATIONS			NO. OF ITEMS		
	CODE 340								
	TITLE			CARD CODE	DRAWING NO.		REV		
	STUD-FULL THREADED WITH 2 NUTS			U 01	2-V-0000-20200				

ASSEMBLY DETAILS

DETAILS OF ITEM No. 001

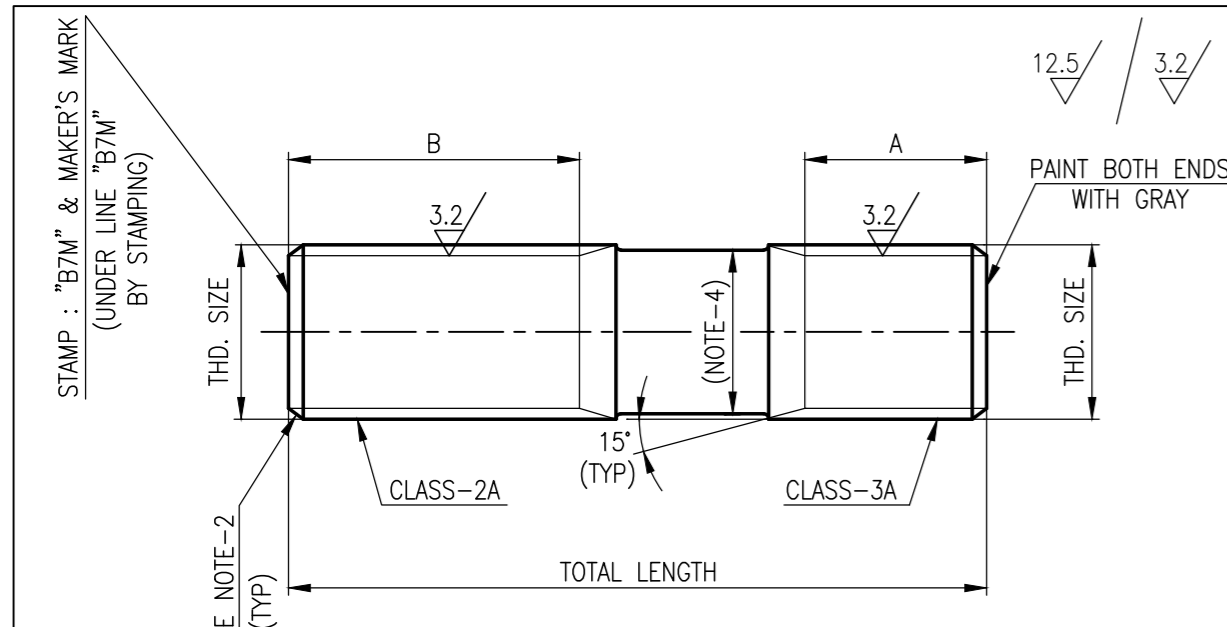
DETAILS OF ITEM No. 002

REMARKS

SL. No.	DRAWING NUMBER	MATERIAL CODE	FLANGE RATINGS	ASSY wt./kg	MATL. SPECN.	HEAT TREATMENT	THREAD SIZE	+1.5		TOTAL LENGTH ±1.5	UNIT Wt (kg)	ø D	MATL. SPECN.	HEAT TREATMENT	s		e		m		UNIT Wt (kg)	REMARKS
								A	B						MAX	MIN	MAX	MIN	MAX	MIN		
01	2-V-4Z00-20201	96 469 410	2-1/16" - 2000	0.14			5/8" - 11UNC	16	44.5	73	0.11	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033	
02	2-V-4Z01-20201	96 469 411	2-1/16" - 2000	0.17			5/8" - 11UNC	16	45	90	0.14	5/8"-11UNC-2B			26.97	26.19	31.36	29.85	16.02	14.91	0.033	
03	2-V-4Z02-20201	96 469 412	2-1/16" - 10000	0.30			3/4" - 10UNC	21	38	100	0.22	3/4"-10UNC-2B			31.75	30.79	36.65	35.11	19.25	18.04	0.076	
04	2-V-4Z03-20201	96 469 413	—	0.36			7/8" - 9UNC	34	42	91	0.25	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
05	2-V-4Z04-20201	96 469 414	2-1/16" - 5000	0.46			7/8" - 9UNC	24.5	58	115	0.35	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
06	2-V-4Z05-20201	96 469 415	—	0.47			7/8" - 9UNC	27.5	45	99	0.30	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
07	2-V-4Z06-20201	96 469 416	3-1/8"-5000(WKM)	0.59			7/8" - 9UNC	27.5	46	106	0.42	7/8"-9UNC-2B			36.52	35.41	42.16	40.37	22.47	21.16	0.108	
08	2-V-4Z07-20201	96 469 417	3-1/16" - 10000	0.63			1" - 8UNC	27.5	46	117	0.46	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
09	2-V-4Z08-20201	96 469 418	2-9/16" - 5000	0.58			1" - 8UNC	27.5	64	124	0.41	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
10	2-V-4Z09-20201	96 469 419	2-9/16" - 5000	0.67			1" - 8UNC	30	65	125	0.50	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
11	2-V-4Z10-20201	96 469 420	3-1/8" - 5000	0.70			1" - 8UNC	30	70	133	0.53	1"-8UNC-2B			41.27	40.01	47.65	45.62	25.70	24.29	0.165	
12	2-V-4Z11-20201	96 469 421	3-1/8" - 5000	0.88			1-1/8" - 8UN	31	70	131	0.61	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266	FOR FBV
13	2-V-4Z12-20201	96 469 422	3-1/8" - 5000	0.91			1-1/8" - 8UN	31	77	142	0.64	1-1/8"-8UN-2B			46.02	44.61	53.16	50.86	28.93	27.41	0.266	FOR FBV
14	2-V-4Z13-20201	96 469 423	4-1/16" - 5000	1.22			1-1/4" - 8UN	34	77	150	0.87	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
15	2-V-4Z14-20201	96 469 424	13-5/8" - 2000	1.35			1-1/4" - 8UN	34	87	162	1.00	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
16	2-V-4Z15-20201	96 469 425	4-1/16" - 5000	1.70			1-1/4" - 8UN	34	83	230	1.35	1-1/4"-8UN-2B			50.80	49.23	58.64	56.11	31.77	30.15	0.35	FOR FBV
17	2-V-4Z16-20201	96 469 426	9" - 3000	1.61			1-3/8" - 8UN	37	76	170	1.25	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
18	2-V-4Z17-20201	96 469 427	11" - 3000	1.67			1-3/8" - 8UN	37	89	175	1.30	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
19	2-V-4Z18-20201	96 469 428	13-5/8" - 3000	1.71			1-3/8" - 8UN	37	83	181	1.35	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
20	2-V-4Z19-20201	96 469 429	7-1/16" - 5000	1.70			1-3/8" - 8UN	37	102	188	1.34	1-3/8"-8UN-2B			55.57	53.83	64.16	61.37	35.00	33.28	0.364	FOR FBV
21	2-V-4Z20-20201	96 469 430	5-1/8" - 5000	2.00			1-1/2" - 8UN	44	74	165	1.47	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
22	2-V-4Z21-20201	96 469 431	3-1/16" - 10000	2.10			1-1/2" - 8UN	40	90	181	1.61	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
23	2-V-4Z22-20201	96 469 432	5-1/8" - 5000	2.15			1-1/2" - 8UN	44	74	186	1.66	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
24	2-V-4Z23-20201	96 469 433	7-1/16" - 10000	2.19			1-1/2" - 8UN	40	102	200	1.70	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
25	2-V-4Z24-20201	96 469 434	9" - 10000	2.39			1-1/2" - 8UN	40	90	219	1.90	1-1/2"-8UN-2B			60.32	58.42	69.64	66.60	38.22	36.40	0.485	FOR FBV
26	2-V-4Z25-20201	96 469 435	13-5/8" - 5000	2.72			1-5/8" - 8UN	43.5	89	213	2.22	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50	FOR FBV
27	2-V-4Z26-20201	96 469 436	—	2.83			1-5/8" - 8UN	53	70	165	1.90	1-5/8"-8UN-2B			65.07	63.02	75.15	71.84	41.45	39.53	0.50	FOR FBV
28	2-V-4Z27-20201	96 469 437	11" - 10000	3.93			1-3/4" - 8UN	46.5	115	251	3.00	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93	FOR FBV
29	2-V-4Z28-20201	96 469 438	11" - 5000	4.5			1-3/4" - 8UN	50	108	238	3.32	1-3/4"-8UN-2B			69.85	67.62	80.64	77.09	44.67	42.65	0.93	FOR FBV
30	2-V-4Z29-20201	96 469 439	16-3/4" - 5000	4.6			1-7/8" - 8UN	50	115	245	3.41	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18	FOR FBV
31	2-V-4Z30-20201	96 469 440	13-5/8" - 10000	5.02			1-7/8" - 8UN	50	115	283	3.84	1-7/8"-8UN-2B			74.62	72.24	86.15	82.35	47.90	45.78	1.18	FOR FBV
32	2-V-4Z31-20201	96 469 441	20-3/4" - 3000	5.37			2" - 8UN	53	113	258	4.00	2"-8UN-2B			79.37	76.84	91.64	87.61	51.13	48.90	1.37	FOR FBV

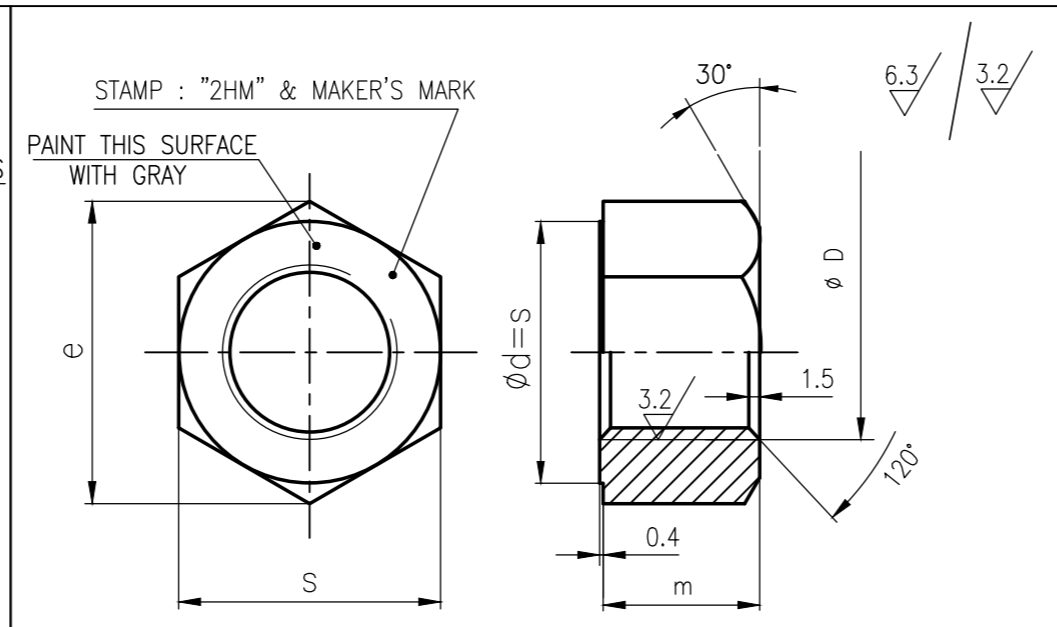
REFER NOTES 1 AND 3

REFER NOTES 1 AND 3



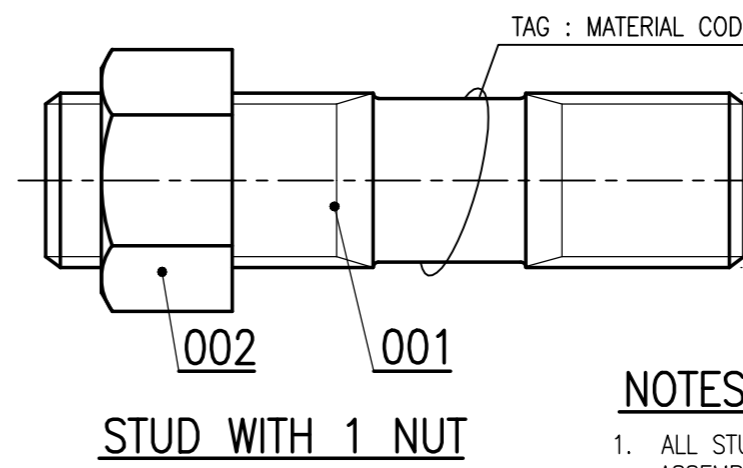
ITEM No. 001

- NOTES:-
- MATERIAL : ASTM A193-GR.B7M AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - 45° CHAMFER FIRST THREAD
 - STUD BOLTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
 - TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



ITEM No. 002

- NOTES:-
- MATERIAL : ASTM A194-GR.2HM AS PER LATEST APPLICABLE QUALITY PROCEDURE
 - NUTS SHALL BE HARDNESS TESTED FOR AN ACCEPTABLE HARDNESS AS PER LATEST APPLICABLE QUALITY PROCEDURE.
 - FOR OTHER DIMENSIONS REFER ANSI B18.2.2 (HEAVY HEX.NUT)
 - TO BE ZINC PLATED WITH YELLOW CHROMATE FOR A DEPTH OF 0.005 TO 0.01mm
 - TO BE XYLAN COATED AFTER ZINC COATING :
 - GRADE OF TEFLON ON : XYLAN 1070
 - MAX. SERVICE TEMPERATURE : 285°C
 - COATING THICKNESS : 25 TO 30 MICRONS.
 - COLOUR : BLUE



STUD WITH 1 NUT

NOTES:-

- ALL STUDS SHOULD BE PACKED SUITABLY TO AVOID THREAD DAMAGE AND SHOULD ASSEMBLED WITH ONE NUT IN CLASS-2A END.

PSL-1,2,3 & 4
 TEMP. RATING : P,U
 MATL. CLASS : DD,EE,FF,HH &
 NACE MR-01-75-CL-II

UNLESS OTHERWISE SPECIFIED

BREAK SHARP CORNERS	: 0.25
FILLET RADII	: 0.76±0.12
CONCENTRICITY	: 0.25 FIM
SQUARNESS	: 0.25 IN 254
PARALLELISM	: 0.25 IN 254
RFS EXCEPT WHEN (M) MODIFIED.	

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

DCP No.	ALTERED	APPD
REV	CHD	DATE
ZONE		

No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No	ITEM No
	TYPE OF PRODUCT								
	OR NAME OF CUSTOMER/PROJECT								
	FOR SOUR SERVICE (WITH ZINC PLATED YELLOW CHROMATE & XYLAN COATED-BLUE COLOUR)								
	BHARAT HEAVY ELECTRICALS LTD.,		DRN	NAME	SIGN	DATE	NO.OF VAR.		
	UNIT: HIGH PRESSURE BOILER PLANT.		CHD	R.NATARAJAN	[Signature]	28-03-2015			
	TIRUCHIRAPALLI - 620014.		APPD	P.ARUNKUMAR	[Signature]	28-03-2015			
	DEPT	SCALE	WEIGHT (KG).	REFERENCE INFORMATION			NO.OF ITEMS		
	VL	N T S							
	CODE 340								
	TITLE			CARD CODE	DRAWING NO.		REV		
	STUD-DOUBLE ENDED WITH 1 NUT			U 01	2-V-0000-20201				

1.0 MATERIAL SPECIFICATION

SA 193 Gr B7/B7M/B16{latest material standard as per Purchase Order (P.O.)}

2.0 GENERAL

This TDC is suitable for API 6A applications including NACE MR-01-75 Cl.II & Cl.III also.

Shall be manufactured to the relevant size in the drawing & P.O.requirements.

Hot rolled & Cold drawn bars, if used shall be machined at least 2mm(minimum)in radius (ie 4mm in dia) to remove the seams completely. After machining atleast 10% of the bars shall be tested by MPI to ensure that the surface defects are fully removed.

For HT of finished studs/bolts, salt bath or controlled atmosphere furnace to be used,

After HT, the threads shall be thoroughly cleaned to remove all deposits. If acid pickling is done for cleaning, it shall be as per Cl.7.4.

Cadmium plating(Cl.7.1)/Galvanising(Cl.7.2) if specified in Drg/P.O.For all other cases rust preventive fluid coating (Cl.7.3) shall be done.

3.0 CHEMICAL & MECHANICAL PROPERTIES

Mill certificate from steel manufacturer for conformance to the chemistry heat-wise. Additionally, product analysis shall be done for one piece/heat by the stud/bolt manufacturer.

One Tensile test/heat/size/ HT batch in the finished heat-treated condition as per SA193.

HARDNESS

For SA193 B7 & B16:

Hardness check shall be carried out on finished stud/bolt as per SA193,at least in 10% of the lot.Hardness in the finished stud/bolt shall be 25 to 34 HRC or 253 to 319 BHN.For other grades hardness value shall be as per the material specification.

NDE

Magnetic particle inspection shall be carried out in atleast 10% of the finished stud/bolt of all grades.Cracks/Linear indications are unacceptable.

For SA193 B7M:

Hardness check on 100% of stud/bolt.Hardness must be within 201 to 235 BHN.

4.0 FINAL INSPECTION

All inspection shall be in accordance with relevant drawing or BPS and SA193.

The threads shall be checked with calibrated ring gauges in the final heat-treated condition for black variety and in final plated condition for the plated/galvanised variety.

Visual & dimensional checks and acceptance shall be as per IS 2614 Table-I (latest).

5.0 MARKING & PACKING

Punch/emboss each finished stud/bolt with material grade (B7/B7M/B16, etc.) and supplier's emblem underlining the grade symbol.

Punch/emboss Sl.no also in B7M studs/bolts in addition to the above to correlate with hardness.

Protect the threaded ends with plastic end caps.Pack in wooden box/gunny bag of convenient size for easy handling and transportation.Mark quantity in each box/gunny bag.

6.0 CERTIFICATION

The manufacturer shall provide TC (ref. page 3) duly countersigned by the Authorised Inspecting Authority nominated by BHEL in P.O. (if specified) along with Raw Material TC from Steel Maker.Manufacturer's TC shall contain P.O.No,TDC No.,Heat No., Chemical and Mechanical properties,HT parameters,surface coating with coating thickness, baking details,manufacturers' identification mark and certify soundness & confirmation to P.O. requirements.

7.0 SPECIAL REQUIREMENTS

7.1 CADMIUM PLATING REQUIREMENTS

Clean the studs/bolts to make it free from rust, grease, oil, scale, etc.,before plating.

When pickling is considered essential, it shall be done as per Cl 7.4.

Apply Cadmium Plating to the specified thickness on specified areas.

After plating, bake the parts at 175 Deg.C to 205 Deg.C for a minimum period of 3 hours. The elapsed time between plating and baking shall not exceed 8 hours.

Apply a Chromate Conversion coating after plating and baking.

7.2 GALVANISING

Clean the studs/bolts to make it free from rust, grease, oil, scale, etc., before galvanising

When pickling is considered essential, it shall be done as per Cl 7.4.

The fasteners shall be galvanised by electroplating process to obtain the minimum coating thickness as specified in PO/drawing.

After galvanising bake the parts at 175 to 205 deg.C for a minimum period of 3 hours. The elapsed time between plating and baking shall not exceed 8 hours.

Apply a Chromate Conversion coating after plating and baking.

7.3 RUST PREVENTIVE COATING REQUIREMENTS

Clean the studs/bolts to make it free from rust, grease, oil, scale, etc., before applying protective coating. When pickling is considered essential it shall be done as per Cl 7.4.

One coat of rust preventive fluid of any of the following vendors shall be applied.

CHEMICAL	VENDOR
1. BONITA-RPF	M/s Bonita Chemicals, 64, Industrial Estate, Nunhai, Agra-282 006.
2. CHAMPION-RPF	M/s Guardian Chemicals, 8, Rajaji Ind st, West Lake Area, Nungambakkam, Madras-600 034
3. ECONOL RPF (non-drying type)	M/s Process Aids, Bangalore
4. TECTYL 506	M/s Plastipeel Chemicals and Plastics (P) Ltd, Thane-400 604
5. TRPF	M/s Sundaram Paints Pvt. Ltd., Thanjavur-613 004
6. TRPF	M/s Solar Paints, Pudukkotai.
7. WICOR-P	M/s Western India Paint and Color Co P. Ltd, Madras-600 017

7.4 ACID PICKLING

When pickling is considered essential for cleaning, it shall be done using Hydrochloric acid of 5 to 10% acid concentration at room temperature with inhibitor.

The concentration and type of inhibitors shall be as recommended by any of the following vendors.

1) M/s Agromore Ltd. Bangalore. 2) M/s Prosol Corporation, Hyderabad. 3) M/s Guardian Anti-corrosives, Madras. 4) M/s Mascat Chemicals, Bombay.

After pickling thorough rinsing shall be carried out with water to remove acid residues.

Immediately after pickling, the components shall be dried and baked at 175 to 205 deg C for 3 hours before taking up the next operation (plating).

Revision Record:

Rev:00/17.01.90: First issue, Rev:01/21.06.90: Editorial corrections, Rev:02/21.04.91: TC for studs/bolts added
 Rev:03/04.04.96: Annexure-I amended. Cl 3.3.3 & 5.3 modified, Rev:04/20.10.96: NDT, Acid pickling added & re-written, Rev:05/28.04.98: Cl 3 modified to include MPI, certificate modified & Cl 7.4 deleted
 Rev:06/15.06.99: Title, Cl 1 to 5 & 7.1 modified. Cl.7.2 changed to Cl 7.3. Cl 7.3 changed to 7.4 & modified. Cl 7.2 Galvanising added. Test certificate sample format modified.

R.Rajasekar
Qual. Assurance
Prepared by

K.Nagarajan
Engg/Valves

Haridoss
Purchase/Valves

G.Mathivanan
Quality Control

P.Vasudevan
Quality assurance

K.Rengachari
Qual Assurance
Approved by

Reviewed by

TEST CERTIFICATES FOR STUDS/BOLTS - SAMPLE FORMAT

TC NO:

DATE:

 CUSTOMER : PO No/Amd :
 TDC No/Rev. : DC No :
 PRODUCT : DRG.No :
 DESCRIPTION : (Spec, dia, pitch, length) THREAD SPEC:
 QUANTITY :

 Requirement Records/observations

 size of bar - Before m/c ing :
 - After m/c ing :
 Type of furnace used for hardening :

 | Mill TC for raw material TC No:
 TDC Cl No|Melt Number.

Product analysis for chemistry. Report No:

Spec (min,max)	C	Si	Mn	P	S	Cr	Mo	V	Others
Actual									

 |Hardening Heat treatment Temperature: Deg C. Soaking time
Tempering after hardening Temperature: Deg C. Soaking time

Tensile test after H&T & final drying(Finished heat treated condition

3.0 | Tensile Yield %Elongation on 2"GL %Reduction in area

Spec (mini,max)	Actual

Hardness measured

10 % MPI on the finished studs. Report No:

4.0 |Visual & dimensional checking as per IS 2614 table 1

5.0 |Punching details(identification)
End cap for threaded portion

7.0 |Pickling. Acid: Concentration:
 |Drying after pickling. Temperature: Deg C. Soaking time
 |Type of coating Cadmium/Galvanising/Rust preventive
 |Coating thickness
 |Chromate conversion coating.
Drying after coating. Temperature: Deg C. Soaking time

This confirms that the above results are correct and the parts are as per speccification and P.O requirements.

Signature
 BHEL/Authorised Inspection agency

Signature
 Incharge of Quality

QUALITY ASSURANCE

QA:3.2.1:003:99

Date:09-02-99

Sub: Release of revised TDC:5:166/04 TDC for Carbon & Alloy steel nuts to specn SA 194 Gr 2H/2HM/Gr4/Gr7 for Valves, Oil field equipments & other applications.

Please find enclosed the subject TDC for your official use and record.

K. Rangachari
(K.Rangachari)
SR.MANAGER/QA

Distribution:

DGM/Valves/Matl Plng/Bldg 6...Sri.R.Prabudoss

DGM/Spares/Matl Plng/Bldg 53..Sri.K.Y.Prabu

DGM/Matl Plng/Bldg 2&4.....Sri.V.Balakrishnan

SM/Purchase/Valves.Bldg 24....Sri.Sam Manohar Nayagam

SM/Purchase/FB/Bldg 24..... Sri.P.Namasivayam

SM/QC (Proc)/Bldg 2&4.....Sri.G.Mathivanan

M/Engg/Valves/Bldg.6.....Sri.K.Nagarajan

Master file

BHEL - Quality Assurance Department. TECHNICAL DELIVERY CONDITION

TDC:5:166 Rev.No.:04 Effective Dt.:13/01/99

Page 1

CARBON & ALLOY STEEL NUTS TO SPECN SA 194 Gr2H/2HM/Gr4/Gr7
for VALVES,OIL FIELD EQUIPMENT & OTHER APPLICATIONS**Revision record:**

Rev:00/11.04.90 : First issue

Rev:01/21.06.90 : Editorial corrections

Rev:02/21.04.91 : TC for nuts added

Rev:03/20.10.96 : NDT,Acid pickling added & rewritten

Rev:04/13/01/99 : Studs/bolts changed as nuts in Cl.5,7.1,7.2

1.0 MATERIAL SPECIFICATION - SA 194 Gr2H/Gr2HM/Gr4/Gr7{latest on date of Purchase Order (P.O)}

2.0 GENERAL

This TDC is applicable for API 6A applications including NACE MR-01-75 cl.II & cl.III also. Shall be manufactured to the relevant drawing and P.O.requirements.

Nuts shall be hot/cold forged or manufactured from hot rolled/cold drawn bars. If made from hexagonal bars, 100% MT is to be done on bars. If made from round bars, the bars shall be machined to remove 2mm from surface, (ie 4mm in dia) to remove all surface defects. At least 10% of the machined bars shall be MT tested to ensure that the surface defects are fully removed.

Nuts shall be heat treated to meet the requirements of SA194 only in a salt bath, or controlled atmosphere furnace. After HT the threads shall be thoroughly cleaned to remove all deposits. When acid pickling is done for cleaning it shall be done as per Cl 7.3.

Cadmium plating as per (Cl 7.1) if specified in drg/P.O. or rust preventive fluid coating as per (Cl 7.2) shall be done.

3.0 CHEMICAL & MECHANICAL PROPERTIES

Mill certificate for chemical composition from steel manufacturer for conformance to the specification heat-wise. Additionally, product analysis shall be done for one piece/heat by the nut manufacturer.

HARDNESS

For SA194 2H, Gr4, & Gr7

Hardness check on finished nut as per SA194, using sampling plan (Cl.7.4).Hardness in the finished nut shall be 24 to 35 HRC or 248 to 352 BHN.

For SA194 Gr2HM:

Hardness check on 100% of nuts.Hardness must be within 159 to 237 BHN.

Proof load test shall be done as per SA194 for all grades.

After final heat treatment, sample nuts shall be heat treated as below and meet the corresponding hardness requirements.

Grade	Temp	Time	Cooling	Hardness at room temp.
2H	540°C	24Hrs	Slow cool	179 BHN (min)
2HM	540°C	-do-	Slow cool	159 BHN (min)
Gr4/Gr7	590°C	-do-	Slow cool	201 BHN (min)

CONE STRIPPING TEST: This test shall be performed as per SA194 in case of visible surface discontinuities. On such cases Proof load shall be as per ASTM A194 (latest std).

4.0 FINAL INSPECTION

All inspection shall be as per drawing and SA194.

The threads shall be checked with calibrated plug gauge in the final heat-treated condition for black variety and in final plated condition for the plated variety.

Visual and Dimensional checks in the finished nuts and their acceptance shall be as per IS 2614 Table-I(latest).

5.0 MARKING & PACKING

Punch/emboss each finished nuts with material grade (2H/2HM/Gr4/Gr7); supplier's emblem.

Punch/emboss Sl.no also in 2HM nuts in addition to the above to co-relate with hardness. In addition, the grade symbol shall be underlined.

Pack in wooden box of convenient size for easy handling & transportation.Mark quantity in each box.

6.0 **CERTIFICATION**

The manufacturer shall provide TC (ref. page 3) duly countersigned by the Authorised Inspecting Authority nominated by BHEL in P.O. (if specified) along with Raw Material TC from Steel Maker. Manufacturer's TC shall contain P.O.No.heat no., Chem & Mech properties, HT parameters, surface coating with coating thickness, baking details and certify soundness & confirmation to P.O. requirements.

7.0 **SPECIAL REQUIREMENTS**

7.1 **CADMIUM PLATING REQUIREMENTS**

Clean the nuts to make it free from rust, grease, oil, scale, etc., before plating.

When pickling is considered essential, it shall be done as per Cl 7.3.

Apply Cadmium Plating to the specified thickness on specified areas.

After plating, Bake the parts at 175 Deg.C to 205 Deg.C for a minimum period of 3 hours. The elapsed time between plating and baking shall not exceed 8 hours.

Apply a Chromate Conversion coating after plating and baking.

7.2 **RUST PREVENTIVE COATING REQUIREMENTS**

Clean the nuts to make it free from rust, grease, oil, scale, etc., before applying protective coating.

When pickling is considered essential it shall be done as per Cl 7.3.

One coat of rust preventive fluid of any of the following vendors shall be applied.

CHEMICAL

VENDOR

- 1. **BONITA-RPF** M/s Bonita Chemicals, 64, Industrial Estate, Nunhai, Agra-282 006.
- 2. **CHAMPION-RPF** M/s Guardian Chemicals, 8, Rajaji Ind st, West Lake Area, Nungambakkam, Madras-600 034
- 3. **ECONOL RPF** M/s Process Aids, Bangalore
(non-drying type)
- 4. **TECTYL 506** M/s Plastipeel Chemicals and Plastics (P) Ltd, Thane-400 604
- 5. **TRPF** M/s Sundaram Paints Pvt. Ltd., Thanjavur-613 004
- 6. **TRPF** M/s Solar Paints, Pudukkotai.
- 7. **WICOR-P** M/s Western India Paint and Color Co P. Ltd, Madras-600 017

7.3 **ACID PICKLING**

When pickling is considered essential for cleaning, it shall be done using Hydrochloric acid of 5 to 10% acid concentration at 50 deg C with inhibitor.

The concentration and type of inhibitors shall be as recommended by any of the following vendors.

- 1) M/s Agromore Ltd. Bangalore. 2) M/s Prosol Corporation, Hyderabad. 3) M/s Guardian Anti-corrosives, Madras. 4) M/s Mascat Chemicals, Bombay.

After pickling thorough rinsing shall be carried out with water to remove acid residues.

Immediately after pickling, the components shall be dried and baked at 175 to 205 deg C for 3hours before taking up the next operation.

7.4 **SAMPLING PLAN FOR HARDNESS CHECK AFTER HT**

The following double sampling plan shall be used. Hardness values shall be 25 to 34 HRC after HT. IS 2500 (Double Sampling) Normal Inspection, Level 2.

No. of Pieces in the lot	Acceptable Quality Level (2.5%)							
	First sample (n1)	Acceptance number (Ac)	Rejection number (Rc)	Second sample (n2)	Combined sample (n1+n2)	Acceptance number (Ac)	Rejection number	
0 - 500	32	1	4	32	64	4	5	
501 - 1200	50	2	5	50	100	6	7	
1201 - 3200	80	3	7	80	100	8	9	
3201 - 10000	125	5	9	125	250	12	13	
10001 - 35000	200	7	11	200	400	18	19	

Ac:-Acceptance number: Max. no. of defectives allowed in the sample for the acceptance of the lot.

Rc:-Rejection number: Min.no. of defectives in the sample resulting in the lot's rejection.

PROCEDURE FOR OPERATING THIS PLAN : Suppose the lot size is 1,000. From table chose the class, which includes 1,000 viz 501 - 1200. Hence, use the sampling plan given against this class. Take a sample of 50 pieces and test for hardness.

TEST CERTIFICATE FOR NUTS - SAMPLE FORMAT

TC NO:

DATE:

CUSTOMER :

P.O.NO:

Dt:

D.C.NO:

Dt:

Specn :

PRODUCT :

SIZE OF BAR USED:

RAW MATL TC NO:

TDC NO:

HEAT NO.:

DRG NO:

LOT NO:

Thread specn:

QUANTITY:

CHEMICAL COMPOSITION (%) :

C	Si	Mn	P	S	Cr	Ni	Others

HEAT TREATMENT:

HARDENING: TEMP: Deg.C;SOAKING TIME: Minutes;COOLING MEDIUM:
TEMPERING: TEMP: Deg.C.SOAKING TIME: Minutes;COOLING MEDIUM:
BAKING TEMP : Deg.C.BAKING TIME: Minutess.

MECHANICAL TESTING:

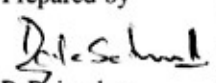
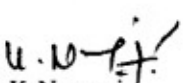
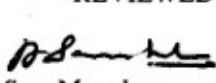
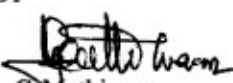
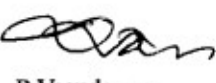
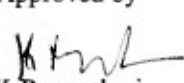
HARDNESS AFTER HT (MIN & MAX) : BHNNO OF SAMPLES
HARDNESS AFTER 24 HRS TEMPERING ON SAMPLE NUT : BHN
PROOF LOAD APPLIED : Kgf
CONE PROOF LOAD TEST : LOAD APPLIED:

MAGNETIC TESTING (IN PROCESS):
FINAL INSPECTION (VISUAL):

SURFACE COATING : COATING THICKNESS : Micr
IDENTIFICATION :

It is certified that the above results are correct and the parts are as per specification & P.O. requirements.

Signature
Incharge of Quality

Prepared by	REVIEWED BY			Approved by
 R. Rajasekar	 K. Nagarajah	 Sam Monohar Nayagam	 G. Mathivanan	 P. Vasudevan
Qual Assurance	Engg/Valves	Purchase/Valves	Quality Control	Quality assurance
				 K. Rengachari Qual Assurance



Bharat Heavy Electricals Ltd.

Annexure 3A-Import

Valves Purchase
Trichy - 620 014. India

Phone : 0431-257 7802

Email: ramnath@bheltry.co.in

BHEL Enquiry No. EN-SOF1796

Sl No	BHEL COMMERCIAL TERMS AND CONDITIONS for FOREIGN SUPPLIES	Vendor's Confirmation
1	Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".	
2	Vendor to indicate Quoted/Not Quoted item wise as per the format (Annexure 3B) enclosed.	
3	Prices shall be quoted item wise only as per the format (Annexure 3C) enclosed.	
4	Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOB basis inclusive of Packing & Forwarding charges if any.	
5	Validity of offer shall be for a minimum period of 6 Months from the date of Tender opening	
6	Delivery period from the date of Purchase order shall be clearly mentioned in the offer.	
7	Liquidated damages @ ½% per week subject to a maximum of 10% of the total order value shall be applicable for delay in deliveries.	
8	Following Risk Purchase clause shall be applicable: The Purchaser at his option 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 time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
9	Payment terms for Foreign vendor (Principal): 100% payment on CAD basis after 45 days from the date of receipt of documents, at BHEL bank specified in PO. Respective bank charges to respective account.	
10	All bank charges outside India are to be in vendor's account only.	
11	In case of any short shipment in the main equipment / spares, where separate rates are not available in the contract, the customs duty levied on such supplies, shall be borne by the supplier.	
12	Any replacement/repair work during warranty period shall be done free of cost on FOR Site basis/destination specified by BHEL. (Offer without acceptance of same may be rejected)	
13	The equipment shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the supply, whichever is earlier.	
14	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.	

NOTE:-

- It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- The prices are to be offered only on FOB basis, inclusive of Packing & Forwarding charges if any.

Signature & Office Seal of the vendor



Bharat Heavy Electricals Ltd.

Annexure 3A-Indegeniouss

Valves Purchase
Trichy - 620 014. India

Phone : 0431-257 7802

E-mail: ramnath@bheltry.co.in

BHEL Enquiry No.EN-SOF1796

Sl No	<u>BHEL COMMERCIAL TERMS AND CONDITIONS for INDIGENOUS SUPPLIES</u>	Vendor's Confirmation
1	Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".	
2	Vendor to indicate Quoted/Not Quoted item wise as per the format (Annexure 3B) enclosed.	
3	Prices shall be quoted item wise only as per the format (Annexure 3C) enclosed.	
4	Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOR BHEL basis inclusive of Packing & Forwarding charges if any.	
5	Validity of offer shall be for a minimum period of 6 Months from the date of Tender opening	
6	Delivery period from the date of Purchase order shall be clearly mentioned in the offer.	
7	Liquidated damages @ ½% per week subject to a maximum of 10% of the total order value shall be applicable for delay in deliveries.	
8	Following Risk Purchase clause shall be applicable: The Purchaser at his option 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 time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
9	Payment terms for indigenous vendor: 100% after 45 days on acceptance of material at BHEL stores	
10	Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.	
11	Any replacement/repair work during warranty period shall be done free of cost on FOR Site basis/destination specified by BHEL. (Offer without acceptance of same may be rejected)	
12	The equipment shall be guaranteed for a period of 12 months from the date of commissioning or 18 months from the supply, whichever is earlier.	
13	The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.	

NOTE:-

- It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- The prices are to be offered only on FOR BHEL Trichy basis, inclusive of Packing & Forwarding charges if any.

Signature & Office Seal of the vendor

						Annexure-4B - Indigenous supplier	
				Format for Price Bid--Indigenous suppliers			
BHEL Enquiry No. & Date			Vendor's Offer Ref No. & Date				
Enq SI No.	Material Code	Description	Unit	Qty	Unit Weight (In Kgs)	Unit Price in INR	Value in INR
1			Nos				
2			Nos				
3			Nos				
4			Nos				
5			Nos				
6			Nos				
Total Value in Rs							
Packing & Forwarding Charges if extra							
Excise Duty							
CST/VAT							
Freight Charges if extra							
Transit Insurance Charges if extra							
Validity of offer							
Consignment Package Details							
Approximate Net / Gross Weight in Kgs							
Dimension of Consignment							
NOTE:							
The Price Bid should be submitted strictly in line with the above FORMAT							
			Signature & Seal of Vendor				

SCHEDULE OF DEVIATIONS

Enq Ref:

Offer Ref:

Date:

Commercial Deviation:

Annexure / Clause No.	Description	Supplier Deviation

Technical Deviation:

Annexure / Clause No.	Material Code	Matl. Description	Supplier Deviation

We confirm acceptance of all the Technical and Commercial requirements as per BHEL Tender, except the above deviations.

Signature with Seal