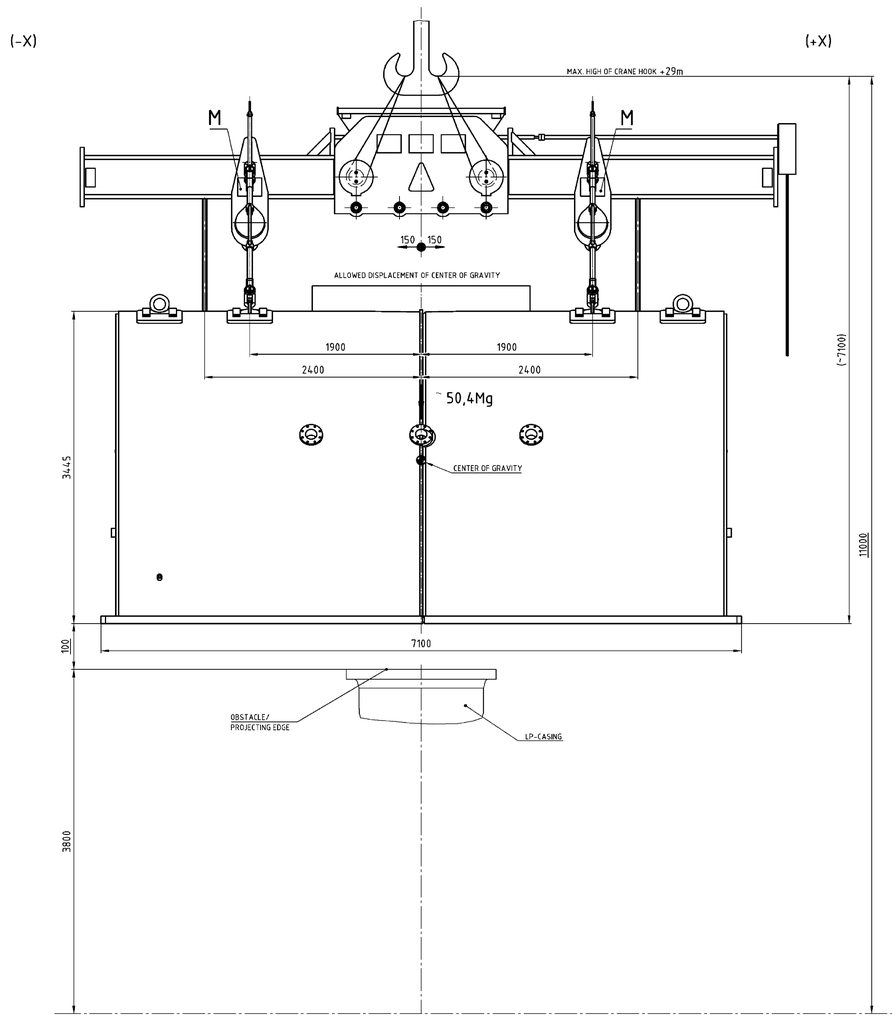
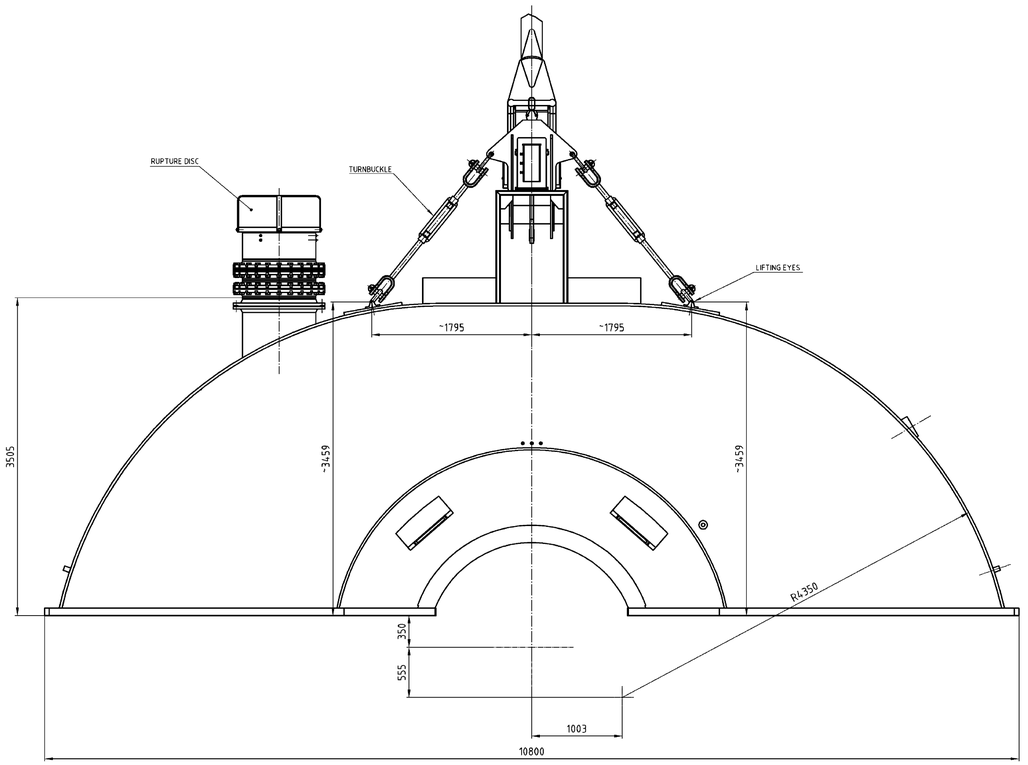
DRAWING No. 0-12090-48000

LP UPPER PART





TECHNICAL REQUIREMENT:–

IDENTIFICATION ACCORDING TO HW 0400397.

SUPPLIER:– GSK STAHL–UND MASCHINENBAU GMBH OR EQUIVALENT.

MAT. CODE W90312090137

GRADE OF UNTOL.DIM			
M/CG.–Z/M/F AA0230208			
WELDING–K/B/Z/P AA0621104			
GAS CUTTING–T3'AA0621101			

REV	DATE	ALTERED / CHECKED
ZONE		

GMS No./ C.B.O.M 0 12090 48000 — STATUS OF DRG

AGREED DEPT	NAME	SIGN	DATE

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: STEAM TURBINE 600 MW

BHARAT HEAVY ELECTRICALS LTD. RANIPUR, HARDWAR

	NAME	SIGN	DATE	NO. OF VAR
DRN	RITESH	sd/–	08.02.2016	
CHD	ALOK	sd/–	09.02.2016	
APPD	D.K.RAY	sd/–	10.02.2016	

DEPT PED	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM No.	NO. OF ITEMS
CODE 4011	1:25	–			

TITLE : LIFTING BEAM

CARD CODE

DRAWING NO. 0–12090–48000 ; 7 22 23 24

SHEET No. 3 | No. OF SHEETS 3

A0 SIZE

DSPPC-2154414
MS 12090
REF DRAWING No.

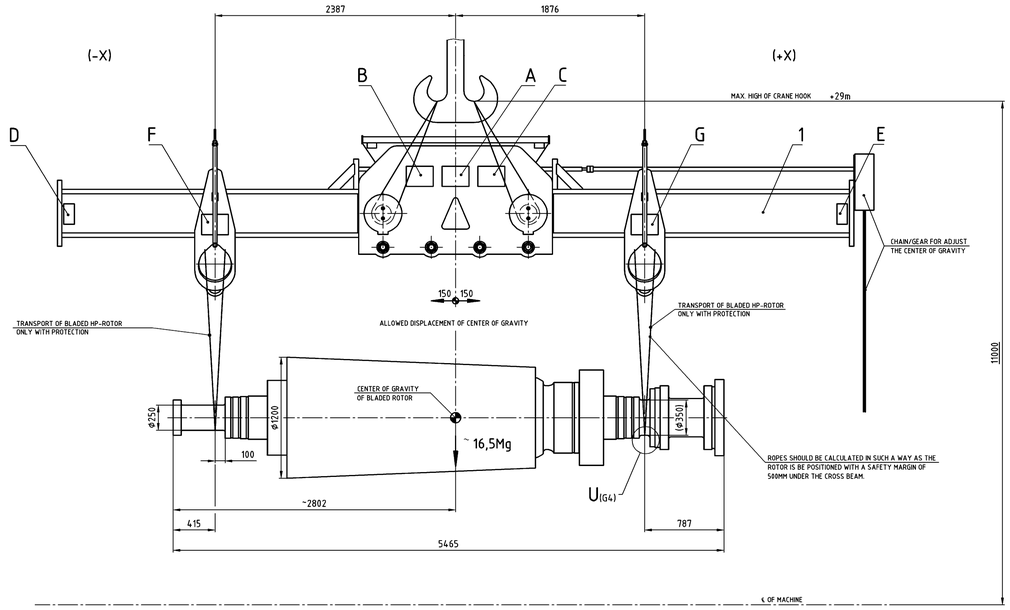
SIGN & DATE

INVENTORY No.

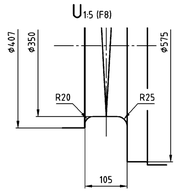
FIRST ANGLE PROJECTION | (ALL DIMENSIONS ARE IN mm) | FORM DG 46 (B)

DRAWING No. 0-12090-48000

HP- ROTOR



U 1:5 (F8)



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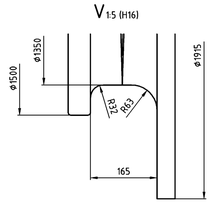

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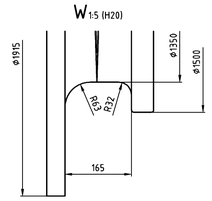
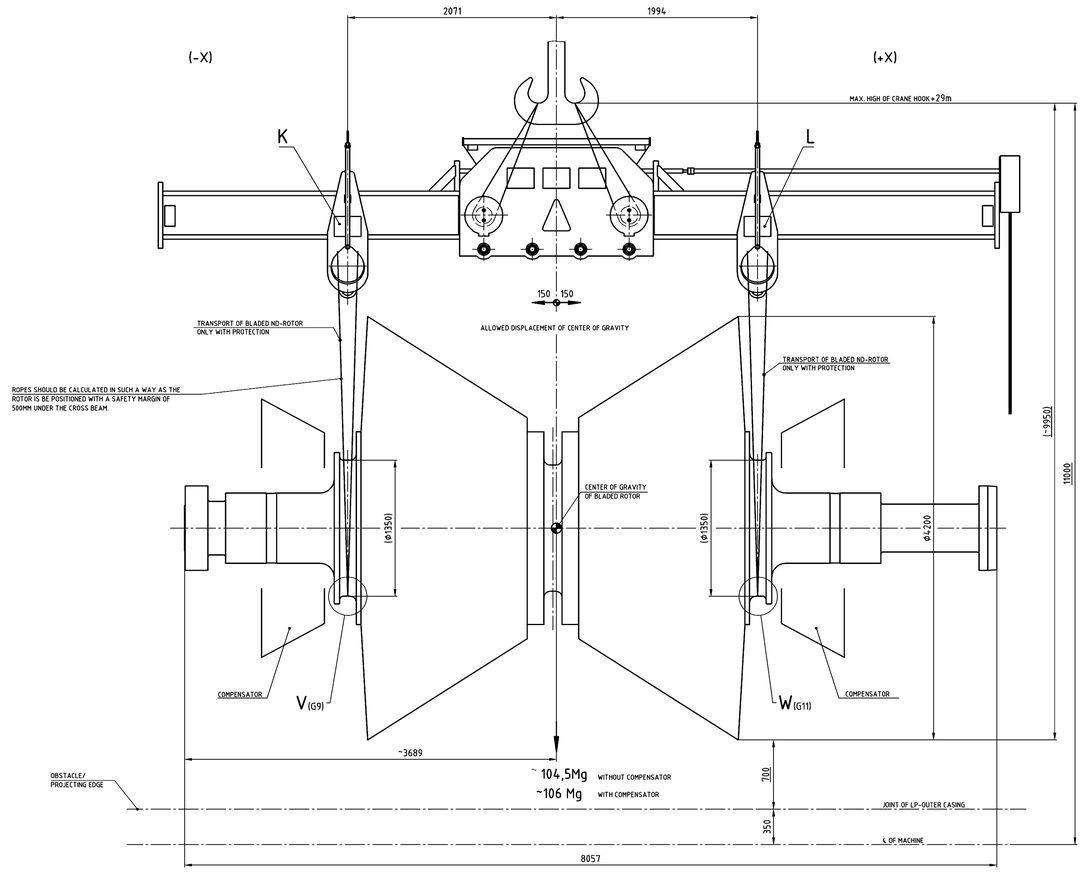


LP- ROTOR



IP- ROTOR

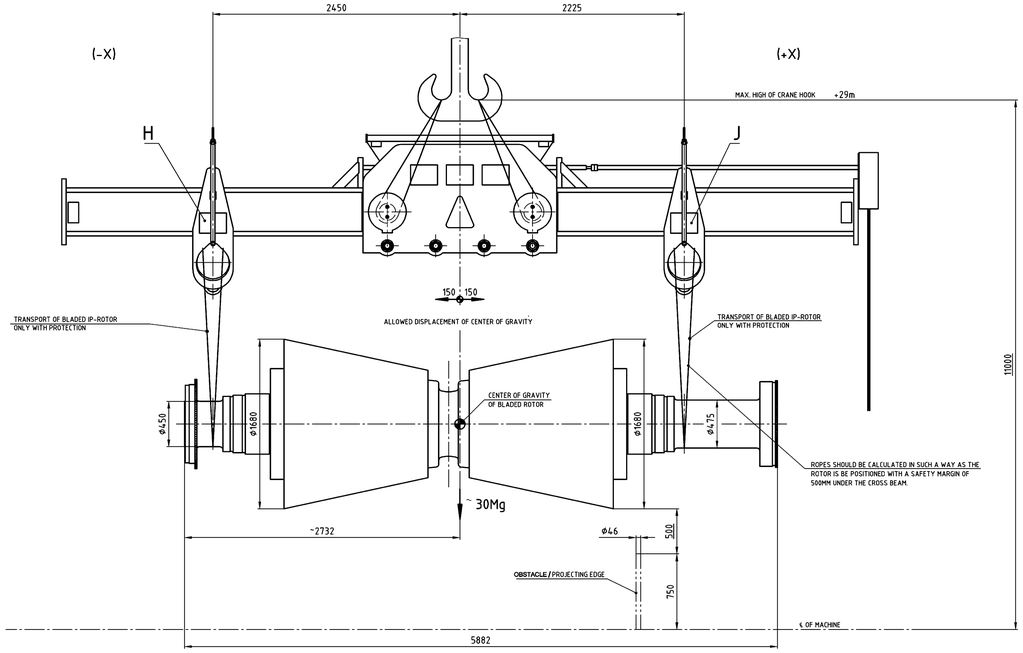


PLATE No	TEXT
A	NAME PLATE OF MANUFACTURER ACC. TO THE ORDERING DATA AND ACC. TO TLV OF THE ORDER(TLV 7050)
B	ALLOWED DISPLACEMENT OF CENTER OF GRAVITY ±150mm
C	WEIGHT : xxxMg
D	(-X)
E	(+X)
F	HP-SHAFT
G	HP-SHAFT
H	IP-SHAFT
J	IP-SHAFT
K	LP-SHAFT
L	LP-SHAFT
M	LP UPPER PART
N	CROSS-OVER PIPE
O	CROSS-OVER PIPE

WEIGHTS INCL. TOLERANCE ADDITION

ATTENTION!
- ALIGNMENT AND ADJUSTMENT FOR CROSS BEAM ACCORDING TO OPERATION INSTRUCTION OF MANUFACTURER
- ROPES MARKED TO PREVENT INTERCHANGING
- TRANSPORTATION OF ROTORS ONLY WITH PROTECTION
- THE CROSS-BEAM IS DESIGNED WITH WORK PLATFORMS ON BOTH SIDES

NOTE!
- The Scope of supply Includes Lifting Beam, Lifting Slings for Crane Hook (between crane hook & lifting beam), Lifting Slings for HP Shaft, IP Shaft & LP Shaft, Lifting Adapters with Load Shackle & Lifting Slings for Cross Over Pipe, Turn Buckles & Braces(with locking bolt) for Casing Upper Part, Leather Sheet Protection, Stands for lifting beam etc.
- Perimeter & Length of the Slings are critical and according to Dimension given in drawing.Lifting Slings for Left & Right of the same module may or may not be same.Party to take note of this.
- Location of Lifting Points for HP/IP/LP Shafts,COP & Casing Upper Part shown in drawing of 01209056500 are very Critical. Party to take note of this and must adhere.
- All other technical requirements shall be as per TLV7050

SUPPLIER:- GSK STAHL-UND MASCHINENBAU GMBH OR EQUIVALENT

NOTE:- ALL OTHER TECHNICAL REQUIREMENTS SHALL BE AS PER TLV7050

MAT. CODE W90312090137

REV	DATE	ALTERED / CHECKED

GRADE OF UNTOL.DIM
M/CG.-C/M/F AA0230208
WELDING-A/B/C/D / AA0621104
GAS CUTTING-T3?AA0621101

GMD No/ C.B.O.M	STATUS OF DRG	
0 1209048000		
	NAME	SIGN
TTX	TTX	SDI-

TYPE OF PRODUCT STEAM TURBINE 660 MW
OR
NAME OF CUSTOMER/PROJECT

BHARAT HEAVY ELECTRICALS LTD.
RANIPUR, HARDWAR

	NAME	SIGN	DATE
DRN	RITESH	SDI-	08-02-2016
CHD	ALOK	SDI-	09-02-2016
APPD	D.K.RAY	SDI-	10-02-2016

DEPT STE | SCALE 1:20 | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM No. | NO. OF ITEMS

CODE 4011

TITLE : LIFTING BEAM

CARD CODE | DRAWING NO. 0-12090-48000

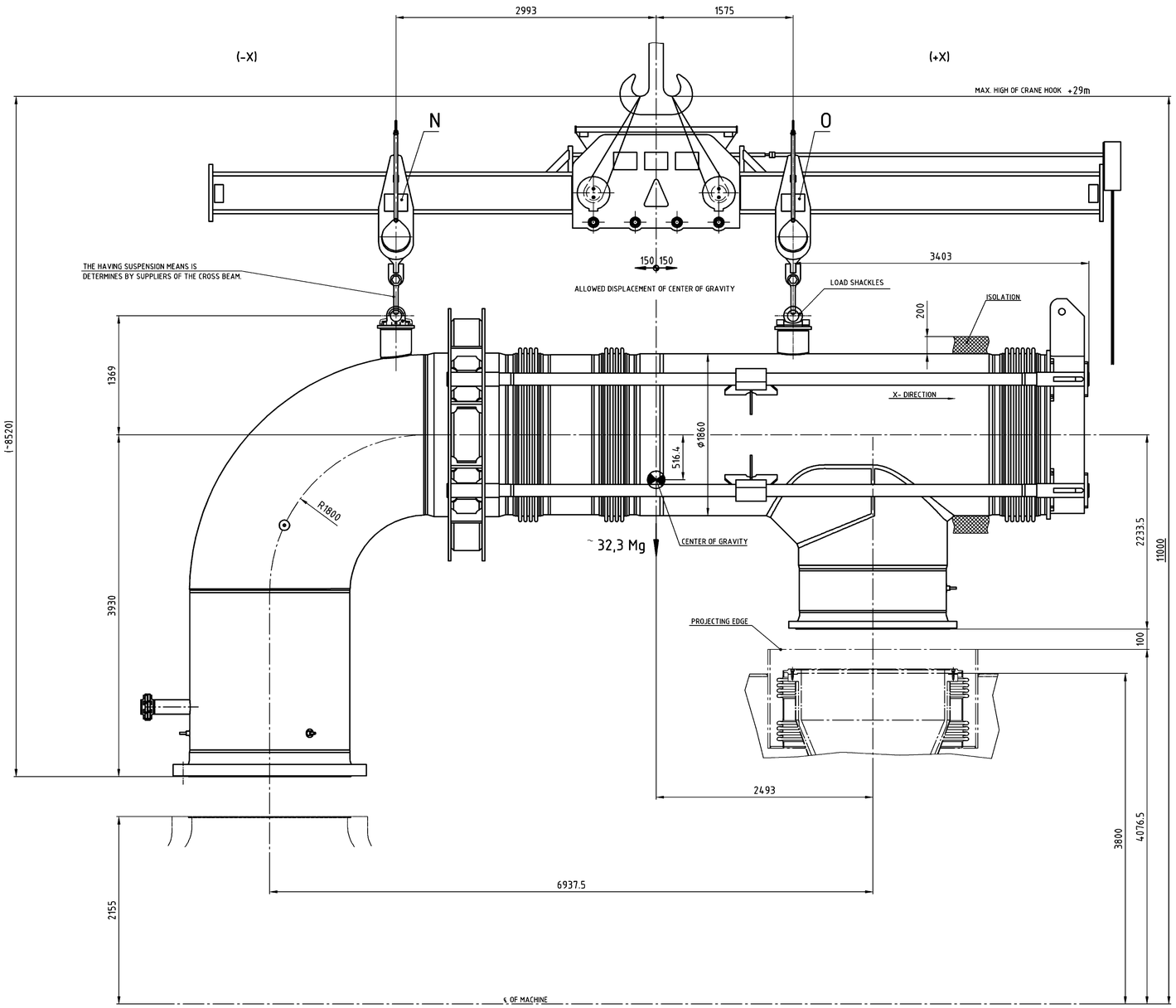
SHEET No. 1 | No. OF SHEETS 3

A0 SIZE

TIN NO. | REF DRAWING No. (SUPPLY & FOR) | SIGN & DATE | INVENTORY No.

FIRST ANGLE PROJECTION | (ALL DIMENSIONS ARE IN mm) | FORM DG 46 (B)

DRAWING No. 0-12090-48000



SUPPLIER:- GSK STAHL-UND MASCHINENBAU GMBH OR EQUIVALENT

MAT. CODE W90312090137

GRADE OF UNTOL.DIM											
M/CG.-C/M/F AA0230208											
WELDING-A/B/C/D/ / AA0621104											
GAS CUTTING-T3'AA0621101											
REV	DATE	ALTERED / CHECKED	REV	DATE	ALTERED / CHECKED	REV	DATE	ALTERED / CHECKED			

GMD No./ C.B.O.M 0-12090-48000 — STATUS OF DRG

	AGREED DEPT.	NAME	SIGN	DATE

TYPE OF PRODUCT STEAM TURBINE 660 MW
OR
NAME OF CUSTOMER/PROJECT

BHARAT HEAVY ELECTRICALS LTD.
RANIPUR, HARDWAR

	NAME	SIGN	DATE
DRN	RITESH	SD/-	08-02-2016
CHD	ALOK	SD/-	09-02-2016
APPD	D.K.RAY	SD/-	10-02-2016

DEPT STE
CODE 4011
SCALE N.T.S.
WEIGHT (KG)
REF. TO ASSY. DRG.
ITEM No.
NO. OF ITEMS —

TITLE : LIFTING BEAM
CARD CODE
DRAWING NO. 0-12090-48000
SHEET No. 2 No. OF SHEETS 3

A0 SIZE

TIN NO. | REF DRAWING No. / DOCUMENT No. | SIGN & DATE | INVENTORY No.

1.0 SCOPE

This document covers the broad guide lines on design and manufacture of welded lifting beam. Vendor to supply one lifting beam assembly consists of beam of box structure or other suitable structure, including following items for lifting purpose.

1) 2 nos. Endless Grummet Slings between Crane hook and lifting beam. (Description: - Endless grummet sling of minimum diameter 54mm (rope grade 1960 N/mm2) and indicative perimeter of 8000mm.)
2) 2 nos. Endless grummet sling for Lifting of HP Rotor (Description: 1 no. Endless grummet sling of minimum dia. 21mm (rope grade 1960 N/mm2) and indicative perimeter of 7600mm + 1 no. Endless grummet sling of minimum dia. 21mm (rope grade 1960 N/mm2) and indicative perimeter of 7900mm)
3) 2 nos. Endless grummet sling for Lifting of IP Rotor (Description: 1 no. Endless grummet sling of minimum dia. 24mm (rope grade 1960 N/mm2) and indicative perimeter of 8600mm + 1 no. Endless grummet sling of minimum dia. 24mm (rope grade 1960 N/mm2) and indicative perimeter of 8670mm)
4) 2 nos. Wire rope sling (eye type) for Lifting of LP Rotor (Description: 2 nos. Wire rope sling of minimum dia. 48mm (rope grade 1960 N/mm2) and indicative perimeter of 8400mm).
5) 2 nos. Lifting adaptors + 2 no. Load shackle for lifting COP (Adaptors to be suitably designed to supplier for lifting COP + Description of load shackle- Load shackle 25T)
6) 4 nos. turn buckle + 2 nos. Braces for lifting LP Outer casing :-(Description: Turn buckle of Jaw & Jaw design 2"/16.78 T capacity + braces should be suitably designed by supplier for lifting LP Outer casing)
7) Protective (Secutex-PU)/Leather sheets: - total 6 nos. (2 nos. for each rotor)
8) Stand for lifting beam: - Qty 2 nos.

Note:-

a) Vendor to note that length of sling /adopters furnished above are indicative based upon dimension between crane hook and lifting bollard for lifting components mentioned in Clause 9g as shown in drg 01209048000(i.e. 2185mm).

b) Vendor to note that Dia. of sling between crane hook and lifting beam may change based upon the weight of the lifting beam. (Weight of lifting beam considered here is approx.7200 kg.)

c) Maximum dia. of slings to be restricted to space available on components to be lifted given in drg no. 01209048000(for e.g. Refer view U,V and W of drg no. 01209048000 sh1)

d) Parameter & length of the slings are critical and according to dimension given in the drawing, lifting slings for left and right of the same module may or may not be same.

e) Location of lifting points for bladed HP/LP/IP shafts, COP & casing upper part shown in drawing 01209048000 are very critical and must be adhered while designing lifting beam and other associated components like slings, load shackles, turn buckles, braces etc.

f) Vertical distance from crane maximum height to bottom most portion of the component (i.e. HP, IP & LP shaft, LP outer casing & COP) to be lifted is furnished in drawing 01209048000 and must be adhered while designing lifting beam and other associated components like slings, load shackles etc.

g) Apart from above scope of supply, party to include other components in the scope of supply if necessary, to lift the following components.

1) Bladed HP Shaft
2) Bladed IP Shaft
3) Bladed LP Shaft
4) LP Outer casing
5) Cross Over Pipe

2.0 PURPOSE

The lifting beam is required for lifting and transportation of fully bladed rotors and assembled outer casing (upper half) of LP turbine and COP at site, during assembly, erection and maintenance. Only one lifting beam has been foreseen for lifting of these components (bladed HP, IP and LP rotors, LP outer casing and COP).

3.0 WORKING LOAD LIMIT

Lifting beam shall be designed for WLL of 110 tons. All other lifting component as per scope of supply shall be designed for loads given in drawing 01209048000.

4.0 Vendor is fully responsible for making lifting beam functional at site. In case lifting beam dispatched to site in disassembled condition, vendor shall be responsible for assembly of lifting beam at site.

5.0 APPLICABLE CODE

The design, manufacture and testing of the Lifting Beam shall comply with the various requirements of the following standards.

DIN 15018 parts I, II & III DIN 15003

IS:5, IS: 800, IS:807, IS:808, IS:1964, IS:2062, IS:2074, IS:2365, IS:2932, IS:3177, IS:3658, IS:3815, IS:3938, IS: 5749, IS5749, IS:8791, IS:11732

This is not a complete list and cross-referred standard have not been listed.

Important: Lifting beam shall meet all statutory safety requirements like Factories Act 1948 an UP Factories Rules 1950 etc. Vendor shall submit certificates of Proof Load Testing Hooks/Bollards, Slings/Links used in place of slings and assembled Lifting Beam from competent authority as specified in Factories Act 1948.

For European/Foreign vendor's following list of standards shall be applicable.

EN 13155, DIN 18800-1,-2,-3 & -7, ISO 5817, BGR 500, DIN 15018-1, DIN 15018-2, ISO 3834-3, ISO 15609-1, ISO 15614-1, EN 287-1, EN 1418, EN 10204, ISO 8501-1, ISO 12944-4, ISO/IEC 17025, EN 473, EN 1677, ISO 2768, ISO 13920.

This is not a complete list and cross-referred standard have not been listed.

Important: Lifting beam shall meet all statutory safety requirements as per VBG 9a.

Following standard to be followed for Shackles, Turn buckle and slings:-

1. Turnbuckle: - IS:3121/ASTM F1145 or equivalent international standard.
2. Load shackles: - ISO 2415/EN 13889 or equivalent international standard.
3. Wire Rope Slings/Grummet slings: - IS: 2266/ DIN-EN-13414-3 or equivalent international standard.

6.0 DESIGN REQUIREMENTS

The detail mechanical designs will be worked out by the supplier. The design shall conform to the specified over all dimensions as well as specified requirements listed in the technical delivery condition.

6.1 Lifting bollards / hooks shall be arranged symmetrically about the center of gravity of the lifting beam, with the loading arrangement to be in the extreme end position. Each lifting bollard/hook shall have at least 60% loads rating of lifting beam. If separate lifting bollard / hooks are foreseen for assembled LP casing (top half) & COP then each of these shall have at least 30% load rating of lifting beam.

6.2 Adjustable load equipment has to be designed for less friction and single operation.

6.3 The overall height of the beam shall be kept as low as possible.

6.4 The adjustable threads of device shall be secured against being unscrewed to extreme position. The number of load bearing threads shall be designed for maximum load case, required factor of safety and an impact factor of 1.25.

Horizontal displacement of center of mass has to consider up to ±150 mm.

6.5 All enclosed spaces in the lifting beam shall be provided with drainage holes of adequate size.

6.6 The mechanical design of the lifting bollards, which are designed for attachments for two endless slings, must be such that the slings can be easily detached. Suitable pulleys/other arrangement shall be provided to keep the slings secured in positions.

6.7 Structural design shall be suitable for a maximum apex angle 120° at the main hook.

6.8 The lifting device shall be designed to withstand most severe combination of different loads which may occur simultaneously during the working. The acceptable stresses in various members shall in accordance with DIN 15018.

6.9 The lifting device shall be designed for hoisting class H1 of DIN 15018. Risk class "Average" shall be used for corrosion.

6.10 Complete lifting beam and its components shall be designed in line with standards / codes referred in clause 5.0. Manufacturing drawings for all the parts and sub-assemblies shall be worked in accordance with technical requirements specified. Strength calculations/Structural Analysis for all the load carrying members shall be worked out and submitted in form of a document for approval along with drawings for approval as per clause 7.1

7.0 DOCUMENTS TO BE SUBMITTED WITH TECHNICAL OFFER

These documents shall include:

- Overall General Arrangement Drawing (OGA)
- Strength calculations/Structural analysis.
- Quality plans.
- Welding procedure specifications and Procedure qualification record duly approved by third party. e.g. Lloyds etc.
- Functional description
- Additionally bought out components such as load equipment's, chain links, hitching ropes etc. have to be specified in the part list as follows:
  - **A.** Supplier
  - **B.** Type
  - **C.** Maximum load capacity

7.1 PRE APPROVAL DOCUMENTS

Five copies of the pre-approval documents shall be submitted for the approval. These documents shall include:

- Overall General Arrangement Drawing (OGA) and Assembly drawings with part list.
- Strength calculations/Structural Analysis.
- Quality plans.
- Welding procedure specifications and Procedure qualification record duly approved by third party. e.g. Lloyds etc.

Approval of the pre-approval documents by the purchaser will in no way absolve the supplier and his subcontractor of their responsibility of sound design and manufacture of record rated load conditions Commencement of manufacture shall start after the approval of above documents by the purchaser will be made the once documents are submitted for approval. This information may be forwarded to customer and authorized inspection agency within the scope of the order.

8.0 FUNCTIONAL DESIGN

8.1 Functional Design Calculation & Mechanical Design

The following codes, standards and guidelines shall be applied for functional design calculations and mechanicals design as far as applicable.

- This TDC
- DIN 15018-1,-2/EN 13155 and further cross-referred DIN.
- Material as per IS: 2062, IS: 1964, for structural steel IS: 808 rolled steel beam, Channel and angle section etc. Grades, size and IS Number of the steel section to be used shall be clearly indicated on the manufacturing drawings.
- Relevant National/International Standard on the subject.
- All statutory obligations like Factories Act 1948 and UP Factories Rules 1950/VBG 9a for accident prevention, applicable regulation at the time if design and manufacturing.

8.2 Testing and Inspection Requirements

8.2.1 The supplier shall carry out inspection as agreed to established and maintain quality to ensure the mechanical accuracy of components, compliance with drawings, identification and acceptability of all materials, parts and equipment

8.2.2 Quality plan for all major equipment/components/assemblies shall be submitted by supplier for approval as per the requirements of this specification in the BHEL format.

Copies of all the test procedures acceptance norms and reference documents shall be furnished along with Quality Plans. In finalized QP, customer hold points shall be identified and communicated to supplier.

8.2.3 The purchaser shall be notified in writing for witnessing of tests and inspections identified as customer hold points (CHP) in the QP, three weeks in advance of the actual date of inspection/test. Quality Plan format shall be sent along with annexure-Q along with enquiry to supplier and approved QP shall form a part of purchase order.

8.2.4 The purchaser's representative shall be given full access to the shop in which equipment is being manufactured or tested and all test record shall be made available to him. Final inspection shall be carried out by the Purchaser's representative before the dispatch of the equipment. Final routine and type test shall be carried out in the presence of the purchaser's representative. Purchaser's representative may be qualified as purchaser's representative or its customer's representative or any other inspection agency as appointed by purchaser/its customer.

8.2.5 Q.A. documents package including copies of records / certificates for all tests / inspection carried out as per the quality plan / technical specification / drawings / data sheets shall be sent to purchaser along with the dispatch of the equipment to site. Q.A. documentation shall be submitted to Purchaser for approval prior to dispatch of equipment's.

All the sub-vendors for agreed list of bought-out items including all raw materials / semi-finished / finished component / shall be subject to the approval of BHEL Customer.

8.2.6 Q.A. package shall include the following.

- Approved Welding Procedure Specification and Procedure Qualification Record.
- Welder's Qualification records.
- Rerecords of all N.D.T.
- Records of all tests / checks as per Quality Plan /drawing / specifications.
- Records of heat-treatment.
- Records of repairs. If any.

Records of deviations / concessions, if any and their approval purchaser / customer.

8.2.7 All tests / checks during various stages of manufacture shall be carried out as per agreed quality plan / drawings specification requirements and shall be binding on supplier.

However in the event of any deficiency observed in any part of equipment, purchaser reserves the right to extend the scope of inspection / testing if found necessary.

8.2.8 Incase inspection / tests are performed by the supplier he shall demonstrate that he has qualified staff and necessary inspection / test equipment for the purpose.

8.2.9 In case the supplier intends to delegate the inspection and testing to some other agency then prior approval from the purchaser shall be required.

8.2.10 All inspections / tests listed shall be scheduled during the course of manufacture in such a way that flaws are detected on first opportunity well in time and remedial measure can be taken without jeopardizing the delivery dates.

8.2.11 Each certification shall include material specification, grade of steel, manufacture's marking batch no., specimen no. etc.

8.2.12 The test / checked envisaged by the purchaser to be carried out (listed below) are minimum requirement and are in addition to tests / checks carried out by supplier as per their internal practice, however , tests and inspection requirements shall be finalized in detail at the time if quality plan finalization.

- Material test for chemical and mechanical properties of all items. All materials shall be properly identified and material test certificates shall have correlation with the material identification. In the absence of test certificates / their correlation with the material, check tests for chemicals and mechanical properties shall be carried out.
- Ultrasonic testing of hook before and after load testing shall be carried out as per IS:8791. Acceptance norms shall be as per IS:8791, Class-A
- 100% D.P.T. of lifting bollard / hook after proof load lest. Dye Penetration Test shall be carried out as per IS:3658 and acceptance norms shall be as per IS:11732, Level-1
- Proof load test of hook / bollard as per IS:5749/ IS:3841. A certificate issued by competent authority should be submitted.

100% RT/UT of all welds in tension zone of lifting beam and weld taking the load at both ends of lifting beam shall be carried out as per ASME section-V acceptance norms shall be as per ASME section VIII. All other welds shall be subjected to 10% RT/UT. All field corner welds and welds not tested by RT/UT shall be subjected to 100% MPI / D.P.T. examination (accessible areas only).

All welding procedure and welders shall be qualified as per ASME section IX. Qualification shall be witnessed by purchaser's representative / third party inspection agency.

8.3 Stage Inspection – Stage inspection / supervision shall take place during course of manufacturing. Any deviation from the test / inspection, envisaged in the quality plans shall require the consent of the Purchaser.

All tested and examination listed shall be binding for stage inspection.

The supplier shall be responsible for the execution and commissioning of the inspection / test listed in the test and examination plans.

8.4 A pre-dispatch inspection will be carried out for all material / component / equipment / assemblies at the end of all shop tests at the supplier's works to check for –

- Verification of completeness and acceptance of all previous tests, inspections & checks performed and satisfactory documentation of the same.
- Checks for workmanship appearance and cleanliness.
- Checks for identification, painting, preservation and packing.

8.5 Acceptance Testing: Each lifting beam shall be subjected to functional test as per loading specified. In particular the freedom of movement of moving parts, adherence to the tolerance and also to the clearance necessary for proper functioning shall be demonstrated by the supplier.

8.5.1 Functional / load testing shall be carried out prior to dispatch unless otherwise agreed upon. This testing shall be done in presence of purchaser or his representative. Assembly and load testing shall be the sole responsibility of the supplier. A certificate of satisfactory performance should be signed by both parties in a suitable Performa. Supplier owns full responsibility to make it fully operative at site.

8.5.2 Incase slings are used in the lifting beam, then each slings leg shall be proof load tested to twice the permissible working load (maximum safe working load + dead weight of lifting beam) prior to use. Incase solid links etc. are used in place of slings Proof Load testing shall be at 1.5 times (safe working load + dead weight of lifting beam) a certificate issued by competent shall be furnished.

8.5.3 Proof load testing shall be carried out 1.5 times the safe working load for 30 minutes. After the proof load test all items shall be checked dimensionally to detect any permanent set or other defect. After proof load test all weld seem shall be examined by

100% MPI / DPT (only one accessible area). A certificate issued by competent authority for Proof Load Testing shall be furnished.

8.5.4 Deflection test shall be carried out at safe working load. Deflection shall be noted after holding the load for 10 minutes (deflection should not exceed 1/900 of the span).

8.5.6 Identification marking:- The lifting beam shall be permanently labeled with beams own weight, permissible safe working load at the individual suspension point with the latter of sufficient size (approximately 100 mm).

A name plate will either be fixed or captive engraving made on Lifting Beam bearing to BHEL and manufacturer's name/identification marking, order number & year of manufacture. Beam size given length and width shall be put at a suitable location so that component can be unmistakable identified at a later date. Functional test stamping shall be affixed at the point along with the information specified above. A proper place preferably at the center of beam should be marked for putting BHEL emblem.

9.0 PRESERVATION / PAINTING

The part shall be properly conserved by applying suitable rust preventers for long storage in open humid environment. The Lifting Beam shall be given protective coating of one coat of red oxide zinc chromate primer (IS: 2074) and four finishing coats of dark admiralty gray shade no. 632 (unless otherwise specified) (IS:5, IS:2932). Prior to application to prime the surface shall be suitably prepared for for painting. Final paint thickness shall not be less than 80 microns (unless otherwise specified). All bright finished parts to be given long lasting corrosion preventive coat. The moving parts shall be treated with long lasting lubricants. For lubrication required at future date, manufacture will furnish specification and supplier's address of the recommended lubricant, In case of any special working condition purchaser shall clearly specify the condition to supplier for giving proper anti-corrosion treatment.

Note:- Paint as per equivalent international standard may be accepted with prior permission from BHEL however preservation / painting should satisfy above clause 9.0.

10.0 PACKING DISPATCH INSTRUCTION

Supplier shall be informed about the delivery site in advance. Suitable dispatch instruction will also be given. Supplier should dent a copy of packing list and shipping documents well in advance. (at least a month) before actual shipment.

Another copy of actual packing list/drawing/shipping documents should send along with consignment properly packed in a polythene cover. The parts shall be packed so that

adequate protection is accorded against contamination, mechanical damage and corrosion.

Unless otherwise specified, assembly and testing of the Lifting Beam and warranty of its satisfactory performance at the place of delivery shall be responsibility of the supplier.

Assembly can be done at site with prior permission of the purchaser / the customer. However, full responsibility of assembly and testing lies with the supplier. Any assembly tools and commissioning spare required for this purpose shall be arranged by the supplier at his cost and risk. All statutory tests shall be carried out by supplier at his cost and risk.

STE-TE	Alok Kumar Singh		
STE-TE	Pradeep Kanaujia		
STE-TE	Munendra Mittal		
DEPTT.	NAME	SIGNATURE	DATE

	RECORDS OF CHANGES				
SL. NO.	**PARA NO. / ANNEXURE NO.**	**DOC. NO. / REV. NO.**	**REISSUE REV. NO.**	**REVISION DATE**	**NATURE OF CHANGE**
1.	Addition of data in Scope of Supply at Page 1	00	01	18/07/2017	NEW DOCUMENT