

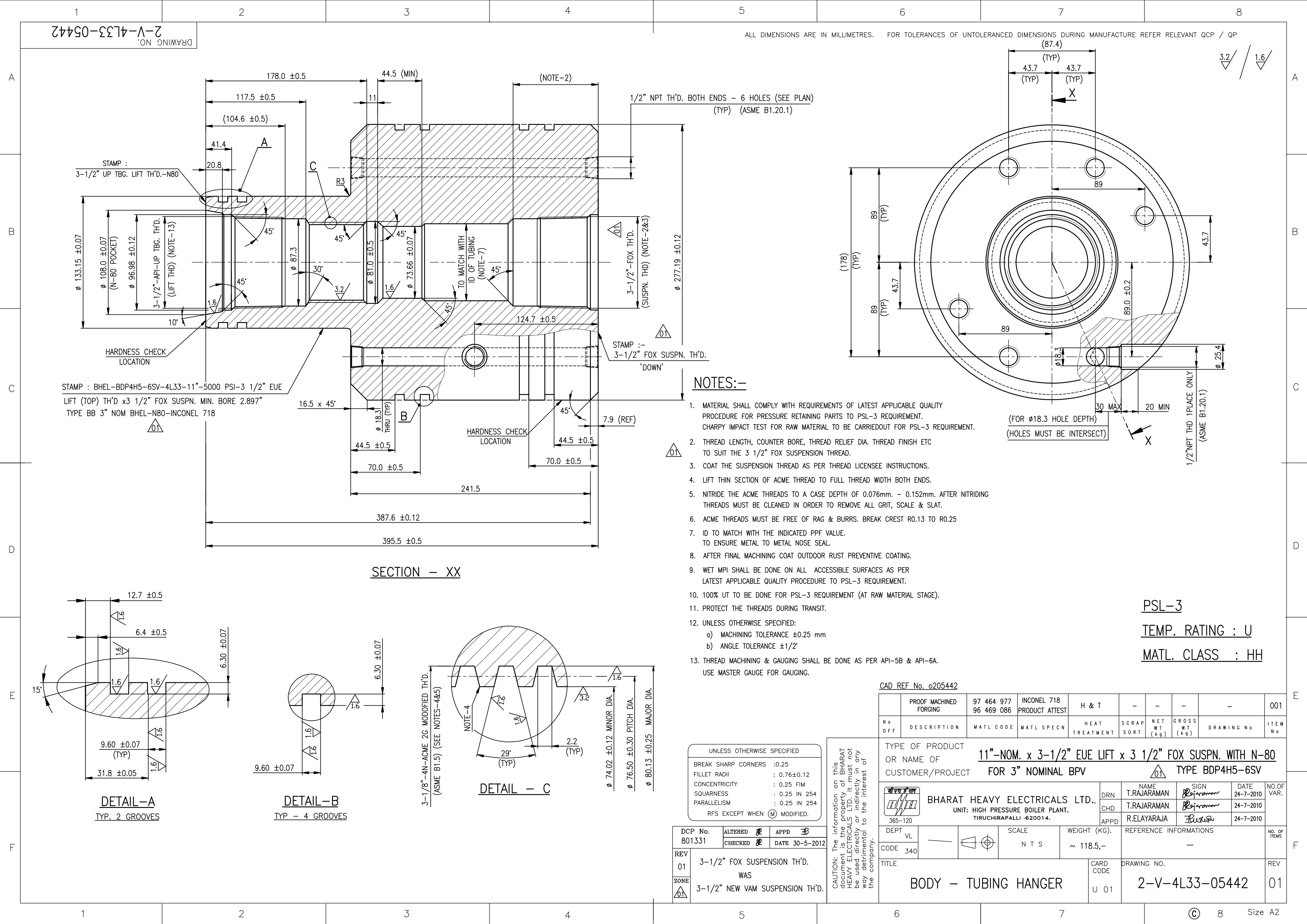
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                                                                                                                                                                                                                                                                                             |                                                                                                                                      |                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <br>432-003                                                                                                                                                                                                                                                                                                                                                                                                            | <b>ENQUIRY</b><br>VALVES | <b>Bharat Heavy Electricals Limited</b><br>(A Government of India undertaking)<br>HIGH PRESSURE BOILER PLANT<br>PURCHASE DEPARTMENT/VALVES<br>TIRUCHIRAPPALLI-620 014.                                                                                                                      |                                                                                                                                      | Phone:04312577913<br>FAX :0431-2520383<br>Email: <a href="mailto:fayasmalik@bheltry.co.in">fayasmalik@bheltry.co.in</a> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          | <b>ENQUIRY NO.</b>                                                                                                                                                                                                                                                                          | <b>DATE</b>                                                                                                                          | <b>DUE DATE FOR QUOTATION</b>                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          | <b>ENSOF00094</b>                                                                                                                                                                                                                                                                           | <b>08.05.2017</b>                                                                                                                    | <b>30.05.2017</b>                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          | Please quote Enquiry No., and due date in correspondences<br>This is only a request for quotation and not an order.                                                                                                                                                                         |                                                                                                                                      |                                                                                                                         |
| Supply of BODY HANGER (FOX THREAD)<br><br><u>Date , Time &amp; Venue of tender opening :</u><br><br>30.05.2017 at 14.30 Hrs.at<br>The Tender Opening Cell / Valves Room No. -26, Building -24<br>Bharat Heavy Electricals Limited<br>Tiruchirappalli - 620014, Tamilnadu, India<br>Email: tender_cell@bheltry.co.in                                                                                                                                                                                     |                          | <b><u>Scope of supply</u></b><br><br>Supply of BODY HANGER (FOX THREAD) as per the purchase specification enclosed.<br><br>-List of Annexures<br>Annexure 1- Scope of Supply<br>Annexure 2- Specification<br>Annexure 3- Commercial terms & check list<br>Annexure 4- Schedule of Deviation |                                                                                                                                      |                                                                                                                         |
| <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><b>Yours faithfully,</b></p> <p>For Bharat Heavy Electricals Ltd</p> <p><b>Fayas Malik K</b><br/> Sr.Engineer/Purchase/Valves</p> |                                                                                                                         |

## SCOPE OF SUPPLY

| Sl No | Material     | Matl_Desc                                | Qty | drawing no  |
|-------|--------------|------------------------------------------|-----|-------------|
| 1     | 974649770000 | BODY-HGR11X3-1/2EU X FOX-4L31-HH         | 1   | 2V4L3305442 |
| 2     | 974649920000 | BODY-HGR11X3-1/2EU X FOX 6CCL,3,FF-4L80  | 9   | 2V4L8005489 |
| 3     | 974649930000 | BODY-HGR.11-5M 4 1/2 EUE x FOX 6CCL-4L79 | 20  | 2V4L7905488 |
| 4     | 974650020000 | BODY-HGR11X5-1/2FOX X FOX 6CCL,3,FF-4P03 | 1   | 2V4P0320083 |
| 5     | 974650200000 | BODY-FLOW ADAPT W/5-1/2" FOX-4N40        | 1   | 2V4Q0220180 |

### **PRE QUALIFICATION CRITERIA**

1. SUPPLIER SHOULD SUBMIT PROOF OF 2 YEAR PAST SUPPLY RECORD OF SIMILAR THREADED ITEM FOR OIL FIELD. (PO COPY, INVOICE, DEPATCH DETAIL)
2. TRADERS WILL NOT BE CONSIDERED.
3. SUPPLIER SHOULD BE HAVE VALID API CERTIFICATION AND ISO CERTIFICATION FOR THIS PRODUCT.
4. NEW SUPPLIER SHOULD REGISTER IN BHEL SUPPLIER PORTAL(<https://supplier.bhel.in/>) BEFORE PRICE BID OPENING



- NOTES:-
- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT. CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
  - THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 3 1/2" FOX SUSPENSION THREAD.
  - COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
  - LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
  - NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SLAT.
  - ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
  - ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
  - AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
  - WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
  - 100% UT TO BE DONE FOR PSL-3 REQUIREMENT (AT RAW MATERIAL STAGE).
  - PROTECT THE THREADS DURING TRANSIT.
  - UNLESS OTHERWISE SPECIFIED:
    - MACHINING TOLERANCE  $\pm 0.25$  mm
    - ANGLE TOLERANCE  $\pm 1/2^\circ$
  - THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.

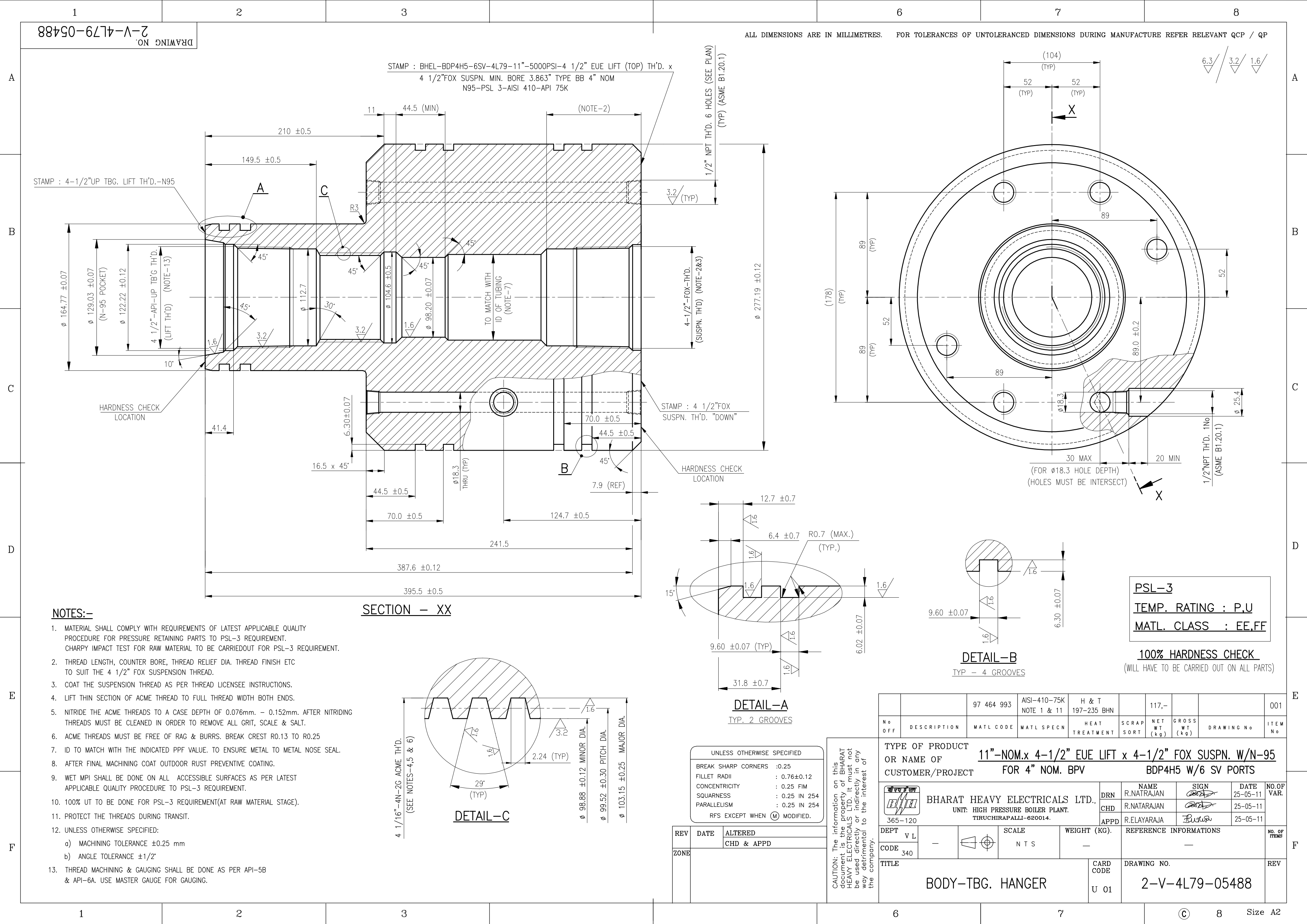
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|-------------------------------|-----------------------------------------------------------------------------|---------------------|--------------------------|-------------------|------------|---------|
| CAD REF No. o205442                                                                                                                                                                                       |             |                          |                               |                                                                             |                     |                          |                   |            |         |
| PROOF MACHINED FORGING                                                                                                                                                                                    |             | 97 464 977<br>96 469 086 | INCONEL 718<br>PRODUCT ATTEST | H & T                                                                       | -                   | -                        | -                 | -          | 001     |
| 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                                                                                                                                                               |             |                          |                               | 11"-NOM. x 3-1/2" EUE LIFT x 3 1/2" FOX SUSPN. WITH N-80 FOR 3" NOMINAL BPV |                     |                          |                   |            |         |
| <br>365-120<br><b>BHARAT HEAVY ELECTRICALS LTD.,</b><br>UNIT: HIGH PRESSURE BOILER PLANT.<br>TIRUCHIRAPALLI -620014. |             |                          |                               | DRN                                                                         | NAME<br>T.RAJARAMAN | SIGN<br><i>Rajaraman</i> | DATE<br>24-7-2010 | NO.OF VAR. |         |
|                                                                                                                                                                                                           |             |                          |                               | CHD                                                                         | T.RAJARAMAN         | <i>Rajaraman</i>         | 24-7-2010         |            |         |
|                                                                                                                                                                                                           |             |                          |                               | APPD                                                                        | R.ELAYARAJA         | <i>Elayaraja</i>         | 24-7-2010         |            |         |
|                                                                                                                                                                                                           |             |                          |                               | REFERENCE INFORMATIONS                                                      |                     |                          |                   |            |         |
| DEPT                                                                                                                                                                                                      | VL          | SCALE                    |                               | WEIGHT (KG).                                                                |                     | NO. OF ITEMS             |                   |            |         |
| CODE                                                                                                                                                                                                      | 340         | N T S                    |                               | ~ 118.5,-                                                                   |                     | -                        |                   |            |         |
| TITLE                                                                                                                                                                                                     |             |                          |                               | CARD CODE                                                                   | DRAWING NO.         |                          |                   |            | REV     |
| BODY - TUBING HANGER                                                                                                                                                                                      |             |                          |                               | U 01                                                                        | 2-V-4L33-05442      |                          |                   |            | 01      |

|         |        |                                 |      |
|---------|--------|---------------------------------|------|
| DCP No. | 801331 | ALTERED                         | APPD |
| CHECKED | DATE   | 30-5-2012                       |      |
| REV     | 01     | 3-1/2" FOX SUSPENSION TH'D.     |      |
| ZONE    | 01     | WAS                             |      |
|         |        | 3-1/2" NEW VAM SUSPENSION TH'D. |      |

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.

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

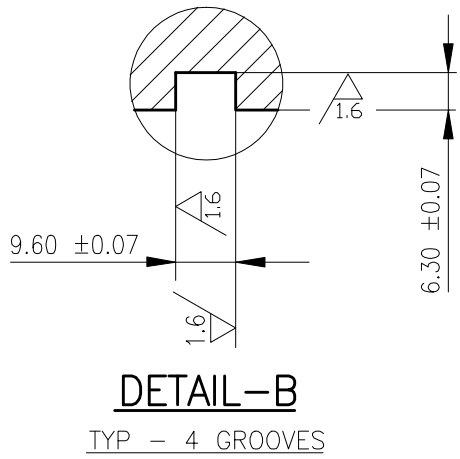
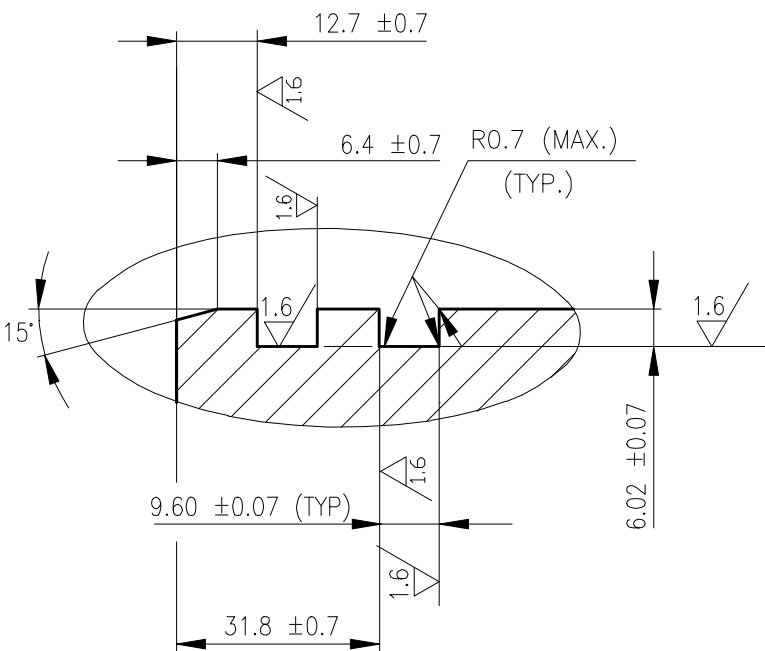
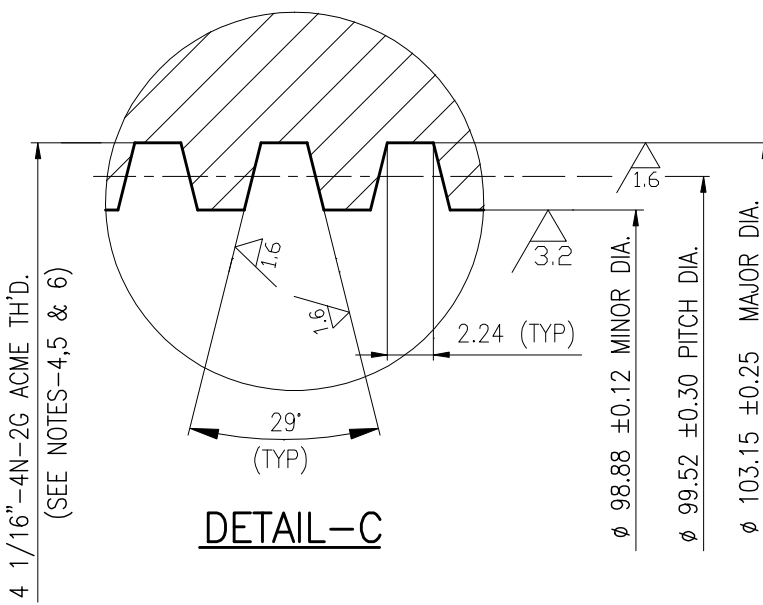
PSL-3  
TEMP. RATING : U  
MATL. CLASS : HH



NOTES:-

- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT. CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
- THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 4 1/2" FOX SUSPENSION THREAD.
- COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
- LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
- NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SALT.
- ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
- ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
- AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
- WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
- 100% UT TO BE DONE FOR PSL-3 REQUIREMENT(AT RAW MATERIAL STAGE).
- PROTECT THE THREADS DURING TRANSIT.
- UNLESS OTHERWISE SPECIFIED:
  - MACHINING TOLERANCE ±0.25 mm
  - ANGLE TOLERANCE ±1/2°
- THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.

SECTION - XX



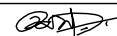
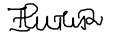
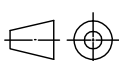
PSL-3  
TEMP. RATING : P.U  
MATL. CLASS : EE,FF

100% HARDNESS CHECK  
(WILL HAVE TO BE CARRIED OUT ON ALL PARTS)

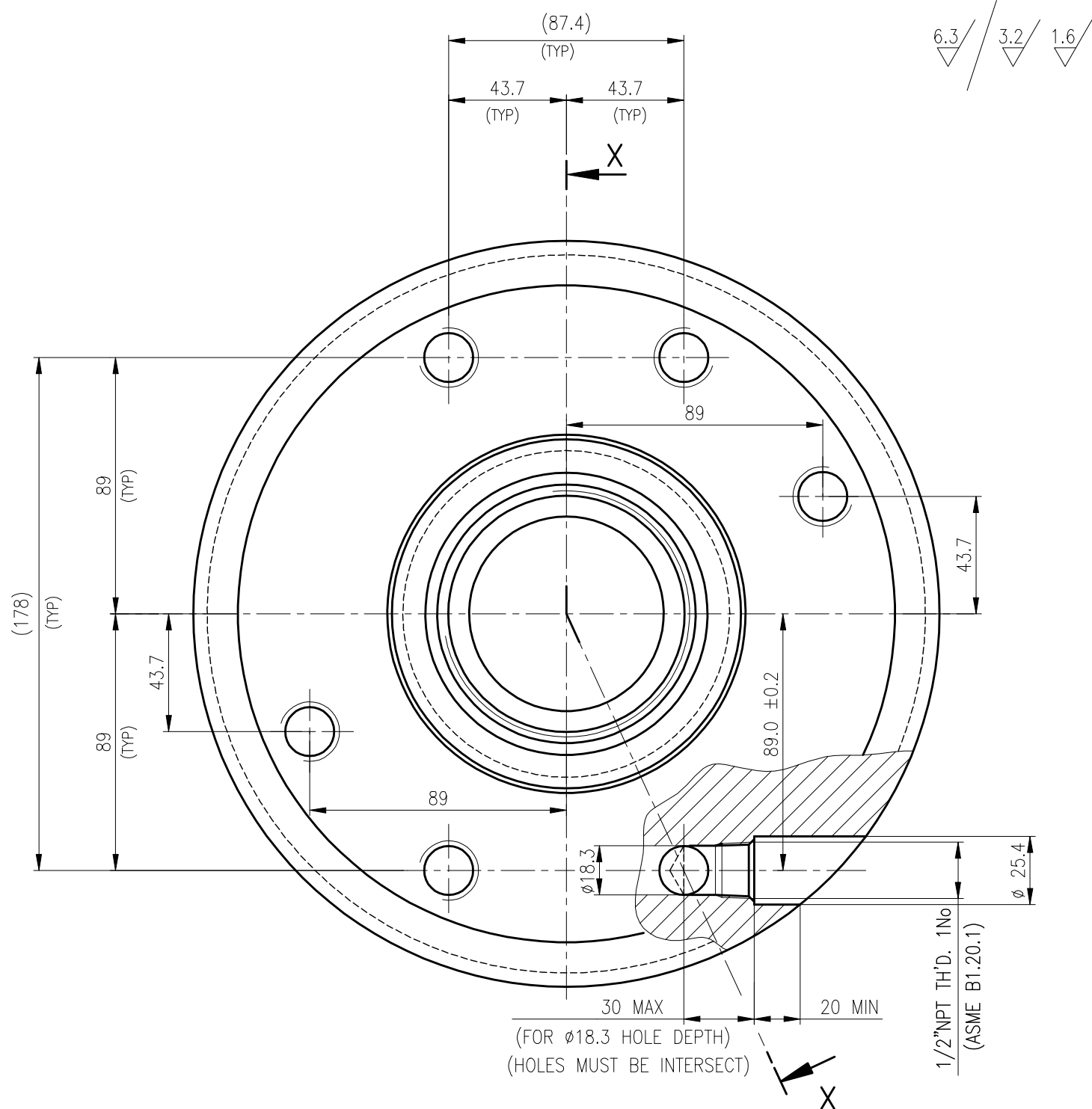
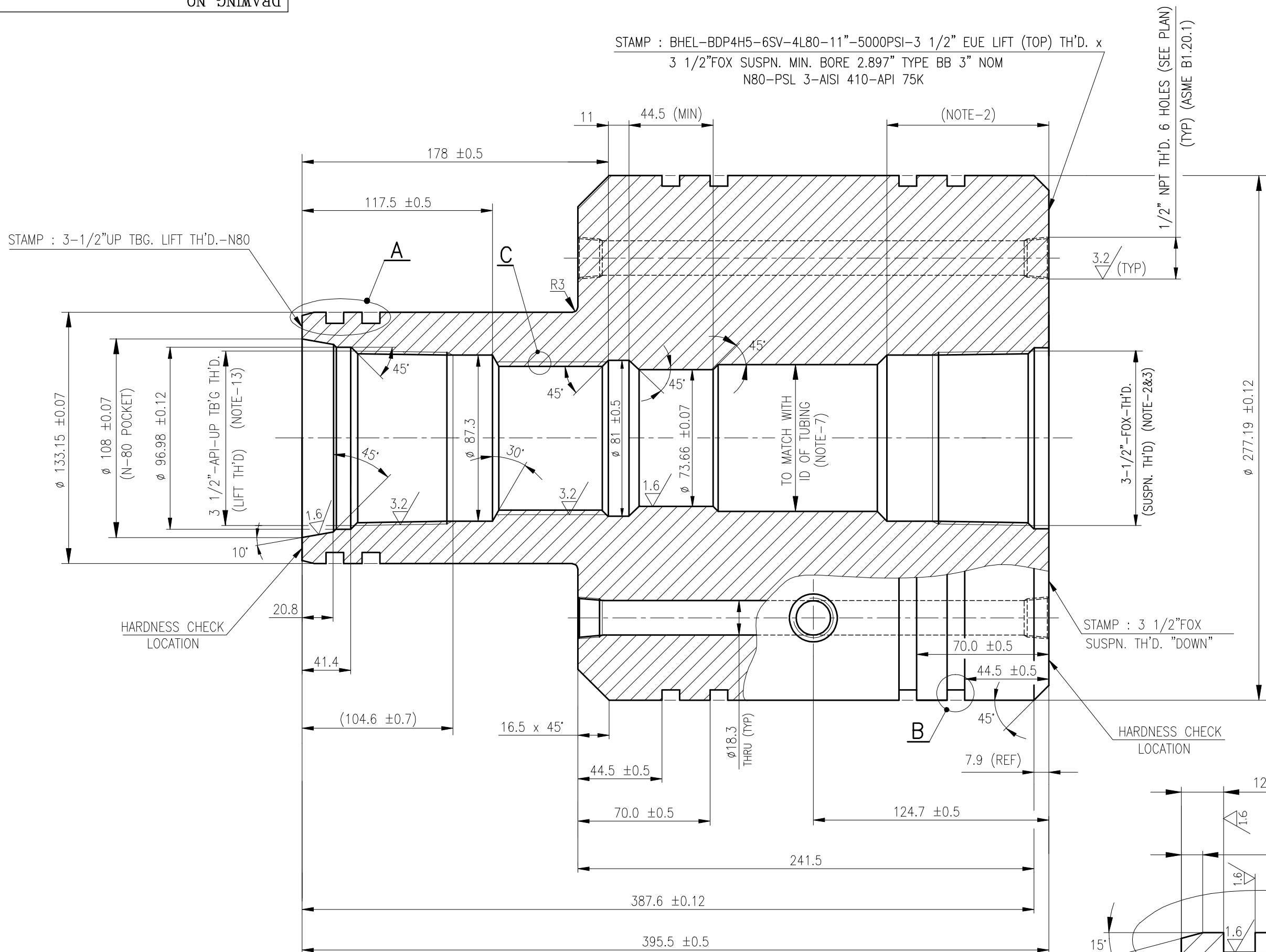
| UNLESS OTHERWISE SPECIFIED    |               |
|-------------------------------|---------------|
| BREAK SHARP CORNERS           | :0.25         |
| FILLET RADII                  | : 0.76±0.12   |
| CONCENTRICITY                 | : 0.25 FIM    |
| SQUARNESS                     | : 0.25 IN 254 |
|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

| REV  | DATE | ALTERED    |
|------|------|------------|
| ZONE |      | CHD & APPD |

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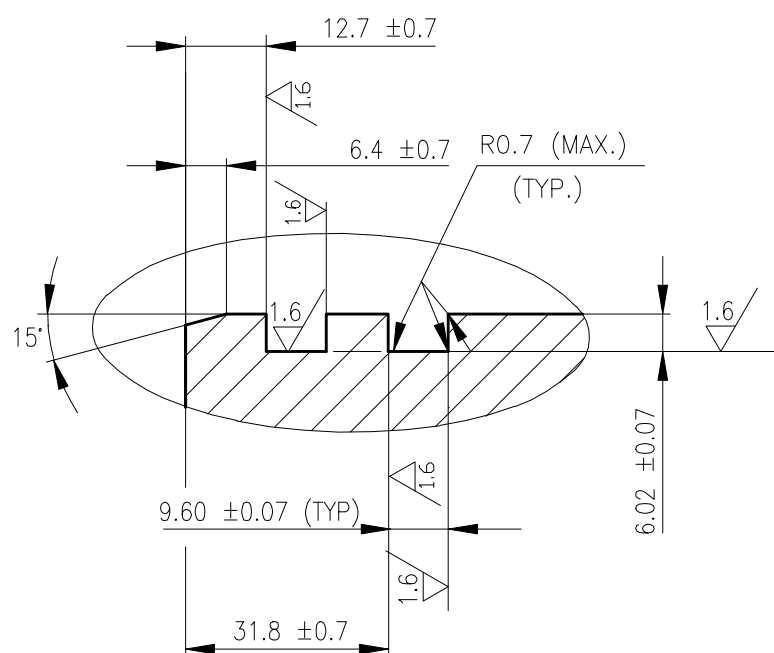
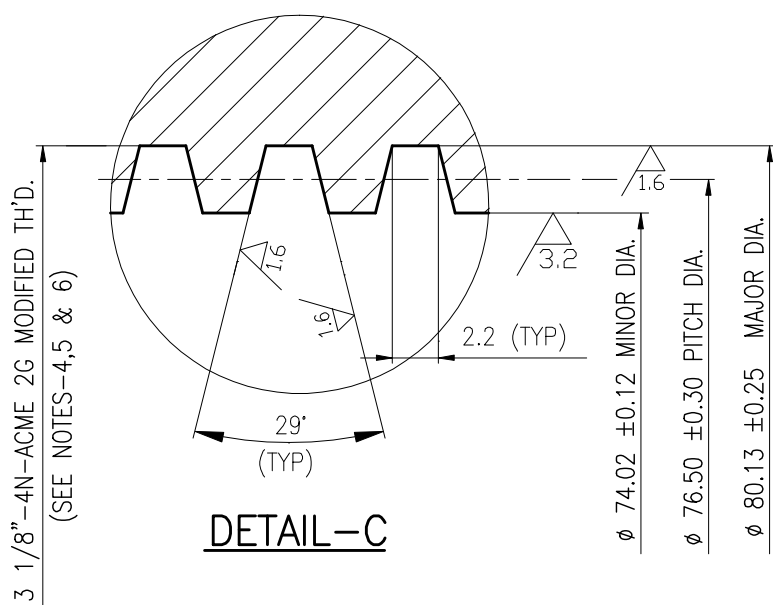
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|--------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------------------|-----------------------------------------------------------------------------------------------|---------------------|---------------|----------------|-----|
|                                                                                                  |             | 97 464 993                                                                            | ASI-410-75K<br>NOTE 1 & 11 | H & T<br>197-235 BHN |                             | 117,-                                                                                         |                     |               | 001            |     |
| No<br>OFF                                                                                        | DESCRIPTION | MATL CODE                                                                             | MATL SPECN                 | HEAT<br>TREATMENT    | SCRAP<br>SORT               | NET<br>WT<br>(kg)                                                                             | GROSS<br>WT<br>(kg) | DRAWING No    | ITEM<br>No     |     |
| TYPE OF PRODUCT<br>OR NAME OF<br>CUSTOMER/PROJECT                                                |             |                                                                                       |                            |                      |                             |                                                                                               |                     |               |                |     |
| 11"-NOM.x 4-1/2" EUE LIFT x 4-1/2" FOX SUSPN. W/N-95<br>FOR 4" NOM. BPV<br>BDP4H5 W/6 SV PORTS   |             |                                                                                       |                            |                      |                             |                                                                                               |                     |               |                |     |
| <br>365-120 |             |                                                                                       |                            | DRN                  | NAME<br>R.NATRAJAN          | SIGN<br> | DATE<br>25-05-11    | NO.OF<br>VAR. |                |     |
| BHARAT HEAVY ELECTRICALS LTD.,<br>UNIT: HIGH PRESSURE BOILER PLANT.<br>TIRUCHIRAPALLI-620014.    |             |                                                                                       |                            | CHD                  | R.NATARAJAN                 |          | 25-05-11            |               |                |     |
|                                                                                                  |             |                                                                                       |                            | APPD                 | R.ELAYARAJA                 |          | 25-05-11            |               |                |     |
| DEPT<br>V L                                                                                      | —           |  | SCALE<br>N T S             | WEIGHT (KG).<br>—    | REFERENCE INFORMATIONS<br>— |                                                                                               |                     |               | NO.OF<br>ITEMS |     |
| CODE<br>340                                                                                      |             |                                                                                       |                            |                      |                             |                                                                                               |                     |               |                |     |
| TITLE                                                                                            |             |                                                                                       |                            |                      | CARD<br>CODE<br>U 01        | DRAWING NO.<br>2-V-4L79-05488                                                                 |                     |               |                | REV |
| BODY-TBG. HANGER                                                                                 |             |                                                                                       |                            |                      |                             |                                                                                               |                     |               |                |     |

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP

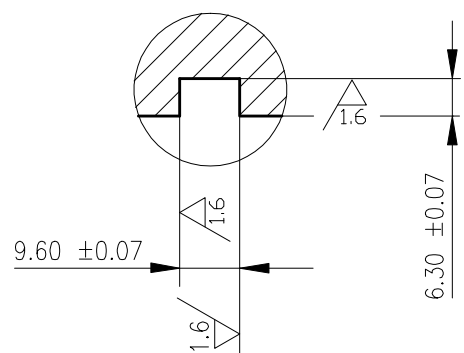


NOTES:-

1. MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3 REQUIREMENT.  
CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
2. THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 3 1/2" FOX SUSPENSION THREAD.
3. COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
4. LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
5. NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. - 0.152mm. AFTER NITRIDING THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SALT.
6. ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
7. ID TO MATCH WITH THE INDICATED PPV VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
8. AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
9. WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
10. 100% UT TO BE DONE FOR PSL-3 REQUIREMENT(AT RAW MATERIAL STAGE).
11. PROTECT THE THREADS DURING TRANSIT.
12. UNLESS OTHERWISE SPECIFIED:
  - a) MACHINING TOLERANCE  $\pm 0.25$  mm
  - b) ANGLE TOLERANCE  $\pm 1/2^{\circ}$
13. THREAD MACHINING & GAUGING SHALL BE DONE AS PER API-5B & API-6A. USE MASTER GAUGE FOR GAUGING.



DETAIL-A  
TYP. 2 GROOVES



DETAIL-B  
TYP - 4 GROOVES

PSL-3  
TEMP. RATING : P,U  
MATL. CLASS : EE,FF

100% HARDNESS CHECK  
(WILL HAVE TO BE CARRIED OUT ON ALL PARTS)

|                  |             |            |                             |                      |               |                   |                     |            |            |
|------------------|-------------|------------|-----------------------------|----------------------|---------------|-------------------|---------------------|------------|------------|
|                  |             | 97 464 992 | AISI-410-75K<br>NOTE 1 & 11 | H & T<br>197-235 BHN |               | 113,-             |                     |            | 001        |
| N<br>O<br>O<br>F | DESCRIPTION | MATL CODE  | MATL SPECN                  | HEAT<br>TREATMENT    | SCRAP<br>SORT | NET<br>WT<br>(kg) | GROSS<br>WT<br>(kg) | DRAWING No | ITEM<br>No |

|                  |                                                     |
|------------------|-----------------------------------------------------|
| TYPE OF PRODUCT  | 11"-NOM.x 3-1/2" EUE LIFT x 3 1/2"FOX SUSPN. W/N-80 |
| OR NAME OF       |                                                     |
| CUSTOMER/PROJECT | FOR 3" NOM. BPV BDP4H5 W/6 SV PORTS                 |

|                                                                                                                                                                                                             |      |             |                                                                                       |            |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|---------------------------------------------------------------------------------------|------------|----------------|
| <br><b>BHARAT HEAVY ELECTRICALS LTD.,</b><br>UNIT: HIGH PRESSURE BOILER PLANT.<br>TIRUCHIRAPPALLI - 620014.<br>365-120 |      | NAME        | SIGN                                                                                  | DATE       | NO. OF<br>VAR. |
|                                                                                                                                                                                                             | DRN  | R.NATARAJAN |  | 25-05-2011 |                |
|                                                                                                                                                                                                             | CHD  | R.NATARAJAN |  | 25-05-2011 |                |
|                                                                                                                                                                                                             | APPD | R.ELAYARAJA |  | 25-05-2011 |                |

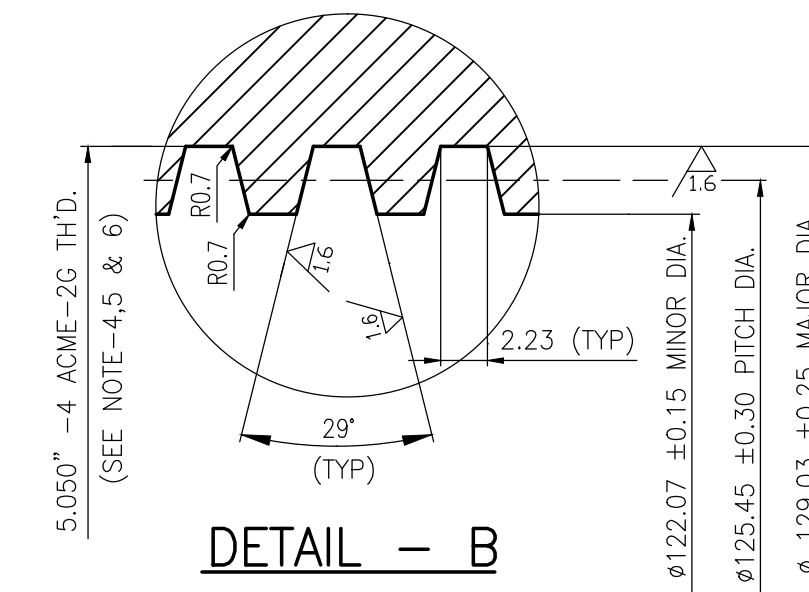
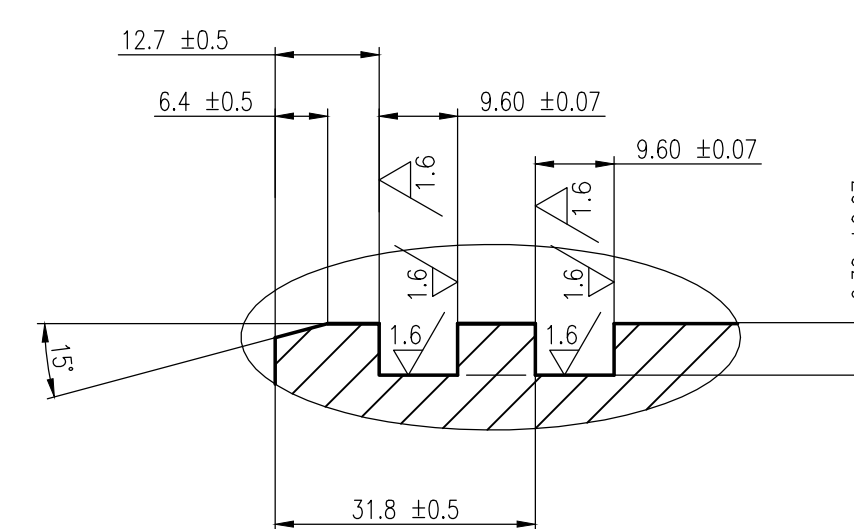
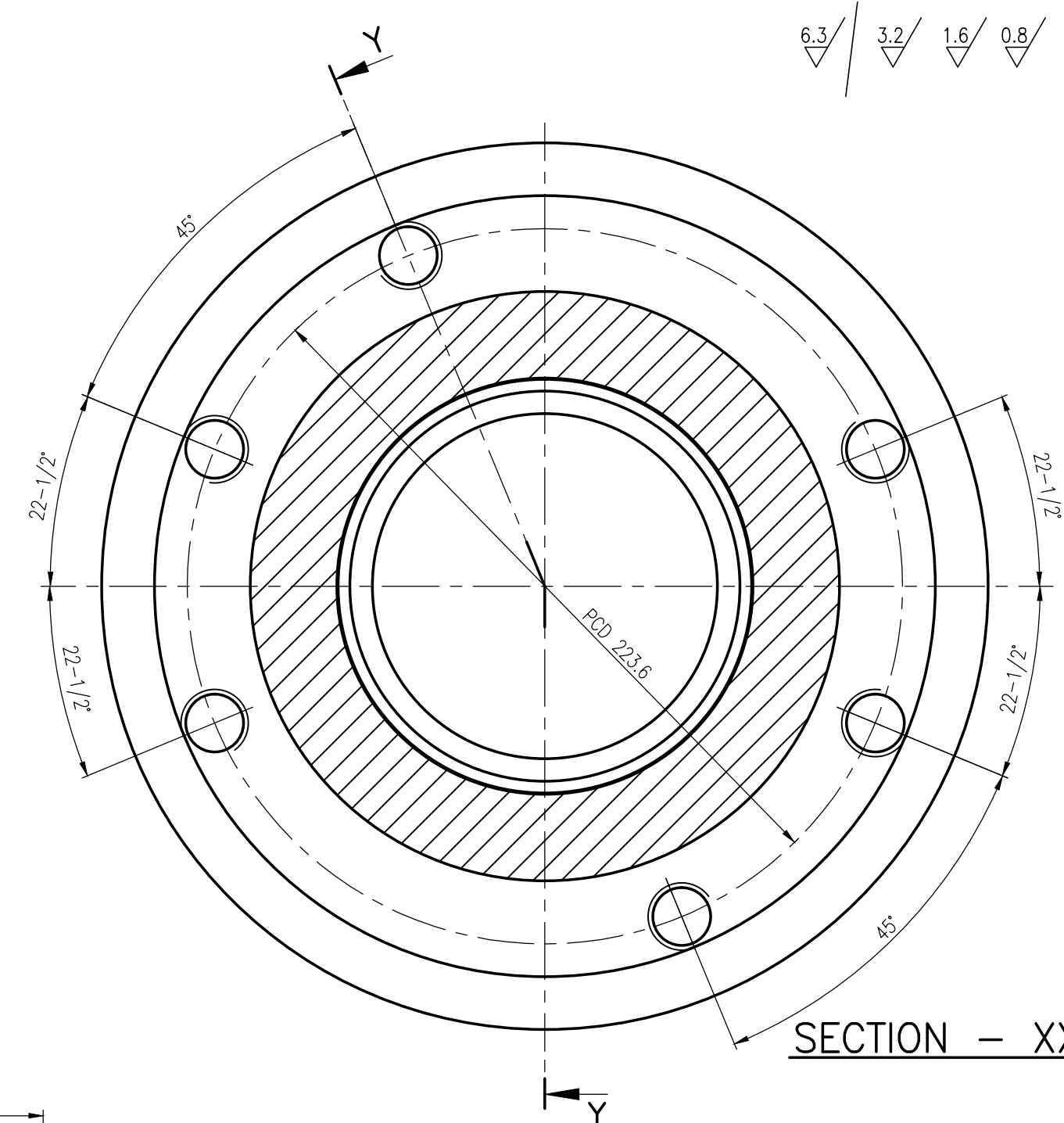
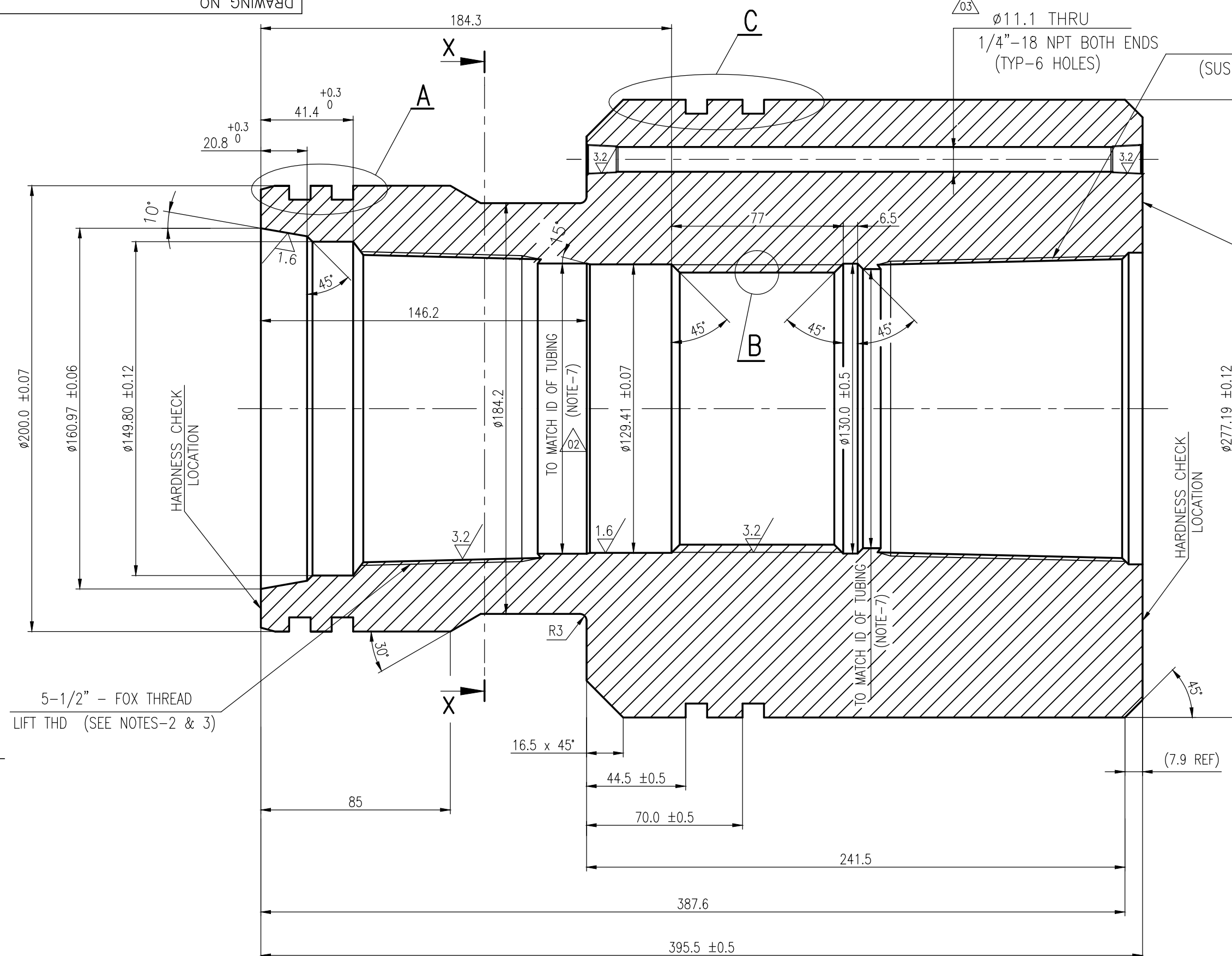
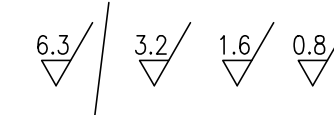
|                  |     |   |                                                                                       |       |              |                       |              |
|------------------|-----|---|---------------------------------------------------------------------------------------|-------|--------------|-----------------------|--------------|
| DEPT             | V L | — |  | SCALE | WEIGHT (KG). | REFERENCE INFORMATION | NO. OF ITEMS |
| CODE             | 340 |   |                                                                                       | N T S | —            | —                     |              |
| TITLE            |     |   |                                                                                       |       | CARD CODE    | DRAWING NO.           | REV          |
| BODY-TBG. HANGER |     |   |                                                                                       |       | U 01         | 2-V-4L80-05489        |              |

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

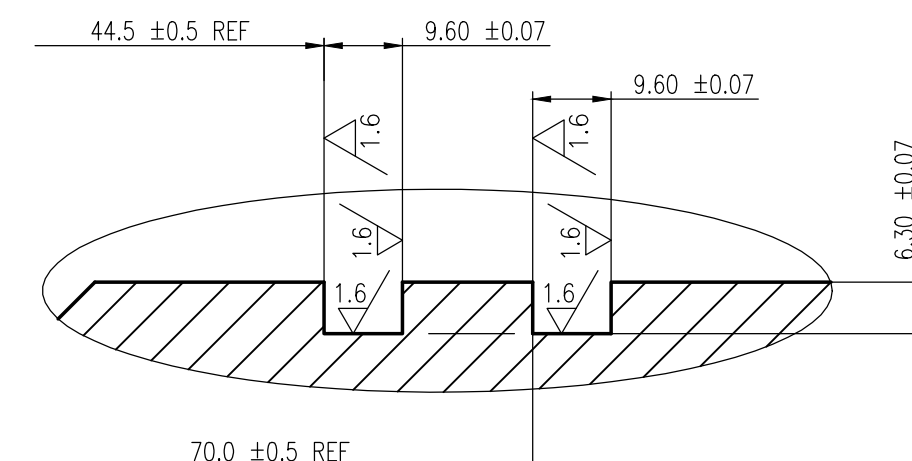
|      |      |            |
|------|------|------------|
| REV  | DATE | ALTERED    |
|      |      | CHD & APPD |
| ZONE |      |            |
|      |      |            |

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP



NOTES:-

1. MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3.REQUIREMENT.  
CHARPY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
2. THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC  
TO SUIT THE 5 1/2" FOX SUSPENSION THREAD.
3. COAT THE SUSPENSION THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
4. LIFT THIN SECTION OF ACME THREAD TO FULL THREAD WIDTH BOTH ENDS.
5. NITRIDE THE ACME THREADS TO A CASE DEPTH OF 0.076mm. – 0.152mm. AFTER NITRIDING  
THREADS MUST BE CLEANED IN ORDER TO REMOVE ALL GRIT, SCALE & SLAT.
6. ACME THREADS MUST BE FREE OF RAG & BURRS. BREAK CREST R0.13 TO R0.25
7. ID TO MATCH WITH THE INDICATED PPF VALUE.  
TO ENSURE METAL TO METAL NOSE SEAL.
8. AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
9. WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST  
APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
10. 100% UT TO BE DONE FOR PSL-3 REQUIREMENT (AT RAW MATERIAL STAGE).
11. PROTECT THE THREADS DURING TRANSIT.
12. UNLESS OTHERWISE SPECIFIED:
  - a) MACHINING TOLERANCE  $\pm 0.25$  mm
  - b) ANGLE TOLERANCE  $\pm 1/2^\circ$



DETAIL-C  
TYP. 2 GROOVES

|                    |
|--------------------|
| PSL-3              |
| TEMP. RATING : P,U |
| MATL. CLASS : FF   |

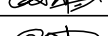
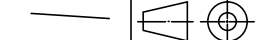
100% HARDNESS CHECK  
(WILL HAVE TO BE CARRIED OUT)

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

|                   |                                                                        |                                            |
|-------------------|------------------------------------------------------------------------|--------------------------------------------|
| DCP No.<br>801843 | ALTERED <i>[Signature]</i><br>CHD <i>[Signature]</i>                   | APPD <i>[Signature]</i><br>DATE 19-11-2014 |
| REV<br>03         | IN SV PORTS, 1/2" - 14 NPT HOLES<br>(6 PLACES) CHANGED TO 1/4"-18 NPT. |                                            |
| ZONE<br>03        | REVISED & REDRAWN IN CAD.                                              |                                            |

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

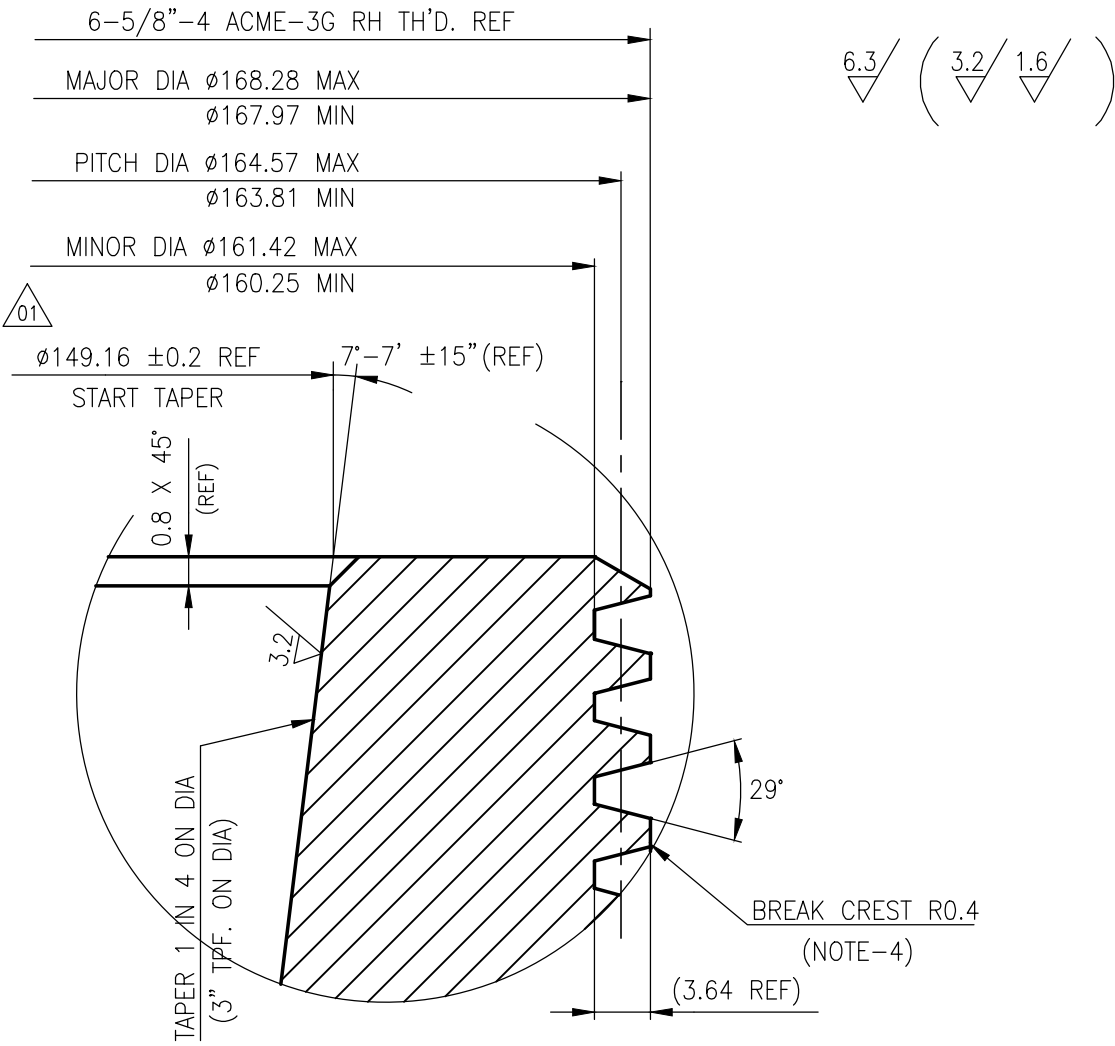
DETAIL-A (TYP 2 GROOVES)

|                                                                                                                                                                                                |                                                                                       |                          |                                                                                       |                |              |                       |                                                                                               |                    |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------|----------------|--------------|-----------------------|-----------------------------------------------------------------------------------------------|--------------------|-------------|
|                                                                                                                                                                                                | PROOF MACHINE FORGING                                                                 | 97 465 002<br>96 469 202 | AISI-410-75K<br>PRODUCT ATTEST                                                        | H & T          | -            | ~107.2                | -                                                                                             | -                  | 00          |
| No OFF                                                                                                                                                                                         | DESCRIPTION                                                                           | MATL CODE                | MATL SPECN                                                                            | HEAT TREATMENT | SCRAP SORT   | NET WT (kg)           | GROSS WT (kg)                                                                                 | DRAWING No         | ITE No      |
| TYPE OF PRODUCT<br>OR NAME OF CUSTOMER/PROJECT<br><div style="text-align: center;"> <u>11"-5000 x 5-1/2"FOX LIFT x 5-1/2" FOX SUSPN.- N-50 - BDP4H5-6SV</u><br/> <u>(5" NOM. BPV)</u> </div>   |                                                                                       |                          |                                                                                       |                |              |                       |                                                                                               |                    |             |
| <br><b>BHARAT HEAVY ELECTRICALS LTD.,</b><br>UNIT: HIGH PRESSURE BOILER PLANT.<br>TIRUCHIRAPALLI -620014. |                                                                                       |                          |                                                                                       |                | DRN          | NAME<br>R.NATARAJAN   | SIGN<br> | DATE<br>04-09-2012 | NO. OF VARS |
|                                                                                                                                                                                                |                                                                                       |                          |                                                                                       |                | CHD          | R.NATARAJAN           |          | 04-09-2012         | /           |
| 365-120                                                                                                                                                                                        |                                                                                       |                          |                                                                                       |                | APPD         | R.ELAYARAJA           |          | 04-09-2012         | /           |
| DEPT VL                                                                                                                                                                                        |  |                          |  | SCALE<br>N T S | WEIGHT (KG). | REFERENCE INFORMATION |                                                                                               |                    | NO. OF ITEM |
| CODE 340                                                                                                                                                                                       |  |                          |                                                                                       |                |              |                       |                                                                                               |                    | /           |
| TITLE                                                                                                                                                                                          |                                                                                       |                          |                                                                                       |                | CARD CODE    | DRAWING NO.           |                                                                                               |                    | REV         |
| BODY-EXT.NECK TBG. HANGER                                                                                                                                                                      |                                                                                       |                          |                                                                                       |                | U 01         | 2-V-4P03-20083        |                                                                                               |                    | 03          |

DRAWING NO. 2-V-4Q02-20180

ALL DIMENSIONS ARE IN MILLIMETRES. FOR TOLERANCES OF UNTOLERANCED DIMENSIONS DURING MANUFACTURE REFER RELEVANT QCP / QP

PSL-3  
TEMP. RATING : P,U  
MATL. CLASS : FF  
100% HARDNESS CHECK  
(WILL HAVE TO BE CARRIED OUT)

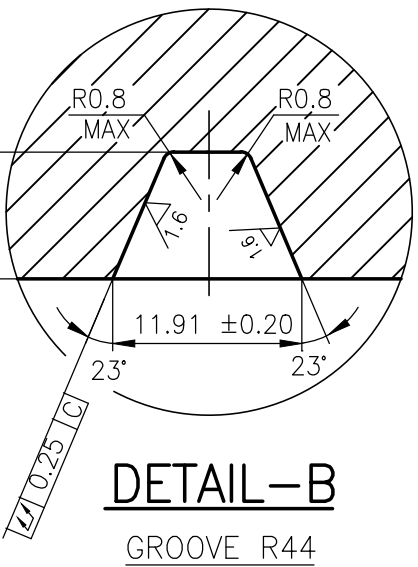


DETAIL-A

NOTES:-

- MATERIAL SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY PROCEDURE FOR PRESSURE RETAINING PARTS TO PSL-3.REQUIREMENT. CHАРY IMPACT TEST FOR RAW MATERIAL TO BE CARRIEDOUT FOR PSL-3 REQUIREMENT.
- FOX THREAD LENGTH, COUNTER BORE, THREAD RELIEF DIA. THREAD FINISH ETC TO SUIT THE 5 1/2" FOX SUSPENSION THREAD.
- COAT THE FOX THREAD AS PER THREAD LICENSEE INSTRUCTIONS.
- ALL ACME THREADS MUST BE FREE OF RAGS & BURRS.
- BOLT HOLES SHALL BE EQUALLY SPACED AND STRADDLE WITH RESPECT TO COMMON CENTRE LINES.
- ID TO MATCH WITH THE INDICATED PPF VALUE. TO ENSURE METAL TO METAL NOSE SEAL.
- AFTER FINAL MACHINING COAT OUTDOOR RUST PREVENTIVE COATING.
- WET MPI SHALL BE DONE ON ALL ACCESSIBLE SURFACES AS PER LATEST APPLICABLE QUALITY PROCEDURE TO PSL-3 REQUIREMENT.
- 100% UT TO BE DONE FOR PSL-3 REQUIREMENT (AT RAW MATERIAL STAGE).
- PROTECT THE THREADS DURING TRANSIT.
- UNLESS OTHERWISE SPECIFIED:
  - MACHINING TOLERANCE  $\pm 0.25$  mm
  - ANGLE TOLERANCE  $\pm 1/2^\circ$

COMP. CODE: 93 185 983 0000  
IMPORTED MATERIAL CODE: 97 465 020 0000



DETAIL-B  
GROOVE R44

| 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                                                                 |
|---------|---------|----------------------------------------------------------------------|
| 801942  | CHD     | DATE 29-05-'15                                                       |
| REV     | 01      | DIMN. $\phi 149.16 \pm 0.20$ WAS $\phi 145.85 \pm 0.2$               |
| ZONE    | 01      | IN BOTTOM, ID $\phi 130.7 \times 25.4$ DEPTH STEP MACHINING REMOVED. |
|         |         | REVISED & REDRAWN IN CAD                                             |

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.

|                                                                                          |             |                              |                       |                |             |             |                |            |
|------------------------------------------------------------------------------------------|-------------|------------------------------|-----------------------|----------------|-------------|-------------|----------------|------------|
| FORGING PROOF MACHINED                                                                   | 92 158 850  | AIISI-410-75K PRODUCT ATTEST | H & T                 | 46             | 72.6        | 107.0       | TYPE No.4N40   |            |
| 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                                              |             |                              |                       |                |             |             |                |            |
| 5-1/8"-5000 PSI (WITH 5-1/2"-FOX THREAD)                                                 |             |                              |                       |                |             |             |                |            |
| BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI -620014. |             |                              |                       | DRN            | R.NATARAJAN | SIGN        | DATE           | NO.OF VAR. |
|                                                                                          |             |                              |                       | CHD            | R.NATARAJAN |             | 03-01-2012     |            |
|                                                                                          |             |                              |                       | APPD           | R.ELAYARAJA |             | 03-01-2012     |            |
| DEPT VL                                                                                  | SCALE N T S | WEIGHT (KG).                 | REFERENCE INFORMATION |                |             |             | NO. OF ITEMS   |            |
| CODE 340                                                                                 |             |                              | W21565-54RL           |                |             |             |                |            |
| TITLE                                                                                    |             |                              |                       |                |             | CARD CODE   | DRAWING NO.    | REV        |
| BODY - FLOW ADAPTER                                                                      |             |                              |                       |                |             | U 01        | 2-V-4Q02-20180 | 01         |



# Bharat Heavy Electricals Ltd.

Valves Purchase  
Trichy - 620 014, India

## BHEL Enquiry

| Sl No | <b><u>BHEL COMMERCIAL TERMS AND CONDITIONS for INDIGENOUS SUPPLIES</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |
| 3     | <b>Prices</b> shall be <b>quoted item wise</b> only and prices should be firm.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |
| 4     | <b>Delivery Terms:</b><br>1. For import Supplies: FOB nearest airport as per incoterm 2010<br>2. For Indigenous Supplies: FOR BHEL Trichy                                                                                                                                                                                                                                                                                                                                                                                        |                       |
| 5     | <b>Validity of offer</b> shall be 2 months from the date of tender opening.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |
| 6     | <b>Delivery</b> should be 8 weeks from the date of purchase order                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |
| 7     | <b>Liquidated Damage:</b> Liquidated damages shall be 0.5% of the undelivered portion subject to a maximum of 10% of the total order value.                                                                                                                                                                                                                                                                                                                                                                                      |                       |
| 8     | <b>Following Risk Purchase clause</b> 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     | <b>Terms of Payment:</b> 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement. Offers with payment term as Confirmed LC and advance payment will be rejected.<br>(for other terms loading will be done as per terms and conditions)                                                                                                                                                                                                                                       |                       |
| 10    | Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |
| 11    | Any warranty replacement during warranty period shall be supplied free of charge on FOR Site basis/destination specified by BHEL                                                                                                                                                                                                                                                                                                                                                                                                 |                       |
| 12    | 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.
- Your specific acceptances to BHEL Payment terms, LD and Risk Purchase Clause are essential for consideration of your offer. Other wise your offer is liable for rejection.

Signature & Office Seal of the vendor



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

#### 1. QUOTATIONS:

- a. **BID system:** The offers are invited in Two part bid system (Part I will be Techno-commercial bid and part II will be Price Bid). Both bids should be submitted together on or before due date.
- b. **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 per unit for each type. Offer should sent to the below mentioned address:  

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](mailto:tender_cell@bheltry.co.in)
- c. **Late tenders:** Tender received after 2.00 pm on due date will be considered as Late tender. Late tenders will not be considered under any circumstance.
- d. **Regulations:** 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.
- e. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- f. **Deviation.** Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".
- g. **Confirmation:** Confirmation for compliance is to be given in the offer for all the techno commercial conditions specified in the specification.

#### 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.  
For Import Supplies: Payment term is 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.
- b. **Liquidated Damage:** 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.
- c. **Delivery Terms:**  
For Indigenous Suppliers: FOR BHEL Trichy inclusive of freight and insurance.  
For import Supplies: CFR/CIF Chennai seaport/FOB airport as per incoterm 2010.
- d. **Validity of Offer:** Prices should be valid for 60 days from the date of tender opening.
- e. **Delivery period:** Delivery should be before 8 weeks from date of purchase order.
- f. **Taxes & Duties:** Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer. Sales Tax payable as extra 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.
- 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.
- h. **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. Guarantee certificate should be part of test certificates which should be provided along with supply
- 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 offered material is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser. For imported components, Duty benefits should be passed to BHEL.
- j. **Miscellaneous:** Any 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 by Purchaser will not be applicable to the contract.



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

#### **k. 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.

### **3. GENERAL CONDITIONS**

- a. The tender evaluation and finalisation will be done on items sl no wise.
- b. BHEL reserves the right to increase or reduce or split the Tender Quantity and 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. BHEL reserves the right to finalize the tender either through price bid opening or through Reverse Auction route.
- g. BHEL reserves the right to reject the offer of a particular bidder due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.
- h. The Drawings/Technical documents with this enquiry are sole property of BHEL & should not be misused in any form.
- i. The Bidder along with its associates/ collaborators/ subcontractors/sub-vendors/consultants/ service provider shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> & shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

### **4. DOCUMENTATION:**

- a. **With Consignment:** Original duplicate for transporter copy, Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Calibration Report, Compliance Certificate, Guarantee/Warranty Certificate etc...
- b. **To Finance:** Original and Duplicate Invoice for payment should be sent directly to  
Senior Manager, Finance/Valves-Bills section  
BHEL TRICHY 620014
- c. **To Purchase:**
  - i. FOR BHEL TRICHY case- Copy of Invoice, Packing list, LWB and Delivery challan.
  - ii. FOR Site case- Original Excise Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate and Inspection report, Test certificates as per PO, Original Site Acknowledgment etc...
- d. **Identification:** Material code, Purchase Order, PO item Sl No, Unique Sl No if any should be provided in all despatch documents, materials and packing clearly. All description should be exactly matching with the Purchase order

### **5. TENDER EVALUATION:**

#### PART I Techno-commercial Bid.

- All vendor should provide confirmation to Drawing/TDC/ Specification and commercial conditions. All vendors should also submit GA drawing, datasheet and C&I diagrams of the offered product wherever applicable.
- Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected
- Techno-commercially suitable vendors alone will be intimated for price bid opening.



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

#### PART II Price Bid.

- L1 bidder will be decided based on landed cost for the equipment to BHEL.
- For evaluation, the exchange rate shall be taken as TT selling rate of SBI on date of Part-1 bid opening.

#### LOADING CRITERIA

- "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 vendors: 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.
- 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).
- If supplier offers more than the required delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.
- If suppliers not agrees with risk purchase clause, guarantee clause, term of payment other than mentioned above the offer will be rejected.

**SCHEDULE OF DEVIATIONS**

Enq Ref:

Offer Ref:

Date:

**Commercial Deviation:**

| Annexure /<br>Clause No. | Description | Supplier Deviation |
|--------------------------|-------------|--------------------|
|                          |             |                    |
|                          |             |                    |
|                          |             |                    |

**Technical Deviation:**

| Annexure /<br>Clause No. | Description | Supplier Deviation |
|--------------------------|-------------|--------------------|
|                          |             |                    |
|                          |             |                    |
|                          |             |                    |

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

Signature with Seal