



**Bharat Heavy Electricals Limited**  
Industrial Valves Plant  
Goindwal Sahib (Punjab)

**Enquiry No.**  
**2324-083E**

**Date:**  
**31.01.2024**

**NOTICE INVITING TENDER (NIT)**

Dear Sir / Madam,

BHEL Goindwal Sahib (Punjab) invites offers from interested bidders / suppliers for submission of their offer through e-procurement mode at <https://eprocurebhel.co.in/>. Offers in any other mode will not be accepted. In case of any difficulty faced while registering on BHEL's e-Procurement portal developed by NIC, queries may be addressed to 0120-4001002, 0120-4001005 and 0120-6277787; email: [support-eproc@nic.in](mailto:support-eproc@nic.in). These details are also available on 'Contact Us' page of the portal.

<b>Tender enquiry no. &amp; date</b>	2324-083E dated 31.01.2024
<b>Form of contract</b>	Supply
<b>Tender / Item description</b>	Procurement of castings from NPCIL vetted BHEL approved foundries
<b>Material standard / Drawings</b>	As per attached TDC(s) & Sample Drawings
<b>Location(s) of Supply / Work</b>	BHEL, Industrial Valve Plant, Goindwal Sahib, Dist. Tarn Taran -143422 (Punjab)
<b>Earnest Money Deposit (EMD)</b>	Not Applicable
<b>Quotation parts</b>	Two Part Bid
<b>Tender download / Bid submission start date</b>	<b>31.01.2024 (17:15 Hrs. IST)</b>
<b>Tender download / Bid submission end date</b>	<b>12.02.2024 (12:00 Hrs. IST)</b>
<b>Tender / Bid opening date</b>	<b>12.02.2024 (15:00 Hrs. IST)</b>
<b>Make in India local content</b>	20 %
<b>Validity of offer</b>	90 days from the actual date of Part I opening
<b>Reverse auction</b>	Applicable
<b>Contact person details</b>	Sumeet Bansal, DGM 01859-224 628, <a href="mailto:sbansal@bhel.in">sbansal@bhel.in</a>  Sahil Malhotra, Manager 01859-224 603, <a href="mailto:sahil@bhel.in">sahil@bhel.in</a>



BHEL IVP  
GOINDWAL SAHIB

## SPECIAL TERMS AND CONDITIONS

**Rate Contract tender enquiry no. 2324-083E dated 31.01.2024 Due date 12.02.2024**

**Tender Description:** Procurement of castings from NPCIL vetted BHEL approved foundries

*This tender is through e-procurement mode. Tender documents can be downloaded from <https://eprocurebhel.co.in>*

### **S1 SCOPE OF SUPPLY**

Castings to be procured in the tender enquiry are for **Nuclear Power project**. TDC(s) and drawings are attached herewith. Following are the Major technical requirements:

1. Castings shall be procured from NPCIL vetted BHEL approved foundries
2. First heat/lot of pouring and mechanical test shall be witnessed by BHEL/BHEL TPIA
3. Chemical and mechanical tests on the material shall be performed in laboratories approved by NPCIL.
4. The list of NPCIL approved brands of PT & welding consumables is to be complied with. *(List of approved brands of penetrant materials and welding consumables is enclosed with tender enquiry)*
5. TDC 412/Rev 28 shall be applicable for the castings and RT shall be required as per the TDC.
6. IGC testing is required for all items of S.No 1 of [Table I] given below.

Material shall be supplied as per the applicable latest Technical Delivery Conditions (TDC)/ Material Standard requirements/Drawings/RT Shooting sketch and other requirements as given in the Purchase Order. The applicable TDC for 1) Indian vendors is TDC:0412 Rev28 (or latest applicable), 2) Wherever tolerances are not specified in drawing, for untoleranced dimensions in castings VL:STDC:023 Rev 02

TDC(s) and drawings are attached herewith.

**[TABLE I]**

S.No	Material Code	# Rate schedule / Material Description	Qty	Unit of Measure
1.	G92110280000	CF3M- UPTO C500 CASTING (IGC)	3792.00	KG
2.	G92110080000	WCB/WCC- 4" & ABOVE, UPTO C500 CASTING	298.28	KG
3.	922063360000	COMP-FLANGE_SOW_3_C150_CF3M-M967	40	NO
4.	922063370000	COMP-FLANGE_SOW_6_C150_CF3M-M968	40	NO

Quantity variation  $\pm 10\%$  is applicable.

# Rate schedule given above represents all castings under respective class range. This rate schedule is for tendering purpose only. Actual PO will be released as per material codes and unit weights given below.



BHEL IVP  
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[TABLE II]

S. no.	MATL_NO	DESCRIPTION	Drawing no.	UNIT	QTY	Weight ref. (Established weight / SAP weight)	Unit Wt (Kg)	Total Wt (Kg)
1	922061840000	ARM_3_C150_FV_CF3M-M967	3VM96735341R/00	NO	20	Est	0.99	19.8
2	922061780000	BODY_3_C150_FV_FL_CF3M-M967	2VM96712541R/00	NO	20	Est	33.97	679.4
3	922061820000	FLAP_3_C150/C300_FV_CF3M-M967	3VM96735451R/00	NO	20	Est	2.25	45
4	922061860000	COVER_3_C150_FV_CF3M-M967	3VM96735343P/01	NO	20	Est	10.5	210
5	922061800000	SEAT RING_3_C150_FV_CF3M (IGC)	3VM96735449R/00	NO	20	Est	1.58	31.6
6	922061880000	ROD DIA40X30-CF3M-M967	4VM96727550R/00	NO	20	SAP	0.3	6
7	922061850000	ARM_6_C150/C300_FV_CF3M-M968	3VM96835341R/00	NO	20	SAP	3.65	73
8	922061790000	BODY_6_C150_FV_FL_CF3M-M968	2VM96812539R/00	NO	20	Est	92.7	1854
9	922061830000	FLAP_6_C150/C300_FV_CF3M-M968	3VM96835451R/00	NO	20	Est	9.05	181
10	922061870000	COVER_6_C150/C300_FV_CF3M-M968	3VM96835343P/01	NO	20	Est	29.6	592
11	922061810000	SEAT RING-6-C150-FV-CF3M-M968	3VM96835449R/00	NO	20	SAP	3.7	74
12	922061890000	ROD DIA70X40-CF3M-M968	4VM96827550R/00	NO	20	Est	1.31	26.2
	<b>G92110280000</b>	<b>CF3M - UPTO C500 CASTING (IGC)</b>		<b>Kg</b>				<b>3792.00</b>
13	922061490000	BODY_6_C150_GV_FL_WCB-M966	2VM96612512R/00	NO	4	Est	48	192
14	922061510000	WEDGE_6_C150_WCB-M966	2VM96612514R/00	NO	4	Est	6.9	27.6
15	922061540000	YOKE-BONNET_6_C150_GV_WCB-M966	2VM96612516R/00	NO	4	Est	19.67	78.68
	<b>G92110080000</b>	<b>WCB/WCC- 4" &amp; ABOVE, UPTO C500 CASTING</b>		<b>Kg</b>				<b>298.28</b>
16	922063360000	COMP-FLANGE_SOW_3_C150_CF3M-M967	3VM96735527P/00	NO	40			
17	922063370000	COMP-FLANGE_SOW_6_C150_CF3M-M968	3VM96835527P/00	NO	40			

### Pre-Qualification terms for participating in the Rate Contract:

1. Bidder should be a manufacturer for Carbon Steel Castings/Alloy Steel Castings/Stainless Steel Castings. Bidder to upload undertaking/ISO certificate/documentary evidence for being manufacturer.



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GOINDWAL SAHIB

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2. Bidder shall submit “Well Known Foundry” recognition certificate under the Indian Boiler Regulations 1950 for manufacture of Boiler Quality Castings which shall be valid as on date of tender opening and bidder has to submit undertaking that they shall renew it from time to time. Well Known Foundries, which have applied for renewal on the date of tender opening, shall submit the expired “Well Known Foundry” certificate and documentary evidence/undertaking for renewal of the same.

However, in case the bidder is not having “Well Known Foundry” certificate, then he can supply castings after inspection from IBR approved inspection authorities for IBR items. Foundries which are not recognized as “Well Known Foundry” should have experience of supplying Boiler Quality Castings under Indian Boiler Regulations 1950 and shall have to submit purchase order and corresponding proof of Witness pouring by IBR approved inspecting authorities. Date of such purchase order shall be on or after 01.01.2021.

3. Bidder should have experience of supplying Radiography Tested (RT) castings and shall have to submit purchase order and corresponding proof of RT reports. Date of such purchase order shall be on or after 01.01.2021.
4. Bidder should have successfully manufactured and supplied steel castings. Bidder shall submit customer Purchase Orders and their invoices for supply of Carbon Steel Castings/Alloy Steel Castings /Stainless Steel Castings with minimum cumulative value of Rs. 10,00,000 (Rs. Ten lakhs only) as proof. For MSEs, the required cumulative value of POs and invoices shall be Rs.5,00,000.00 (Rs. Five lakhs only). Date of Purchase Order/s date & corresponding invoices: should be 01.01.2021 or afterwards and upto the date of actual bid opening. All mentioned values are net of taxes.

In case the bidder submits purchase orders for the machined castings, 80% of the PO value (net of taxes) shall be considered for evaluation against the above pre-qualification criteria. Purchase orders submitted by bidders for supply of raw steel castings/ machined steel castings shall only be considered.

Start-ups shall be exempted from this criteria of Purchase order and invoice submission without any relaxation in quality standards or technical parameters as per D.O. No. 5(4)/2016-BE-I dated 15.02.2017. For claiming Start-Up exemption, vendors have to submit DPIIT (Dept. of Promotion of Industry and Internal Trade)/DIPP (Department for Industrial Policy and Promotion) recognition certificates.

**S2 PART-I: TECHNO-COMMERCIAL BID should contain all the documents/confirmations as per following details:**

- a) Acceptance of Techno-Commercial terms and conditions is to be provided in Part I bid format.
- b) MSE vendors should submit **Udyam Registration Certificate/UAM** for availing applicable benefits for MSE vendors as per tender terms. Validity of document shall be considered as on date of Part I opening as per the latest available notification from Govt.
- c) Documents as per pre-qualification terms.
- d) Duly filled Annexure-A (Declaration for RESTRICTIONS UNDER RULE 144(XI))
- e) Annexure - B MII Declaration content format





BHEL IVP  
GOINDWAL SAHIB

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### S3 Bid Evaluation

Castings in the tender enquiry are to be used in Nuclear Power project. Procurement in the tender enquiry is to be done from NPCIL vetted BHEL approved foundries. Bids received from only BHEL approved foundries (as on date of Part I opening) shall be accepted.

Bidders who are registered with BHEL for supply of steel castings or who have successfully supplied steel castings to BHEL within last 5 years shall be considered as BHEL approved foundries for tender evaluation purpose.

Further, approval of foundry from NPCIL is required before price bid opening. In case the foundry is not approved by NPCIL, bidder shall be required to submit the requisite documents for further approval from NPCIL.

### S4 PRICE BASIS

- a) Rates shall be quoted on **FOR GOINDWAL basis. Comparison shall be made on landed rate to BHEL Goindwal for deciding L1 offer.** Evaluation shall be done line item wise as per the table given below:

S.No	Material Code	# Rate schedule / Material Description	Qty	Unit of Measure	Basic rate to be quoted
1.	G92110280000	CF3M- UPTO C500 CASTING (IGC)	3792.00	KG	Rs/Kg
2.	G92110080000	WCB/WCC- 4" & ABOVE, UPTO C500 CASTING	298.28	KG	Rs/Kg
3.	922063360000	COMP-FLANGE_SOW_3_C150_CF3M-M967	40	NO	Rs/ no
4.	922063370000	COMP-FLANGE_SOW_6_C150_CF3M-M968	40	NO	Rs/ no

- b) Rates shall be inclusive of pattern and development cost. The pattern cost shall be borne by the vendor.
- c) Unloading of material at Main Stores of BHEL shall be arranged by BHEL.
- d) Order of enquiry item sl. no. shall be maintained in the quotation.
- e) Quoted rates shall be firm till the receipt of all supplies.

### S5 LOADING

Evaluation shall be done line item wise as mentioned in clause S1 – [Table1] and 100% quantity against each line item shall be loaded to L1 bidder. 100% loading shall be done on the L1 bidder for all the quantity mentioned against each material group in clause S1 – [Table1]. Details of material codes and corresponding quantity against the respective group is mentioned as per [Table 2]. L1 bidder shall be required to develop the pattern, if required, against the respective material group. Bidder to confirm availability of pattern/willingness to develop pattern for all the material codes against the respective material group.

### S6 Preference to MII and MSE



BHEL IVP  
GOINDWAL SAHIB

## SPECIAL TERMS AND CONDITIONS

**Rate Contract tender enquiry no. 2324-083E dated 31.01.2024 Due date 12.02.2024**

**Tender Description:** Procurement of castings from NPCIL vetted BHEL approved foundries

Minimum local content for qualifying to be a local supplier shall be 20% (HSN Code – 7325). Both class I and class II suppliers are eligible to bid in tender enquiry. Further, MII purchase preference shall be given in the tender enquiry.

MSE purchase preference shall not be given in the tender enquiry.

### **S7 REVERSE AUCTION**

Reverse auction will be conducted in this tender enquiry.

### **S8 SUBMISSION OF SUPPLIER REGISTRATION FORM (SRF)**

Bidders, who are not currently on registered list of BHEL IVP Goindwal and BHEL Trichy, may submit their application for vendor registration through online system on [www.bhel.com](http://www.bhel.com) in IVP Goindwal material category 'GVCST'. Direct link for online supplier registration is <https://supplier.bhel.in/>. This application submission can be done separately/immediately without waiting for the tender opening and finalization.

### **S9 Bid Validity**

Bids shall be valid for a period of 90 days from the actual date of Part I opening.

### **S10 DELIVERY SCHEDULE**

Delivery shall be within 120 days from date of Purchase Order.

*In case of special requirements, BHEL may ask vendor/s to supply with lesser delivery schedule, which shall be mentioned in the purchase orders. In such cases, delivery extension may be given to vendor for equal load in other pending purchase orders.*

### **S11 TEST CERTIFICATE**

It is the responsibility of successful vendor to ensure that all the castings are supplied with IBR TC or MTC as applicable.

### **S12 PROCEDURE FOR CASTING WEIGHT ESTABLISHMENT**

Rate of any item shall be derived by multiplying established weight with rate per kg. Weights shall be established as per attached TDCs.

The established weights shall be applicable to all vendors. Weights of same patterns for different material grade castings shall be considered same. Weights shall be established again on revision of dimensions of component.

When a vendor is taking any item as a new development, if his weight is less than already established weight, this weight will be considered as new established weight and binding on all vendors. New established weight shall be applicable on the new supplier for all the supplies received subsequent to the receipt of sample castings. For other suppliers, new established weight shall be applicable on all



BHEL IVP  
GOINDWAL SAHIB

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the purchase orders released after fresh weight establishment. In case the weight of casting (new development) is more than already established weight, then already established weight shall be binding on the vendor. List of castings with already established weights is attached herewith.

For any new item, not established till date, the first verified weight by BHEL after complete dimensional verification and acceptance shall be declared as established weight (as per TDC). Payments shall be made on established weights only. Additional claim of any vendor due to his extra weight over and above the established weight shall not be entertained.

Random verification of castings with already established weights will be done at BHEL stores on receipt of casting lot and in case, any discrepancy is noted between established weight and actual casting weight, then applicable deduction will be done from vendor invoices. Further re-establishment of weights will be done.

If any modification of pattern is done at vendor's end after establishment of weight of castings, then it is vendor responsibility to inform BHEL and in such cases, re establishment of weights will be done.

### **S13 RADIOGRAPHY**

Consistent radiography quality is to be ensured and to be maintained uniformly in bulk supply with adequate process and method controls. Since the required castings are of radiographic quality, BHEL reserves the right to conduct radiographic testing of sample pieces at its own arrangement and derive conclusion of soundness of casting supplied against the said lot/heat based on the results of such testing.

- Standard requirement of radiography of castings shall be as applicable TDC.
- Any additional requirement shall be specifically called for in PO.
- BHEL intends to get delivery of castings along with radiographed sets as ordered. The claim of vendor for payment of supplies against any PO can be put on hold if the requisite no. of radiographed sets has not been delivered. BHEL shall reserve the right to select any sample from a lot offered and get it radiographed at vendor's works.

Vendor will be required to submit radiographic films and test reports. BHEL will review and evaluate radiography films and RT reports and reserves the discretion to do so at the premises of the vendor.

Radiography procedure shall be as per ASME B 16.34 and as mentioned in BHEL's TDCs. All the radiography films shall be dispatched to BHEL without delay either before the castings are being dispatched or along with the castings. Vendor shall undertake radiography on new development as per applicable TDC.

**RT charges:** Fixed RT charges @ Ir<sub>192</sub>: Rs 0.99 & Co<sub>60</sub>: Rs 1.50 per sq. cm shall be paid on actual verified film area.

### **S14 INSPECTION REQUIREMENTS FOR CASTINGS**

1. For RT as well as non-RT castings, the seller shall give advance notice of minimum 03 working days for inspection to the purchaser. Inspection will be carried out within 03 working days from the proposed date of inspection.



## SPECIAL TERMS AND CONDITIONS

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In case of time taken by BHEL is more than 07 working days, delivery extension on account of delay may be provided to seller for number of days beyond 07 working days for the delayed portion only.

2. All required tests (Physical properties, Chemical properties, Heat Treatment, NDE, Visual, Surface finish etc.) as called in referred material standard/BHEL/TDC/drawing etc shall be carried out by vendor at no extra cost. **BHEL may decide to inspect itself/arrange third party at vendors' works itself as and when necessary with prior intimation to the vendor.** No additional charges shall be claimed for such inspections. Third party inspection charges will be borne by BHEL.
3. Sample castings are to be identified by vendor in the delivery challan as "Sample" and the dimensional reports and RT reports are to be provided to BHEL along with supply. Also mention "Sample" on castings with white paint.
4. RT castings have to be mentioned "RT" on castings with white paint.
5. Material code as mentioned in PO is to be mentioned on all casting with paint.

### **S15 REPAIR OF CASTINGS**

- a) All castings shall be supplied free of defects like shrinkage, hot tears and process variable defects like sand inclusion, slag inclusion, gas entrapment etc. If any casting is found containing defects more than allowable limit, the same shall be upgraded at foundry itself before dispatch to BHEL with necessary documentation, enabling BHEL to make use of such castings immediately for production.
- b) If castings are found defective at different stages of manufacturing, the same shall be repaired at the defective area and the repaired castings shall be accepted after performing requisite NDT at vendor's cost. BHEL shall decide about the areas to be repaired in all such cases.
- c) Castings, that are found defective after receipt at BHEL, necessary repair of the castings will be carried out by BHEL and charges as per table given below shall be deducted from any of the running bills of the vendor.

Scope of Work	Carbon Steel (Rs/cc)	Stainless Steel (Rs/cc)
	S.No 2 of Clause S1 - [TABLE I]	S.No 1 , 3 & 4 of Clause S1 - [TABLE I]
Material removal by gouging, dressing by grinding, material deposit by carrying welding & then dressing by grinding of valve castings at BHEL premises with all BHEL resources	22.95	28.95
Material deposit by carrying out Welding of valve castings & then dressing by grinding at BHEL premises with all BHEL Resources	19.25	25.20
Material removal by grinding in case of excess casting at BHEL premises with all BHEL resources	9.45	9.55

- d) In case of rejection of casting after machining/ assembly/testing due to defects more than allowable limits or major variation in dimensions etc. then the entire cost incurred till that stage shall be deducted from any of the running bills of the vendor.

**These Special terms & conditions and GCC collectively are the part of tender terms and conditions. Any term in special terms and conditions will supersede the GCC.**



## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### TABLE OF CONTENTS

1. Instruction to Bidder .....	2
2. Scope of Supply .....	2
3. Price Basis.....	3
4. Performance Security (PS).....	3
5. Breach of contract, Remedies and Termination.....	4
6. Evaluation in Case of More Than One L-1 Bidder.....	4
7. Reverse Auction.....	4
8. Conflict of Interest among Bidders / Agents .....	5
9. Validity of Offers.....	5
10. Supplied Material Adjustment.....	5
11. Delivery Schedule.....	6
12. Liquidated Damaged (LD).....	6
13. Acceptance of Material Supplied.....	6
14. Payment Terms .....	7
15. Taxes & Duties .....	7
16. Liability Under Reverse Charge (RCM).....	8
17. Access to Manufacturing Premises.....	8
18. Inspection.....	8
19. Warrantee and Corresponding Repair / Replacement of Goods.....	9
20. LOI (Letter of Intent).....	10
21. Sub-Contract .....	10
22. Discrepancy in Words and Figures .....	10
23. Force Majeure .....	10
24. Non-Disclosure Agreement .....	11
25. Clarifications.....	11
26. Preferences for Micro and Small Enterprises (MSEs).....	11
27. Preference to Make in India.....	12
28. Restrictions Under Rule 144(XI) of The General Financial Rules (GFR), 2017 .....	12
29. Resolution of Disputes.....	14
30. Fraud Prevention Policy.....	15
31. Preventive Checks to Eliminate Suspected Cartel Formation .....	15
32. Suspension of Business Dealings with Suppliers / Contractors .....	16
33. General.....	16
Annexure-X.....	19
Appendix-I of Annexure-X.....	25
Appendix-II of Annexure-X .....	26
Appendix-III of Annexure-X .....	27

Signature Not Verified

Signed By: AMAN SHARMA

Location: BHEL Goindwal

Signing Date: 04.12.2023





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 1. Instruction to Bidder

Quotations shall be submitted before due date and time. Late offers are liable to be rejected, so please ensure to submit bid well within due date and time. Techno-commercial part will be opened on due date.

**Based on evaluation of techno-commercial offers, Price bids of bidders who qualify from techno-commercial evaluation shall be opened. BHEL may decide to open the Price bid same day at 1700 hrs. If not opened on the same day, all qualifying bidders shall be notified for date of opening of Price bids by email/fax/post/courier/E-procurement system generated email.**

#### 1.1 Instruction to Bidder (In case of Non-E-Procurement / Paper/ Manual/ Hard Copy based tenders)

Sealed Tenders can be dropped in the tender box labeled as 'Tender box for MM contracts.' This tender box is located at the entrance of Admin block BHEL Goindwal. Quotations can also be submitted through e-mail at **tendermm\_ivp@bhel.in**. Offers received in time shall be considered only when offers are complete in all respects. In case of bulky tenders, please handover quotation to tender issuing authority [Contact: 01859 224 615 / 628]. Bid can be sent to following address:

**BHEL, Industrial Valve Plant,  
#433, Industrial Complex,  
Goindwal Sahib, Distt. Tarn Taran,  
Punjab-143422.**

#### 1.2 Instruction to bidder (In case of E-Procurement)

1. Interested bidders / suppliers shall submit their offer through e-procurement mode at <https://eprocurebhel.co.in/>.
2. **Offers in any other mode will not be accepted.**
3. Procedure for submission of tender is available in the "Bidder Manual Kit" at e-tender portal <https://eprocurebhel.co.in/>.
4. In case of any difficulty faced while registering on BHEL's e-Procurement portal developed by NIC, queries may be addressed to 0120-4001002, 0120-4001005 and 0120-6277787; email: [support-eproc@nic.in](mailto:support-eproc@nic.in). These details are also available on 'Contact Us' page of the portal.
5. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
6. **Disclaimer clause:** Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

### 2. Scope of Supply

Material shall be supplied as per the applicable latest Technical Delivery Conditions (TDC)/ Material Standard requirements/BPS/Drawing and other requirement as given in the Tender Enquiry. National & International material Standards shall have to be arranged by vendors themselves. Latest applicable revisions of standards/procedures to be referred.

Signature Not Verified

Signed By: AMAN SHARMA

Location: BHEL Goindwal

Signing Date: 04.12.2023







## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

All required tests as called in referred material standard/BHEL/TDC/drawing etc. shall be carried out by vendor at no extra cost. Material Test Certificates (MTC), inspection reports and Compliance/Guarantee Certificate are to be provided along with the supplies.

### 3. Price Basis

1. Order of enquiry item sl. no. shall be maintained in the quotation.
2. The rates quoted shall be firm and fixed. No price variation is proposed and allowed.
3. Rates quoted should be FOR BHEL Goindwal basis. The offers quoted on other than FOR Goindwal basis are liable to be rejected.

In case bidder has quoted Ex-works prices, then he/she will be given an opportunity to accept price basis as FOR Goindwal either by accepting delivery as FOR Goindwal in same quoted price or by providing loading factor on his/her quoted ex-works prices to make them FOR prices.

**Variation in GST or any other statutory levies during contractual delivery period shall be to BHEL's account.**

### 4. Performance Security (PS)

Applicability:

- 1) Performance Security will not be applicable in which total PO value on vendor in one tender enquiry is less than or equal to Rupees one lakh.
- 2) **In case total PO value on vendor in one tender enquiry is greater than Rs. 1 Lakh:**  
Successful bidder (L1 or counter-offer accepted) has to submit Performance Security (PS) @5% of PO value within 21 days from the date of award of PO. PS shall be valid for a period of one year. This PS will be released to the vendor without interest after two months beyond the completion of all supplies under the PO.  
Before the release of this PS, vendor has to submit another PS @1% of PO value or Rs. 3000.00 whichever is higher after two months beyond the completion of all supplies under the PO. This PS shall be valid for a period of 18 months. This additional PS will be released to the vendor without interest after expiry of validity upon fulfilment of contractual obligations as per terms of contract.

Vendor has to submit written request to BHEL for refund of PS well in advance before the due date.

In case of non-submission of PS for 5% of contract value, it will amount to breach of contract.

#### Mode of deposit:

Performance security may be furnished in the following forms:

- 1) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- 2) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- 3) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).

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Signing Date: 04.12.2023







## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- 4) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/hypothecated/ pledged, as applicable, in favour of BHEL).
- 5) Insurance Surety Bond.
- 6) By way of retention from dues available in the form of Bills payable to the supplier against same / other contracts in the same unit.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).

### **Forfeiture of Performance Security:**

The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.

### **5. Breach of contract, Remedies and Termination**

In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case the value of the security instruments available is less than 10% of the contract value, the balance amount be recovered in all or any of the following manners:

- from dues available in the form of Bills payable to defaulted supplier against the same contract.
- from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit.
- In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

### **6. Evaluation in Case of More Than One L-1 Bidder**

In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from the respective L1 bidders.

In case more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by a toss / draw of lots, in the presence of the respective L1 bidder(s) or their representative(s).

Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

### **7. Reverse Auction**

In case, it is declared in special terms & conditions of tender enquiry that RA is applicable for the NIT, then RA will be conducted as per following clause:

BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on <https://www.bhel.com/>) for this tender. RA shall be conducted among the techno-commercially qualified bidders as per RA guidelines.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered.

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## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

### 8. Conflict of Interest among Bidders / Agents

A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. ***The bidder found to have a conflict of interest shall be disqualified.*** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

- a) they have controlling partner (s) in common; **or**
- b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; **or**
- c) they have the same legal representative/agent for purposes of this bid; **or**
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; **or**
- e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid. **or**
- f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following:
  1. The principal manufacturer directly or through one Indian agent on his behalf; and
  2. Indian/foreign agent on behalf of only one principal.**or**
- g) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; **or**
- h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.

### 9. Validity of Offers

The offers shall be kept open for acceptance 'for number of days mentioned in special terms and conditions' from the date of opening of the tender. In case of tender extension, the bid validity shall be considered from the date of tender opening.

### 10. Supplied Material Adjustment

Item/s pending in previous PO has to be billed in previous PO only. Otherwise, BHEL will be free to adjust the supplies in previous PO. Any implication of tax will be on supplier's account. For this it is desirable that vendor should reconcile the pending PO statement every month/frequently with BHEL. Vendor can also view these details at Portal (<https://trichy.bhel.com/mm/index.jsp>).

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## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

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Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 11. Delivery Schedule

Supplies shall be affected and completed as per schedule mentioned in special terms and conditions. Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.

### 12. Liquidated Damaged (LD)

- Time is the essence of the contract.
- The ordered items shall be delivered as per the delivery period mentioned in the Purchase Order.
- In case the supplier supplies the ordered items beyond the delivery period specified, Liquidated Damages -LD - as detailed below shall be levied from the supplier without prejudice to any other relief /compensation available to BHEL, Punjab under any other condition of the contract/applicable legal provisions.
- Failure to dispatch the materials in the time as per the delivery mentioned in our Purchase Order (PO) would make the supplier liable to an un-conditional LD at the rate of 0.5% of the undelivered order value per week of the delay or part thereof subject to a maximum of 10% of the undelivered order value.
- Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).
- Indigenous: In case of Ex-works delivery terms, the document date (Invoice/Challan date) in Goods Receipt (GR) document shall be reckoned for LD deduction. In case of FOR Delivery terms, the posting date in GR document shall be reckoned for LD deduction.
- Import: For CFR terms, BL date will be considered for LD calculation.

BHEL reserves the right to receive or not receive the material after the due date of PO. Applicable GST shall also be recovered from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

### 13. Acceptance of Material Supplied

- The supply shall strictly as per the specifications in the tender /purchase order.
- Delivery of the ordered items as per the delivery terms in the Purchase Order does not automatically constitute acceptance of the delivered items.
- Acceptance of the materials supplied will be based on the inspection and certification documents by the supplier as stipulated in the Purchase order. However, BHEL reserves the right to test the material supplied, if required, at BHEL Lab or any other approved/accredited lab and the result will be binding on the supplier.
- The acceptance or otherwise of the delivered items will be separately communicated to the supplier by BHEL through B2B portal within 15 days from the delivery of items or delivery of the required test certificates /other documents whichever is later.
- In case of rejection of the delivered items, either part or full, the vendor shall replace the rejected items as per the specification in the Purchase order/tender at their cost within 30 days of communication of rejection to the supplier. The supplier shall be given maximum two opportunities to replace the rejected items.
- After the clearance of the 1st lot, in case of rejection of the delivered items, either part or full, if the supplier fails to replace the rejected items within 30 days of communication of the rejection, the same shall be treated as failure to execute the contract and actions as per the Guidelines for

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## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

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Suspension of Business Dealings with Suppliers /Contractors available in the webpage:  
<https://www.bhel.com> would be taken against such supplier.

### 14. Payment Terms

1. Payments shall be made to the Seller within the mentioned days (as per below table) from the date of receipt and acceptance of material.

Type of Bidder	Payment Terms (Number of days)
Micro & Small Enterprises (MSEs)	45 days
Medium Enterprises	60 days
Non MSME	90 days

To be considered as Micro, Small or Medium enterprise, bidder must be manufacturer of offer product and relevant valid certificate as per latest MSME guidelines is to be submitted along with bid.

**MSME bidders can avail benefits of payment through TReDS (Trade Receivable e Discounting System).**

In case of any deviation from standard payment term mentioned above, BHEL shall load on the item price at 'Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening) + 6% for the period of relaxation sought by bidders.

2. Documents to be submitted (if applicable)
  - i) Tax invoice (Invoice shall be GST compliant and should contains all the required information such as GST No, HSN code etc.)
  - ii) Transporter copy along with material/consignment.
  - iii) Material Test Certificates (MTC) and
  - iv) Compliance Certificate.
3. GST registration number is to be submitted by qualified vendor as per GST law.
4. It is mandatory to mention proper material codes in the invoices and separate invoices to be raised for different POs.
5. **BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.**

### 15. Taxes & Duties

Payment of GST portion will be released to vendor only upon completion of statutory requirement and further subject to following:

- a) Vendor declaring such invoice in his GSTR-1 and
- b) Receipt of goods and Tax invoice by BHEL and
- c) Confirmation of payment of GST thereon by vendor on GSTN portal.
- d) Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

Following may please be noted for availing Input Tax Credit (ITC) by BHEL:

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Signing Date: 04.12.2023





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

1. Since ITC can be availed only when BHEL is in possession of GST Tax invoice and after receipt of goods. Thus, vendor to ensure timely dispatch of goods and Tax invoice. It may be noted that in case of any delay in receipt of Tax Invoice and/or receipt of goods, the ITC availment by BHEL will get delayed thus entailing additional cash outflow & may even get denied if ITC availment timelines are breached.
2. Further ITC can be availed only when vendor has declared such invoice in his outward supply Return GSTR-1 and after GST thereon has been paid by him at the time of filing of monthly Return.
3. If GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from vendor along with interest levied/leviable on BHEL.
4. Further, in case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/leviable on BHEL.

### 16. Liability Under Reverse Charge (RCM)

Any GST liability arising on BHEL under Reverse Charge (RCM) before actual receipt of goods and/or Invoice thereof would be subject to recovery of Interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of Invoices and other conditions specified in GST Law as applicable.

### 17. Access to Manufacturing Premises

While Purchase Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also be extended to representatives of BHEL's customers accompanying the authorized representative/s of BHEL (which shall be intimated in advance), if our contractual requirements with our customers call for the same.

### 18. Inspection

1. The seller shall give adequate notice, of 1 week or as mutually agreed period, in writing to the Purchaser about the date and place at which the goods will be ready for inspection/ testing, as provided for in the contract.
2. Purchaser or his authorized representative shall be entitled to carry out inspection of material and workmanship/Surveillance Audit at Seller's premises or at his sub-contractor's premises at all reasonable times during execution of contract; Such inspection, examination and testing, if made, shall not absolve the Seller from his obligations under the contract. No additional charges shall be claimed for such inspections. Moreover, all required infrastructure (testing, tools etc) have to be arranged by supplier.
3. Any inspection carried out before supply by vendor/incoming stage at BHEL notwithstanding, if any defect/non-conformity is noted during processing, the same shall be attended/replaced by vendor at no extra cost.
4. BHEL representative from unit or CQ is authorized to carry out audits along with TPIA at vendor's works before clearing the items for dispatch.

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## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

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Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

5. Necessary tooling including thread gauges etc. have to be arranged by vendor. Only in exceptional cases, based on BHEL discretions item/nature, BHEL may consider request to provide gauges if available with BHEL. But in no case this shall be linked with delivery of material.
6. In case of following points, visit charges to be paid to Third Party Inspection Agency (TPIA) shall be imposed as penalty on Supplier:
  - a) Nothing/NIL material is offered during Inspection (whilst physical visit of Inspection Engineer at Supplier's work) with respect to "Offered Quantity" mentioned in raised Inspection Call.
  - b) Lapses on the account of supplier has led to rejection of offered material (as per approved QAP/ Technical Specifications/ Other pertinent requirement), while carrying out Inspection.
  - c) Less Quantity/ Short Quantity is offered during Inspection (whilst physical visit of Inspection Engineer at Supplier's work) with respect to "Offered Quantity" mentioned in raised Inspection Call for any of the line(s) item, leading to re-visit of Inspection Engineer.

### 19. Warrantee and Corresponding Repair / Replacement of Goods

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, vendor shall give a warrantee against design & manufacturing defects for a period of 18 months from the date of receipt. In case of non-acceptance of this term, bid shall be liable for rejection.

If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation. Corresponding quantity shall be treated as unsupplied against respective purchase order till replacement is received at BHEL. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including repair / replenish rejected goods, at the cost of the seller as per contractual obligations.

All incidental charges like freight, insurance and customs duty in respect of return of defective items are to vendor's account only. BHEL will inform related invoice, quantity etc. to supplier. Supplier has to give advance intimation / plan (Transporter, Vehicle details) for the lifting of material. Further supplier has to provide requisite documents (such as Credit Note, e-Way Bill etc.) to lift the rejected material. Material should be lifted within one month from date of intimation. After one-month, BHEL will not be responsible for rejected material and BHEL shall have the right to dispose off such rejected material.

The defective parts and components shall be collected by your Indian agent or / authorized person, only after completing the replacement / repairs. If the supplier fails to replace / rectify the defective/ damaged items on free of cost within one month of reporting from our end, the same shall be treated as failure to execute the contract and actions as per the Guidelines for Suspension of Business Dealings with Suppliers /Contractors available in the webpage: <https://www.bhel.com> would be taken against such supplier without prejudice to the other remedies available to BHEL under the contract and law in this regard.

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**BHARAT HEAVY ELECTRICALS LIMITED**

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Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 20. LOI (Letter of Intent)

BHEL may issue LOI prior to the PO for any reason whatsoever. The LOI in such cases is to be treated as PO for all practical purposes and all the Terms & Conditions of the tender shall be applicable from the date of issue of LOI.

### 21. Sub-Contract

The purchase order or any part thereof shall not be sub-contracted, assigned or otherwise transferred without previously obtaining the BHEL's consent in writing.

### 22. Discrepancy in Words and Figures

1. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity}, the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
2. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
3. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
4. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
5. Bids should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else shall be liable for rejection.
6. All overwriting/cutting, etc will be numbered by bid opening officials and announced during bid opening.

### 23. Force Majeure

1. Notwithstanding the provisions contained in other clauses, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure. For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, freight embargoes and Acts of GOD.
2. If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue

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**BHARAT HEAVY ELECTRICALS LIMITED**

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Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
3. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.
  4. In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

### 24. Non-Disclosure Agreement

All Drawing and technical documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. ***BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.***

### 25. Clarifications

The correspondence exchanged against the tender from both tenderer and BHEL through email/e-procurement are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business. Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.

### 26. Preferences for Micro and Small Enterprises (MSEs)

Preferences as mentioned in “Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012” & “Public Procurement Policy for Micro and Small Enterprises (MSEs) Amendment Order, 2018”, or as per latest guidelines issued by government shall be given to Micro and Small enterprises.

Main points which are mentioned in the above orders are as follows:

- 25% Procurement of the tender value shall be made from MSE (Micro, Small Enterprises) firms.
- 25% of the 25% quantity (i.e. 6.25% of the tender quantity) offered to the MSE's shall be reserved for MSE's owned by SC/STs. Failure to participate by any MSE owned by SC/ST's; this 6.25% quantity shall be procured from other MSEs.

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## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- 3% from within the 25% quantity offered to the MSE's shall be reserved for women owned MSE's. Failure to participate by any MSE owned by women; this 3% quantity shall be procured from other MSEs.
- EMD shall be exempted for MSE's. All these benefits are subject to production of all statutory documents
- In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 25 per cent of total tendered value. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity).

MSE suppliers can avail the intended benefits only if they submit **Udyam Registration Certificate** along with the offer. No other document shall be considered for availing MSE benefits. Non-submission of such document will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is not cleared before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required document is to be uploaded on the portal.

*Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail.*

## 27. Preference to Make in India

This procurement shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 16.09.2020 of Government of India issued by DPIIT and subsequent circulars issued afterwards. Accordingly, the minimum local content, the margin of purchase preference and the procedure for purchase preference to make in India shall be adhered.

## 28. Restrictions Under Rule 144(XI) of The General Financial Rules (GFR), 2017

Restrictions on procurement from a bidder of a country which shares a land border with India

- I. a) Any bidder from a country which shares a land border with India will be eligible to bid in this tender, whether of goods or services (including consultancy services and non-consultancy services), only if the bidder is registered with the Competent Authority.  
b) Further, any bidder (including an Indian bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be eligible to bid in any procurement whether of goods or services (including consultancy services and non-consultancy services) only if the bidder is registered with the Competent Authority. *This clause shall be applicable only in the tenders which attract restrictions due to specified ToT.*
- II. "Bidder" (Seller / Service Provider) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

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## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

III. "Bidder (or entity) from a country which shares a land border with India" for the purpose of the Order means:

- a) An entity incorporated, established, or registered in such a country; or
- b) A subsidiary of an entity incorporated, established, or registered in such a country; or
- c) An entity substantially controlled through entities incorporated, established, or registered in such a country; or
- d) An entity whose beneficial owner is situated in such a country; or
- e) An Indian (or other) agent of such an entity; or
- f) A natural person who is a citizen of such a country; or
- g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

IV. The beneficial owner for the purpose of (iv) above will be as under

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation—

- a) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
  - b) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
  3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
  4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

VI. The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.

VII. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

VIII. "Transfer of Technology" means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently.

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Signed By: AMAN SHARMA  
Location: BHEL Goindwal  
Signing Date: 04.12.2023





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

Any false declaration and non-compliance of the above would be a ground for debarment and further legal action in accordance with law.

### **Bidder has to submit a certificate certifying following along with offer:**

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be Attached]."

### **29. Resolution of Disputes**

The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the contract/tender which the Parties are unable to settle mutually), arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Annexure-X to this GCC.

The Annexure-X together with its appendices will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, then, either Party may, by a notice in writing to other Party, refer such dispute or difference to sole arbitration of an arbitrator appointed as per the Arbitration and Conciliation Act, 1996 (India) or statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force.

The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the parties.

This contract shall be governed, construed and interpreted in accordance with the laws of India.

Signature Not Verified  
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Subject as aforesaid, the provisions of Arbitration & Conciliation Act 1996 (India) or statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

The seat of arbitration shall be Tarn Taran, Punjab, India.

The cost of arbitration shall be borne as per the award of the Arbitrator.

Subject to arbitration in terms of clause above, the Courts at Tarn Taran, Punjab, India shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.

Notwithstanding the existence or any dispute or difference and/or reference for the arbitration, the vendor/contractor shall proceed with and continue without hindrance the performance of its obligation under this Contract with due diligence and expedition in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

**In Case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:**

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/Port Trusts inter se and also between CPSEs and Government Departments/Organizations (Excluding disputes concerning Railways, Income Tax, Customs & Excise Departments, such dispute or difference shall be taken up by either party for its resolution through AMRCD as mentioned in DPE OM No.05/003/2019-FTS-10937 dated 14<sup>th</sup> December, 2022 and the decision of AMRCD on the said dispute will be binding on both the parties.”

Set off : BHEL shall have the right to recover any money which in the sole opinion of BHEL is due from the supplier from any money due to the supplier under this Contract or any other contract or from the Security Deposit/BG furnished by the supplier under this Contract or any other contract.

### **30. Fraud Prevention Policy**

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

### **31. Preventive Checks to Eliminate Suspected Cartel Formation**

The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

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## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

### 32. Suspension of Business Dealings with Suppliers / Contractors

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL web site <https://www.bhel.com/>.

### INTEGRITY COMMITMENT, PERFORMANCE OF THE CONTRACT AND PUNITIVE ACTION THEREOF:

#### 31.1. Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

#### 31.2. Commitment by Bidder/ Supplier/ Contractor:

31.2.1. The bidder/ supplier/ contractor commits to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

31.2.2. The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

31.2.3. The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on <https://www.bhel.com/> and/or under applicable legal provisions

### 33. General

1. BHEL will not be bound by any power of attorney granted by the vendors or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however,

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Signed By: AMAN SHARMA

Location: BHEL Goindwal

Signing Date: 04.12.2023







## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the vendor concerned.
2. BHEL reserves the right to extend the due date of opening, which shall be informed. Validity of offer shall be deemed to be revised accordingly.
  3. BHEL reserves the right to accept or reject any part or whole of the tender of a bidder by assigning a valid reason thereof. BHEL reserves the right to cancel the tender without assigning any reason thereof and without any obligation before any commitment.
  4. Acceptance of all terms and conditions, in the form of signed copy of T&C or confirmation separately written, shall be submitted along with quotation. If nothing is mentioned, it shall be concluded that these terms and conditions are acceptable.
  5. BHEL may increase/decrease item/s based on BHEL requirement before price bid opening. Suitable price implication may be asked from suppliers.
  6. BHEL may drop item/items from tender at any stage of tender before placing PO. BHEL may also delete PO with consent with supplier within delivery date of PO.
  7. After releasing PO, it is assumed that supplier has accepted PO if we do not receive acknowledgement from supplier within 5 days of date of PO.
  8. In case of unscheduled holiday on opening day of tender, the next working day will be treated as scheduled prescribed day of opening of tender.
  9. On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL with in the final cut-off date, those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders.
  10. Ranking L-1, L-2 etc. shall be done for individual item for the techno-commercially acceptable offers on landed cost to BHEL, IVP Goindwal basis and BHEL reserves the right to place order for individual items with different vendors.
  11. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price; BHEL reserves the right to increase or decrease the tender quantity.
  12. If supplier is mentioning delivery destination within state/ outside state depending upon his location of factory, Free on Road etc. these are assumed as on FOR Goindwal. If supplier is wishing to give delivery on Ex works basis, then he has to clearly mention about it.
  13. The bidder has to keep track of any changes by viewing the addendum(s) / Corrigendum(s) issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
  14. Unregistered suppliers, who are techno-commercially qualified against the open tender, are requested to register with BHEL as permanent supplier by submitting the Supplier Registration Form (SRF) in online supplier registration portal (<https://supplier.bhel.in/>).
  15. The General Conditions of Contract and the Special Conditions in each enquiry and the resulting purchase order constitute the entire contract between the parties. In case of any discrepancy between the provisions of General Conditions of Contract and Special Conditions of the Tender,

Signature Not Verified

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Location: BHEL Goindwal

Signing Date: 04.12.2023







## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

the provisions in Special Conditions of the Tender shall prevail and interpretation of BHEL of such condition/clause will be final and binding on both the parties ..





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-X

#### **BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS**

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.
7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case, within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case, within 1 month from the date of conclusion of the last hearing.
8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with

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## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
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Punjab-143422 (INDIA)

request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.

10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.
14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.

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18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.
21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.
22. The proceedings of Conciliation under this Scheme may be terminated as follows:
- On the date of signing of the Settlement agreement by the Parties; or,
  - By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
  - By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
  - By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
  - On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
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23. The Conciliator(s) shall be entitled to following fees and facilities:

Sr. No.	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.
2	Towards drafting of settlement agreement	<p>In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator)</p> <p>In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores. Rs. 75,000 (per Conciliator)</p> <p>In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator)</p> <p>Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.</p>
3	Secretarial expenses	<p>Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC.</p> <p>Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC</p>
4	Travel and transportation and stay at outstation	As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	i Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)	
	Others	As per the extant entitlement of whole time Functional Directors in BHEL.

Signature Not Verified

Signed By: AMAN SHARMA

Location: BHEL Goindwal

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5	Venue for meeting	Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.
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24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.

25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.

26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.

27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.

28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.

29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.

30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:

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Signed By: AMAN SHARMA  
Location: BHEL Goindwal  
Signing Date: 04.12.2023





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
- b. admissions made by the other party in the course of the Conciliator proceedings;
- c. proposals made by the Conciliator;
- d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.

31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.

32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.

33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.

34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.







## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
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Punjab-143422 (INDIA)

### Appendix-I of Annexure-X

#### **FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC**

To,

M/s. (Stakeholder's name)

**Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).**

Ref: Contract No/MoU/Agreement/LOI/LOA& date \_\_\_\_\_.

Sir,

With reference to above referred Contract/MoU/Agreement/LOI/LOA, you have raised certain Disputes/claims. Vide your letter dated\_\_\_\_ you have requested BHEL to refer the Disputes/claims to IEC for Conciliation.


We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

**Representative of BHEL**



	<b>General Conditions of Contract (GCC) of MM Tenders</b> <b>BHARAT HEAVY ELECTRICALS LIMITED</b> Industrial Valve Plant: 433, Industrial Complex, Goindwal Sahib, Dist. Tarn Taran, Punjab-143422 (INDIA)
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**Appendix-II of Annexure-X**

**FORMAT FOR GIVING CONSENT BY  
CONTRACTOR/VENDOR/CUSTOMER/COLLABORATOR/CONSORTIUM PARTNERS FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC**

To,

BHEL

.....

**Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).**

Ref: Contract/MoU/Agreement/LOI/LOA No

& date \_\_\_\_

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

SL. no.	Claim Description	Bill submitted to BHEL (no. and date)	Amount of the bill/claim	Amount received from BHEL	Outstanding Amount

Accordingly, we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

(Signature with stamp)

**Authorized Representative of Contractor  
Name, with designation Date**



**Appendix-III of Annexure-X**

**STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE  
IEC BY BOTH THE PARTIES**

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Claim(s)/Counter Claim(s):

Sl. No.	Description of claim(s)/Counter Claim	Amount (in INR) Or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

**Note**– The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.



<b>PART-I (TECHNO-COMMERCIAL BID)</b> <b>(To be filled &amp; signed by bidder &amp; submit with offer as 'PDF' file only)</b>			
<b>Tender enquiry no. &amp; date</b>		2324-083E dated 31.01.2024	
<b>Tender description</b>		Procurement of castings from NPCIL vetted BHEL approved foundries	
Bidder must note following points: 1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder. 2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet. 3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection. 4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. Bidders are adviced to upload duly filled & signed 'PDF' file as techno-commercial (Part-I) bid'. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation. 5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.			
<b>BIDDER's DETAILS</b>			
Sl. no.	Elements	Remarks	
1	Bidder's Name / Name of the Firm		
2	Quotation reference no. & date		
3	Contact Person Name / Number / Designation	Name: Contact No: Designation:	
4	Email ID (s) - (Can be provided more than one)		
5	Mobile No. (s)		
6	Tel. No. (s)		
7	Fax No.		
8	Registered Address		
9	Address for Correspondence		
10	Bidder Type (Indian / Foreign):		
11	Company's Establishment Year		
12	Company's Nature of Business (Tick the relevant option √)	<input type="checkbox"/> Manufacturer <input type="checkbox"/> Dealer/ Trader/ Stockist/Channel Partner/Agent/etc.	
13	Company Category (Micro unit as per MSME / Small unit as per		
14	Status of the Company / Firm * (Relevant documents must be enclosed) (Tick the relevant option √)	<input type="checkbox"/> Public Limited; <input type="checkbox"/> Private Limited <input type="checkbox"/> Partnership Firm; <input type="checkbox"/> Single Ownership	
15	Name of Owner / Partner's of Firm		
16	GST No.		
<b>TECHNICAL CONDITION DETAIL</b>			
Sl no.	Elements	Response	Remarks
1	Technical : Supply of valve castings as per tender documents (if selected 'Accepted with deviation', please mention the deviation clearly)	Select from drop down list	
<b>COMMERCIAL CONDITIONS &amp; DETAILS</b>			
Sl no.	Elements	Response	Remarks (if any)

<b>PART-I (TECHNO-COMMERCIAL BID)</b> <b>(To be filled &amp; signed by bidder &amp; submit with offer as 'PDF' file only)</b>			
Tender enquiry no. & date		2324-083E dated 31.01.2024	
Tender description		Procurement of castings from NPCIL vetted BHEL approved foundries	
1	IGST supply (%)	Select from drop down list	
2	SGST supply (%)	Select from drop down list	
3	CGST supply (%)	Select from drop down list	
4	<p><b>Procurement of castings from NPCIL vetted BHEL approved foundries:</b> Castings in the tender enquiry are to be used in Nuclear Power project. Procurement in the tender enquiry is to be done from NPCIL vetted BHEL approved foundries. Bids received from only BHEL approved foundries (as on date of Part I opening) shall be accepted.</p> <p>Bidders who are registered with BHEL for supply of steel castings or who have successfully supplied steel castings to BHEL within last 5 years (as on date of Part I opening) shall be considered as BHEL approved foundries for tender evaluation purpose.</p> <p>Further, approval of foundry from NPCIL is required before price bid opening. In case the foundry is not approved by NPCIL, bidder shall be required to submit the requisite documents for further approval from NPCIL.</p>	Select from drop down list	
5	<p><b>Delivery destination:</b> FOR, BHEL, Stores Industrial Valves Plant 433, Industrial Complex Goindwal Sahib- 143 422 District: Tarn Taran (Punjab), India (refer tender terms &amp; conditions for details)</p>	Select from drop down list	
6	<b>Firm Price:</b> Quoted rates shall be firm till the receipt of all supplies.	Select from drop down list	
7	<b>Validity:</b> Submitted bids shall be valid for 90 days from the actual date techno commercial bid opening(Part I). (Refer tender terms & conditions for details)	Select from drop down list	
8	<b>Delivery period:</b> Within 120 days from date of of PO. (refer tender terms & conditions for detail)	Select from drop down list	
9	<b>Conflict of Interest among Bidders / Agents</b> (Refer clause no. 8 of General Contract conditions (GCC))	Select from drop down list	
10	<b>LD clause:</b> Penalty for late delivery will be applicable @ 0.5% per week or part thereof subject to a maximum of 10.0 %. (Refer tender terms & conditions for details)	Select from drop down list	
11	<b>Warranty Period:</b> Supplier shall give a warrantee for a period of 18 months from the date of receipt. In case of non-acceptance of this term bid will be rejected. (Refer clause no. 19 of GCC)	Select from drop down list	

<b>PART-I (TECHNO-COMMERCIAL BID)</b> <b>(To be filled &amp; signed by bidder &amp; submit with offer as 'PDF' file only)</b>			
Tender enquiry no. & date		2324-083E dated 31.01.2024	
Tender description		Procurement of castings from NPCIL vetted BHEL approved foundries	
12	Please accept <b>Performance security</b> term as per clause of 4 of GCC.		Select from drop down list
13	Please accept <b>Breach of Contract and Termination</b> term as per clause of 5 of GCC.		Select from drop down list
14	Please attach valid MSE certificate latest MSME Guidelines (Refer clause no. 26 of GCC)		Select from drop down list
15	Payment terms: [Refer clause no. 14 of GCC]		Select from drop down list
16	Please submit <b>Certificate regarding Restrictions Under Rule 144(XI) of The GFR, 2017 (Annexure-A)</b> as per clause no. 28 of GCC.		Select from drop down list
17	<b>Make in India (MII)</b> (Refer clause no. 27 of GCC)	Local Content Declaration	Select from drop down list
		Details of location at which local value addition will be made is as follows:	Select from drop down list
		Please submit <b>III Declaration content format (Annexure-B)</b>	Select from drop down list
18	You are manufacturer of quoted item/s.		Select from drop down list
19	Bidder should be manufacturer for Carbon Steel Castings/Alloy Steel Castings / Stainless Steel Castings. Bidder to upload undertaking / ISO certificate/documentary evidence for being manufacturer. Bids received from traders, dealers, distributors and resellers will be rejected. (refer Pre-qualification terms of tender)		Select from drop down list



<b>PART-I (TECHNO-COMMERCIAL BID)</b> <b>(To be filled &amp; signed by bidder &amp; submit with offer as 'PDF' file only)</b>			
Tender enquiry no. & date		2324-083E dated 31.01.2024	
Tender description		Procurement of castings from NPCIL vetted BHEL approved foundries	
20	<p>Bidder shall submit “Well Known Foundry” recognition certificate which shall be valid as on date of tender opening and bidder has to submit undertaking that they shall renew it from time to time. Well-known foundries, which have applied for renewal on the date of tender opening, shall submit the expired “Well Known Foundry” certificate and documentary evidence/undertaking for renewal of the same. However, in case the supplier is not having “Well Known Foundry” certificate, then he can supply castings after inspection from IBR approved inspection authorities for IBR items. Foundries which are not recognized as “Well Known Foundry” should have experience of supplying Boiler Quality Castings under Indian Boiler Regulations 1950 and shall have to submit purchase order and corresponding proof of Witness pouring by IBR approved inspecting authorities. Date of such purchase order shall be on or after 01.01.2021. (refer Pre-qualification terms of tender)</p>	Select from drop down list	
21	<p>Bidder should have experience of supplying Radiography Tested (RT) castings and shall have to submit purchase order and corresponding proof of RT reports. Date of such purchase order shall be on or after 01.01.2021. (refer Pre-qualification terms of tender)</p>	Select from drop down list	
22	<p>Bidder should have successfully manufactured and supplied steel castings. Bidder shall submit customer Purchase Orders and their invoices for supply of Carbon Steel Castings/Alloy Steel Castings /Stainless Steel Castings with minimum cumulative value of ₹ 10,00,000 (Rs. Ten Lakhs only) as proof. For MSEs, the required cumulative value of POs and invoices shall be ₹ 5,00,000.00 (Rs. Five lakhs only). Date of Purchase Order/s date &amp; corresponding invoices should be 01.01.2021 or afterwards and upto the date of actual bid opening. All mentioned values are net of taxes. (refer Pre-qualification terms of tender in detail)</p> <p>In case the bidder submits purchase orders for the machined castings, 80% of the PO value (net of taxes) shall be considered for evaluation against the above pre-qualification criteria. Purchase orders submitted by bidders for supply of raw steel castings/ machined steel castings shall only be considered.</p>	Select from drop down list	
23	<p>I have thoroughly gone through the attached tender terms &amp; conditions and understood the above techno-commercial requirements</p>	Select from drop down list	
24	<p>Rates quoted are net of taxes &amp; FOR Goindwal Sahib basis</p>	Select from drop down list	

<b>PART-I (TECHNO-COMMERCIAL BID)</b> <b>(To be filled &amp; signed by bidder &amp; submit with offer as 'PDF' file only)</b>			
Tender enquiry no. & date		2324-083E dated 31.01.2024	
Tender description		Procurement of castings from NPCIL vetted BHEL approved foundries	
25	If there is any deviation in reference to any of the tender term, kindly mention it <b>HERE</b> only. <b>Deviation specified elsewhere, will not be considered.</b>	Select from drop down list	
<b>CONFIRMATION FOR AVAILABILITY OF PATTERN / WILLINGNESS TO DEVELOP PATTERN FOR ALL THE MATERIAL CODES AGAINST THE RESPECTIVE MATERIAL GROUP {Details of material codes and corresponding quantity against the respective group is mentioned in Clause S1 of Special terms &amp; conditions}</b>			
Sl. no.	# Rate schedule / Material Description	Qty	Unit of Measure
1	CF3M- UPTO C500 CASTING (IGC)	3792.00	Kg
2	WCB/WCC- 4" & ABOVE, UPTO C500 CASTING	298.28	Kg
3	COMP-FLANGE_SOW_3_C150_CF3M-M967	40	No
4	COMP-FLANGE_SOW_6_C150_CF3M-M968	40	No
<p>We further, confirm that we have quoted the rates in the tender considering Inter-alia the</p> <ol style="list-style-type: none"> <li>1. Tender Document(s)</li> <li>2. Additional Document(s) (if any)</li> <li>3. BOQ Document (Price Bid Format)</li> <li>4. Corrigendum (if any)</li> <li>5. Pre Bid Meeting Minutes (if any)</li> </ol> <p>We hereby certify that we have fully read and thoroughly understood the tender requirements and accept all terms and conditions of the tender including all corrigendum/addendum issued (if any). Our offer is in confirmation to all the terms and conditions of the tender including all corrigendum/addendum (if any) and minutes of the pre-bid meeting (if any). In the event our offer is found acceptable and Order is placed /Contract is awarded to us, the complete tender document shall be considered for constitution of Order / Contract Agreement.</p>			
Authorised signatory with seal			

Validate

Print

Help

Item Wise BoQ

Tender Inviting Authority: BHEL IVP Goindwal Sahib

Name of Work: Procurement of castings from NPCIL vetted BHEL approved foundries

Contract No: 2324-083E dated 31.01.2024

Name of the Bidder/ Bidding Firm / Company :

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only )

NUMBER #	TEXT #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Item Code / Make	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs.	TOTAL AMOUNT excluding taxes in Rs.	TOTAL AMOUNT In Words
1	2	3	4	5	7	11	13
1	CF3M- UPTO C500 CASTING (IGC)	G92110280000	3792.00	KG		0.00	INR Zero Only
2	WCB/WCC- 4" & ABOVE, UPTO C500 CASTING	G92110080000	298.28	KG		0.00	INR Zero Only
3	COMP-FLANGE_SOW_3_C150_CF3M-M967	922063360000	40.00	Number		0.00	INR Zero Only
4	COMP-FLANGE_SOW_6_C150_CF3M-M968	922063370000	40.00	Number		0.00	INR Zero Only

## **ANNEXURE-A**

### **RESTRICTIONS UNDER RULE 144(XI) OF THE GENERAL FINANCIAL RULES (GFRs), 2017**

**(The bidders are required to print this on their company's letterhead &  
sign, stamp and submit with offer documents)**

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that bidder (.... Name of Bidder) is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that bidder (.....Name of bidder) fulfils all requirements in this regard and is eligible to be considered.

If the bidder is from such country which shares a land border with India evidence of valid registration by the Competent Authority shall also be attached along with offer.”

With regards

Signature with company seal

Name –

Company / Organization

Designation within Company / Organization

Address of Company / Organization

**Make in India (MII) and Local Content Declaration**

To whom it may concern

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017, as amended from time to time and as applicable on the date of submission of tender, we hereby certify that we M/s.\_\_\_\_\_ (supplier name) are (tick whichever is applicable as below)

**“Class-I local supplier”** meeting the requirement of minimum local content equal to 50% or more defined in above mentioned government notification for the goods & services

(or)

**“Class-II local supplier”** meeting the requirement of minimum local content 20 % to less than 50% defined in above mentioned government notification for the goods & services

(or)

**Non-local supplier** (if not belonging to Class-I & Class-II)

against Tender Enquiry No.

Product: **procurement of castings from NPCIL vetted BHEL approved foundries**

Details of location at which local value addition will be made is as follows:

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We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rule for which for which a bidder or its successors can be debarred for up two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Authorized Signatory

Place:

Date:



**Product: Steel Castings for Boilers & Valves**

**Revisions record:**

Rev. 21 – 1) CI 8 – requirements of test bar added. 2) CI 7 Table 1 – SV, SRV and QC NRV RT quantum for body casting modified. 3) Isolating valve, product name modified. 4) CI 8 a) clarity on need for re qualification of castings added. 5) CI 12 modified to include drawing details, 6) CI 13.4 A – clarity to submit IBR certificate and MTC added.  
Rev. 22- Dt: 26/06/2014 1) CI 7.0 Table 1 –RT area of QCNRV body revised. 2) CI.8.0 a) Modified. 3) Sketch of Zones of RT –RT zones of SV and SRV base castings modified based on Engineering review.  
Rev. 23 Dt: 06/10/2015: CI. 2, 4, 5, 6, 7, 8, 13, 15 modified to incorporate API 6D 24<sup>th</sup> Edition requirements.  
Rev 24 Dt: 23/12/2015: CI 1, 2, 3,5, 6, 7, 8, 9, 10, 13, 14 & 15 modified.  
Rev: 25 Dt: 11/02/2017: CI 1 changed to indicate the use of latest revisions of referred codes, standards, specifications, drawings, procedures, etc; Requirements of API 6D removed from CI 2, 4, 5, 7, 13 & 15 since the API 6D certificate license was not applied for; Definitions for relevant, linear and rounded indications provided in CI 7; CI 2 to 10, 12, 13 & 15 revised to bring better clarity; Type 3.2 certification updated as per BS EN 10204-2004 in CI 13.2.  
Rev: 26 : Dt: 21/02/2018 - SA/ASTM A 995 Gr 4A (CD3MN) added in CI 1 & 5 based on Engineering/Valves input; Creep testing requirements removed and referred to SIP:RM:01.  
Rev: 27 : Dt: 01/04/2022 - CA15 added in CI 1; CI.5a updated;Table 2: Spring loaded Bypass Valves & Knife Edge Gate Valve –NDE requirements added;CI 7.2 modified to include NDE requirements for machined casting; CI.13.3 added for Machined castings; CI.13.4 added for Certification of Product Attest Items; CI.13.5 added for Certification of Certified Items; CI.15- updated; Shooting Sketch added for Spring Loaded Bypass Valves.  
*Rev.28: Dt.01/12/2022 – CI.1 updated;Table 1- Impact testing requirements for SRV for SCR application added*

**1. MATERIAL SPECIFICATIONS:**

**All the codes, standards, specifications, drawings & procedures, etc., referred in this TDC shall be of latest revision as on the date of Enquiry/Purchase Order, whichever is earlier, unless specified otherwise.**

Carbon Steel (CS) : SA / ASTM A216 WCB, WCC & 352 LCB, LCC  
Alloy Steel (AS) : SA / ASTM A217 WC6, WC9, C12A  
Martensitic Stainless Steel (MSS): SA / ASTM A217 CA15  
Austenitic Stainless Steel (ASS) : SA / ASTM A351 CF3M, CF8, CF8C & CF8M;  
Duplex Stainless Steel (DSS) : Duplex SA / ASTM 995 Gr. 4A(CD3MN)  
Additional Requirement : As listed below (Supplementary to above material specifications)  
Size, Quantity, Grade/Class : As per Purchase Order & Drawing / Pattern.

**2. CHEMICAL COMPOSITION AND PROCESS:**

- a) Melting: As per the Specification, Fully Killed.  
Carbon= 0.25% maximum: for SA / ASTM A216 WCB only.  
Carbon= 0.15% maximum: for SA / ASTM A217 WC6 & WC9 (For the castings used in QCNRV, CRHNRV, TOA Valves & Conventional valves having contours for welding).

Product Analysis on test bar for each melt including residual elements shall be carried out.

- b) All raw materials used in steel making including incoming scrap shall be checked by supplier to ensure freedom from radioactivity. (Applicable for SS material only)  
c) Tolerance for chemistry shall be as per the above applicable material specifications/standards specified in CI 1.

**3. DIMENSIONS AND TOLERANCES:**

Dimensions & their tolerances shall be as per applicable drawings. For untoleranced dimensions: VL: STDC: 023.

**4. HEAT TREATMENT (HT):**


CS – Castings of High Pressure Valve. (CI.900, CI.1500 & above), QCNRV & CRHNRV: Shall be in Annealed Condition.

AS – Castings: Normalized and Tempered.

Normalizing Temperature: SA/ASTM A217 WC6, WC9: 920-950°C and for C12A: 1050-1080°C.

Tempering Temperature: SA/ASTM A217 WC6: 680°C min.; WC9: 720°C min.; C12A: 750-780°C.



	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412</b> Rev: <b>28</b> Effective Date: <b>01/12/2022</b> Page: <b>2 of 12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

All other materials: Heat treatment shall be as per the applicable material specification & grade.

## 5. MECHANICAL TESTS:

- a) Test bars to be cast integral with the casting or separately. If cast separately, they shall be cast at the same time as the castings and from the same ladle. A metal strip with heat number stamped shall be fused with the test bar during casting, to maintain traceability.


If one (1) casting is made from more than one heat, separate test bars for each cast to be poured and all test bars shall satisfy the requirements. Tests mentioned in Table 1 shall be conducted per heat *per* Heat treatment batch, as per ASTM A370.

Perform tensile tests at room temperature in accordance with the procedures specified in ASTM A370. Perform a minimum of one tensile test. All yield strengths shall be determined using 0.2 % offset method of ASTM A370. The results of the tensile test(s) shall satisfy the applicable material specification requirements. Hardness testing shall be as per ASTM E10 or E18.

If the results of the tensile test(s) do not satisfy the applicable requirements, two additional tests on two additional test specimens (removed from the same TC with no additional heat treatment) may be performed in an effort to qualify the material. The results of each of these tests shall satisfy the applicable requirements.

Table 1.

No	TEST	MATERIAL SPECIFICATIONS			
		SA/ASTM A216, 217	SA/ASTM A352	SA/ASTM A351	SA/ASTM A995
1	Tension Test	As per the Material Specification			
2	Hardness Test	As per the Specification	225 HBW max.	Not applicable	Not Applicable
3	Bend Test Specimen 1" x ¾"		Not applicable	S3 of SA703	Not applicable
		Bend Angle			
		WC6			
		WC9			
		C12A			
4	Charpy- U Impact for all QCNRV, CRHNRV bodies for IBR.	As per IBR. At Room temperature. Acceptance: Avg /Single=36J/32J min.	Not applicable	Not applicable	Not applicable
5	Charpy- V Impact for CE Marking- Pressure Equipment Directive (PED) items as Specified in the Purchase Order.	At 20 Deg.C temperature. Acceptance: Avg/Single=40J/27J min.	As per Specification	Not applicable	Not applicable
6	Charpy- V Impact for LPBP bodies	At 20 Deg.C temperature. Acceptance: Avg/Single=27J/21J min.	Not applicable	Not applicable	Not applicable
7	Charpy- V Impact for SRV Base, Bonnet (SCR application)	At "-33 Deg. C" temperature. Acceptance: Average of three specimens shall be 20J min; minimum impact energy for one specimen shall not be less than 2/3 of the average energy required for three specimens	Not applicable	Not applicable	Not applicable

	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412</b> Rev: <b>28</b> Effective Date: <b>01/12/2022</b> Page: <b>3 of 12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

- b) **Creep testing** & reporting shall be carried out as per SIP:RM:01 (latest revision) whenever indicated in the Enquiry/Purchase Order/Engineering Drawing.

## 6. FETTLING, DRESSING & CLEANING:

- Dressing of castings-Free from risers, in gates, notches, undercuts, deep marks etc.
- Fused wires, parting line fins, chills etc. shall be removed by grinding.
- Gas cutting if employed shall be done before Heat treatment.
- Preheat the material to 200°C before gas cutting the Alloy steels.
- Castings shall be blast cleaned both inside and outside for the removal of fused sand, scales etc.
- Visual inspection: 100% as per MSS-SP:55. Acceptance: Type 1: none accepted; Type 2-12: A & B only accepted.

## 7. NON DESTRUCTIVE TESTING (NDT) AFTER HEAT TREATMENT

The NDE requirements for the castings shall meet the following as shown in Table-2 below. Castings shall be free from surface and internal defects like porosity, shrinkage, sand inclusion, crack, cold shut and other harmful defects. All castings shall be of Radiographic Quality.

1. Radiographic Testing Procedure (RT) : As per ASME B16.34
2. Magnetic Particle Inspection (MPI) : As per ASTM E709
3. Liquid Penetrant Inspection (LPI) : As per ASTM E165

**Table: 2**

Product	Components	Characteristics	Type of NDE Check						
			RT	RT Area	RT Acc. Std	MT \$	MT Area		
Conventional Valves (Gate, Globe & Check)	Body, Bonnet Pr.part yoke, Cover,	< 600 Class	10%#	ASME B 16.34 / On critical area as indicated in the Drawing.	As per Table: 3	--	--		
	Body, Bonnet, Cover	600 Class & above	100%			--			
	Body, Bonnet, Cover	1500 Class & above	100%			100%	All accessible surfaces including belly.		
	Wedge	All Special Class Valves	--			--		--	100%
Knife Edge Gate Valve	Body	All	LPI shall be performed in all machined surfaces						
Spring Loaded Bypass Valves	Body, Bonnet, Cap	All	100%	Area shown in the sketch (Annexure-1). The areas where RT cannot be carried out MPI shall be done.	As per Table: 3	100%	All accessible surfaces including belly.		
Safety Valve	Base	Flanged ends of All Castings	100%	Critical Zones as given in the Drawing/ area shown in the sketch (Annexure-1). The areas where RT cannot be carried out MPI shall be done.	Class 2 of ASTM E446 / E186. For Butt weld ends as per Table- 3	100%	All accessible surfaces		
		Weld ends of All Castings	100%			--	--		
Safety Relief Valve	Base	All	100%			All area	Class-2 of ASTM E446 / E186.	--	--
	Bonnet		10%#						
	SRV Nozzle	All	100%						
QC NRV, CRH NRV	Body	150 & 300 Class	100%	Butt Weld Ends	As per Table: 3	100%	All accessible surfaces including belly.		
		600 Class & above	100%	Critical Zones as given in the	As per Table: 3	100%			



**Product: Steel Castings for Boilers & Valves**

	Body (Special)	All		Drawing/ area shown in the sketch (Annexure-1).The areas where RT cannot be carried out MPI shall be done.			
Soot Blower Valve	Body	All	10%#	Critical Zones as given in the Drawing/ area shown in the sketch (Annexure-1).The areas where RT cannot be carried out MPI shall be done.	As per Table: 3	--	--
Isolating Valve/ device	Body	< 600 Class	100%	Critical Zones as given in the Drawing/ area shown in the sketch Annexure-1).The areas where RT cannot be carried out MPI shall be done.	As per Table: 3	--	All accessible surfaces including belly.
		600 Class & above				--	
		1500 Class & above				100%	
LP Bypass Valve	Body	All	100%	Critical Zones as given in the Drawing/ area shown in the sketch Annexure-1).The areas where RT cannot be carried out MPI shall be done.	As per Table: 3	--	--

\$ LPI can be substituted for MPI in all inaccessible area and for stainless steel castings # Refer CI 7.1


**Table: 3**

Type Of Discontinuity	Acceptance Level Category	< 600 CLASS		≥ 600 CLASS	
		Thickness ≤2"	Thickness >2"	Thickness ≤2"	Thickness >2"
Gas Porosity	A	A2	A3	A1	A2
Sand/Slag inclusion	B	B3	B3	B2	B2
Shrink Type-1	C	CA2	CA3	CA1	CA2
Shrink Type-2	C	CB3	CB3	CB2	CB2
Shrink Type-3	C	CC3	CC3	CC2	CC2
Crack	D	NONE	NONE	NONE	NONE
Hot Tear	E	NONE	NONE	NONE	NONE
Un-fused Inserts (Chills/Chaplets)	F	NONE	NONE	NONE	NONE

a. Butt welding ends shall be free of shrinkage, crack & hot tear.  
b. For butt weld ends Gas hole/Porosity and sand inclusions to be within level A1 & B1 respectively

**NDE for SS material:** Castings shall be checked for radioactive contamination and reported. Survey meter shall be used to measure near the surface. Acceptance limits: Shall be less than 0.1 milli Rontgen (MR) per hour or 1 micro Sievert per hour.

7.1 # 10% Sampling shall be done as follows: (Wherever specified): The vendor shall select 10% of the Casting from the lot consisting of same size and type, (along with melt number / Sl.nos of the castings covered in the lot) for Radiography. A lot to be specified as the total number of castings as above, supplied in 4 months

	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412 Rev: 28</b> Effective Date: <b>01/12/2022</b> Page: <b>5 of 12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

period (Jan-Apr, May-Aug, Sep-Dec). The vendor shall radiograph these specified castings and incorporate the lot size and melt no and SI.no in the RT reports along with the other SI.nos of the other castings covered in the lot. If the identified casting is defective then 2 more castings shall be radiographed. If these 2 castings are defect free then the lot is acceptable. If any one of these castings is defective then all the remaining castings shall be radiographed and all defective areas shall be repaired. BHEL will carry out audit on the lots at the vendor works at any time.

## 7.2 a) Raw Casting: Valve Body (Conventional Valves & Spring Loaded Bypass Valves):

**Surface NDE (MPI & LPI):-** Testing as per ASME B16.34.

- Relevant indication: Surface-rupture NDE indication with major dimensions > 1.6 mm (1/16 in).**
- Linear indication: Surface NDE indication whose length is  $\geq$  three times its width.**
- Rounded indication: Surface NDE indication whose length is < three times its width.**

**Acceptance for MPI & LPI:** As per TOA ST-E 0006 & ST-E-0005

- Cracks are not permitted.
- For linear indications other than cracks, indications must be separated by a distance greater than the length of an acceptable indication. Maximum allowable length of the indication shall be:
  - 1.6 mm for thickness upto 16.0 mm
  - 3.1 mm for thickness over 16.0 mm and below 50.8 mm
  - 4.7 mm for thickness over 50.8 mm
- For rounded indications, 4 or more indications in a line separated by 1.5 mm or less edge to edge are unacceptable. Maximum allowable diameter of the indication shall be:
  - 3.1 mm for thickness less than 16.0 mm
  - 4.7 mm for thickness 16.0 mm and above
  - Four or more indications in a straight line, and the distance between adjacent indications is 1.6mm and less edge to edge
  - More than ten indications in the area 38.7 cm<sup>2</sup> selected so as to include as many as possible. However, the longest side of the area should be less than 152.4mm

## b) Raw Casting: Components other than Valve Body (Conventional Valves & Spring Loaded Bypass Valves):

**Surface NDE (MPI & LPI):-** Testing and acceptance as per ASME B16.34


- Relevant indication: Surface-rupture NDE indication with major dimensions > 1.6 mm (1/16 in).**
- Linear indication: Surface NDE indication whose length is  $\geq$  three times its width.**
- Rounded indication: Surface NDE indication whose length is < three times its width.**
- Acceptance for MPI & LPI:**
- Cracks are not permitted.
- For linear indications other than cracks, indications must be separated by a distance greater than the length of an acceptable indication. Maximum allowable length of the indication shall be:
  - For thickness (t) up to 13mm = 8mm,
  - For thickness from 13 to 25mm = 13mm
  - For thickness above 25mm = 18mm.
- For rounded indications, 4 or more indications in a line separated by 1.5 mm or less edge to edge are unacceptable. Maximum allowable diameter of the indication shall be:
  - For thickness up to 13mm = 8mm
  - For thickness above 13mm = 13mm

## c) Machined Casting: Valve Body (Conventional Valves & Spring Loaded Bypass Valves):

**Surface NDE (LPI):** Testing as per ASME B16.34 on all accessible machined area

**Acceptance for LPI:** As per TOA ST-E-0005. Following relevant indications are unacceptable.

- Butt Weld ends**
  - Rounded indications of dia > 1.5 mm.
  - Linear indications of length > 0.5 mm.

	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412</b> Rev: <b>28</b> Effective Date: <b>01/12/2022</b> Page: <b>6</b> of <b>12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

- c) Four or more indications in a line separated by 1.5 mm or less edge to edge.
- d) Ten or more acceptable indications in an area of 38.7 cm<sup>2</sup> with one side not exceeding 152.4 mm.

## 2. Self-Sealing Bore Area

- a) Any Linear indication
- b) Rounded indications of dia > 1.5 mm.
- c) Ten or more acceptable indications in an area of 38.7 cm<sup>2</sup> with one side exceeding 25 mm.

## d) Machined Casting: Knife Edge Gate Valve Body:

**Surface NDE ( LPI):** Testing as per ASME B16.34 on all accessible machined area

**Acceptance for LPI:** As per TOA ST-E-0005. Following relevant indications are unacceptable.

- a) Rounded indications of dia > 1.5 mm.
- b) Linear indications of length > 0.5 mm.
- e) RT Films shall be reviewed and RT reports shall be verified by BHEL approved TPI. MPI for Special bodies shall be witnessed by BHEL approved TPI

## 8. DEVELOPMENT STAGE OF CASTING:


- a) During developmental stage, of new castings or change to an existing casting on account of change in dimension which warrants pattern correction, Foundry to ensure, first sample pieces meet dimensional, NDE & Quality requirements in this TDC, before starting bulk production. Sample castings, 3 castings with nominal bore (NB) ≤ 100mm. & 1 casting with NB > 100 mm for each type shall be inspected for dimension and RT requirements at BHEL/Vendor works by BHEL personnel. One Test bar for each melt/heat treatment batch shall be supplied along with casting for test at BHEL. RT shall be carried out on entire area of the casting to the acceptance requirement of Table-2 & 3. In addition 100% MPI on all critical areas like change of sections, riser & in gate portions shall be carried out. Casting to be inspected for dimensions after proof machining wherever necessary. If machining operation is involved the same shall be done and defect free condition shall be ensured. If any defect noticed in RT and machining, the type of defect shall be analyzed and accordingly size of gate, runner, riser and pouring methodology to be modified to get defect free casting. Sampling shall be continued till achieving sound casting. After satisfactory development of sampling bulk production shall be started. However weld repaired areas identified in visual examination for doubtful indications to be probed by MPI. Accepted sample castings may be considered for fixing the nominal weight of the castings.
- b) During developmental stage RT on sample castings of Yoke, Yoke Clamp & Wedge/Disc shall meet Level-3 of ASTM E446/E186/E280.
- c) Radiography not required after satisfactory development of casting & production based on established method for following parts: SRV Bonnet, Disc Holder, Upper and Lower adjusting rings, Packed cap, Cover Plate, Yoke and SRV guide flanges.

## 9. REPAIR:

Castings with unacceptable cracks, hot tears, shrinkage, etc. to be rectified by grinding & if required by welding. Welding to be done by qualified welder and qualified procedure as per ASME Section IX. For IBR items welders shall be qualified as per IBR.

Guidelines for repair of steel castings shall be as per SIP:VS:17 for activities like defects require/ not require weld repair, welding, Post Weld Heat Treatment, NDE and surface treatment. All repaired areas after PWHT shall be NDE tested and Hardness tested. Hardness shall meet material specification.

For PED (CE-Marking) castings, permanent joining (welding and weld repair) of components must be carried out by suitably qualified personnel according to suitable operating procedures. Also Non-Destructive tests of permanent joints must be carried out by suitable qualified personnel.

	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412</b> Rev: <b>28</b> Effective Date: <b>01/12/2022</b> Page: <b>7 of 12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

The procedures and personnel must be approved by a competent third party which at the manufacturer's discretion, may be - A notified body, - A third party organization recognized by a Member State of European Community.

## 10. SURFACE TREATMENT:

SS castings to be pickled & passivated (after repair & HT if any) as per ASTM A380. Satisfactory passivity of the surface to be checked using SS passivity test kit (Free iron test). After passivation, rinsing & test, the rinsed demineralised water to be checked for chloride with 1% Silver nitride, which shall not exceed 0.5 PPM.

## 11. DIMENSIONAL CHECK:

For all QCNRV & CRHNRV Body Castings: Thickness of the body shall be checked throughout the surface on a grid of 100mm x 100mm and recorded & submitted to BHEL.

## 12. MARKING AND PACKING:

Representation of Marking and identification shall be as per drawing. Also following details to be marked on each casting, on a raised pad using low stress stamps and Castings shall be suitably packed to avoid damage during transit.

1. Foundry code, 2. **Material** specification, grade & **Heat**/melt number, 3. Size and 4. Class rating.

## 13. INSPECTION AND CERTIFICATION:

### 13.1 For Attested Items (As per Engg material code/Drawing): For IBR items.

Products shall be inspected at works and the applicable IBR Form must be countersigned by the Inspecting Authority as indicated below in case the shop/mill/foundry is not recognised as a "Well known Foundry" under IBR:

- ☐ **Imported Items:** Inspecting Authority approved by IBR, for the Country of origin.
- ☐ **Indigenously Supplied items:** Director of Boilers/Chief Inspector of Boilers/Inspecting Authority approved by IBR, for the respective state.


Certification in IBR Form III-F for IBR items from "IBR-Well Known Foundry" or "Inspecting Authority", as applicable, to be submitted. IBR Form III-F & a separate Test certificate of type 3.1 or 3.2 as per BS EN 10204 in English language with following details, shall accompany the product:

1. Purchase Order No. (BHEL), TDC No & its revision no, Test certificate no & date.
2. **Material** Specification, Grade & **Class** with applicable year of code, Heat Number, Quantity & Size
3. Steel making process, Chemistry including incidental elements - Heat wise, Product analysis, Carbon Equivalent (CE).
4. Heat treatment details of the material and test bars.
5. Mechanical test results-Tensile (UTS, YTS (**0.2% offset**), % elongation, % reduction in area), Impact & Hardness and NDE test results with reference & acceptance standard.
6. Repair details including HT, if any, Cleaning & Surface treatment details.
7. Any other information like clearance of sample casting.
8. Dimensional Inspection Report, where applicable.
9. **For SS:** Measured Radioactivity levels at 5cm from the surface of the castings shall be reported in the Test Certificate stating the measured value at the specified distance (not to be recorded in IBR Form).
10. **Creep test report as per the format suggested in Cl 5 of this TDC (applicable only for IBR application).**

13.2 For PED 2014/68/EU (CE-marking), test certificates of type 3.1 or 3.2, with details specified in Cl 13.1 for separate test certificate, shall be submitted as per BS EN 10204.

- ☐ Type 3.1 – Suppliers shall have ISO 9001:2015 certification certified by Notified Body recognized by European community and test certificate certified by suppliers authorized inspection representative.
- ☐ Type 3.2 – Components inspected and test certificates certified by both the supplier's authorized inspection representative and Notified Body recognized by European community.



	<b>BHEL – Tiruchirappalli - 620014, India.</b> <b>Quality Assurance Department</b> <b>TECHNICAL DELIVERY CONDITIONS</b>	DOC No: <b>TDC:0:412</b> Rev: <b>28</b> Effective Date: <b>01/12/2022</b> Page: <b>8</b> of <b>12</b>
<b>Product: Steel Castings for Boilers &amp; Valves</b>		

**13.3 Machined Casting:** In addition to Cl.13.1 (or) Cl.13.2 , as applicable, the following test reports shall be furnished,

1. Dimensional Report
2. LPI Report Signed by NDE Level II qualified Personnel

**13.4 For Product Attested Items (as per Engg material code/Drawing):**

All tests specified have to be carried out by foundry and test results to be furnished in the test certificate of type 3.1 or 3.2 as per BS EN 10204 and shall contain the following information in English language only:

1. Purchase Order No. (BHEL), TDC No & its revision no, Test certificate no & date.
2. Material Specification, Grade & Class with applicable year of code, Heat Number, Quantity & Size
3. Steel making process, Chemistry including incidental elements - Heat wise, Product analysis, Carbon Equivalent (CE).
4. Heat treatment details of the material and test bars.
5. Mechanical test results-Tensile (UTS, YTS (0.2% offset), % elongation, % reduction in area), Impact & Hardness and NDE test results with reference & acceptance standard.
6. Repair details including HT, if any, Cleaning & Surface treatment details.
7. Any other information like clearance of sample casting.
8. Dimensional Inspection Report, where applicable.
9. For SS: Measured Radioactivity levels at 5cm from the surface of the castings shall be reported in the Test Certificate stating the measured value at the specified distance.

**13.5 For Certified Items (as per Engg material code/Drawing):**

In addition to Cl.8 requirements, all tests specified in the material specification have to be carried out by foundry and test results to be furnished in the test certificate of type 3.1 as per BS EN 10204 and information in English language only

**14. AUDIT CHECKS AT BHEL:**

BHEL reserves the right to carry out audit checks for chemistry, HT condition, mechanical test and NDT on representative test bars or job. Items found defective during check or subsequent processing at BHEL will be rejected.

**15. END USE:**

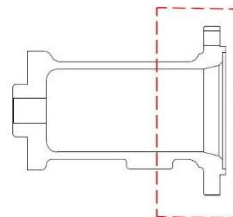
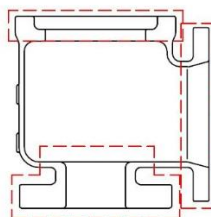
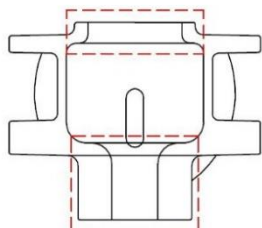
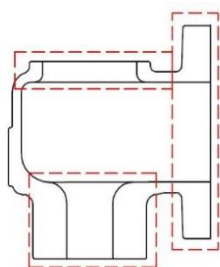
For use in valves and other components like flanges, fittings etc. for high temperature & high pressure applications meeting IBR, ASME Section I, ASME VIII Div 1, ASME B16.34 and PED 2014/68/EU (CE-marking).

**Annexure-1:Sketch of zones for RT**

**SV and SRV Base castings**

**Base**

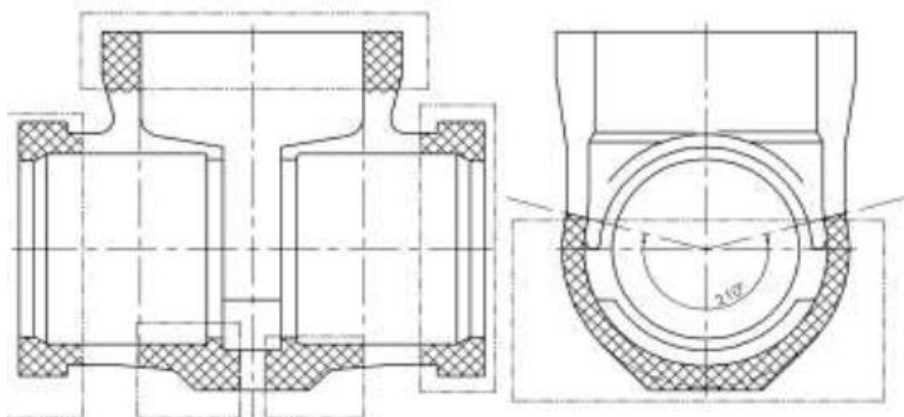
**Bonnet**





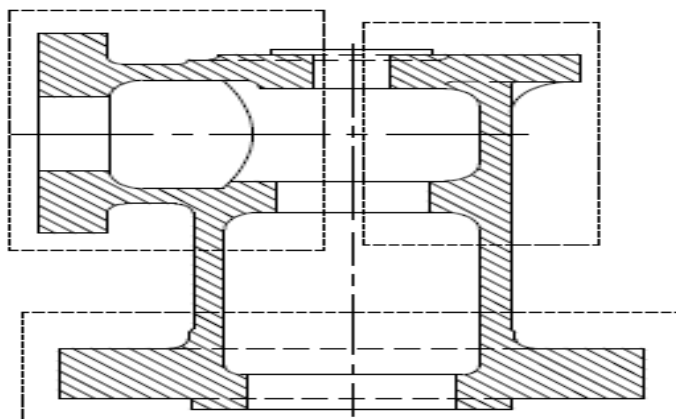
Product: Steel Castings for Boilers & Valves

**Reheater Isolating Device Body**




 Radiography Area

**Soot Blower Valve Body**

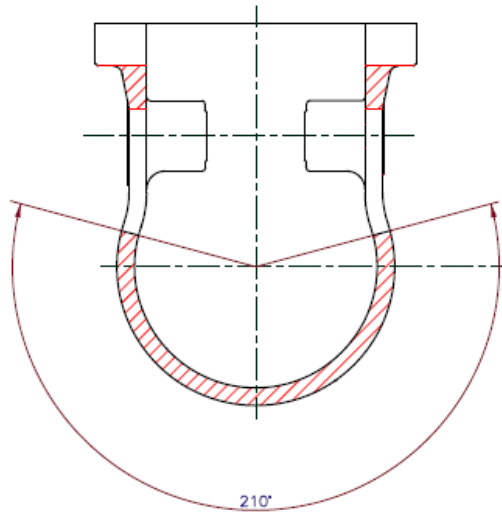


PART CODES : 920243870000, 920131810000, 920243870100, 920131810100

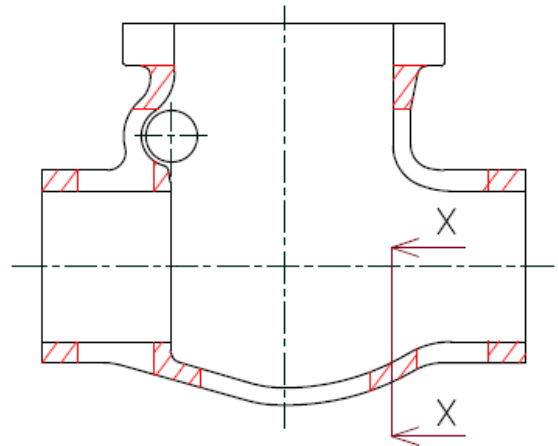
LRD IE, LRD IIE & WB IE - 2.5" 600#

 — RADIOGRAPHY AREA

**Quick Closing Non Return Valve Body**

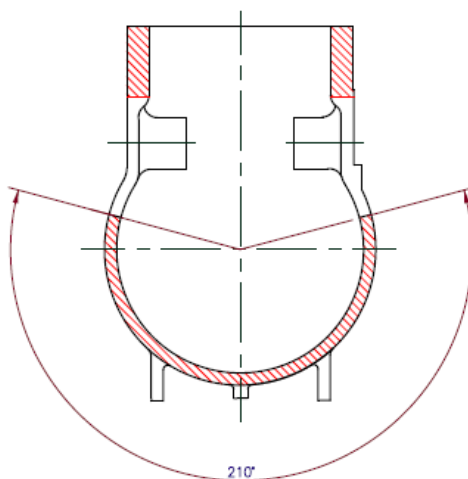


SECTION – XX

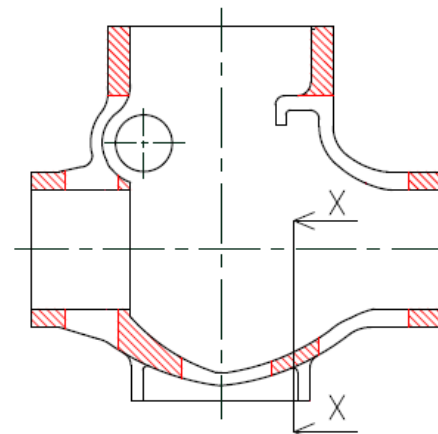


RADIOGRAPHY REQUIREMENT

**Cold Reheat Non Return Valve Body**



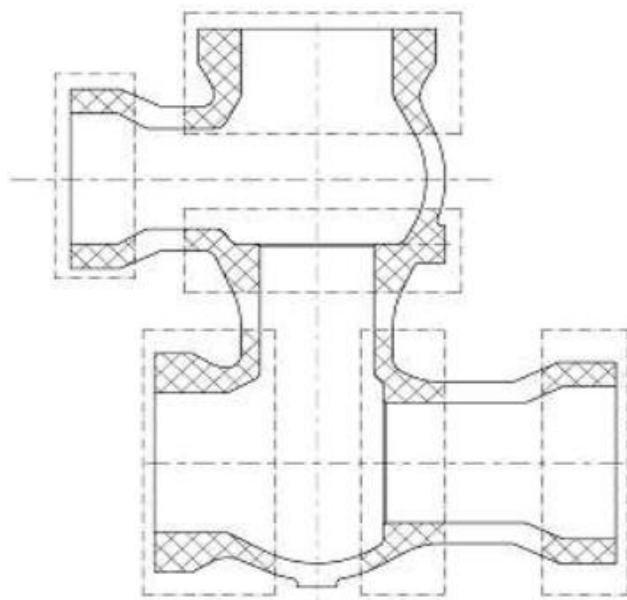
SECTION – AA



RADIOGRAPHY REQUIREMENT



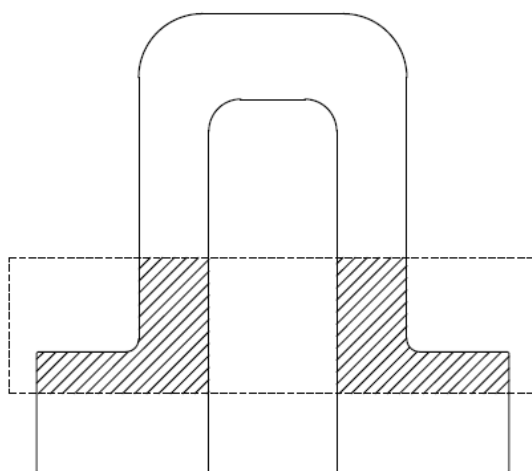
**LP Bypass Stop cum Control Valve Body**



 Radiography Area

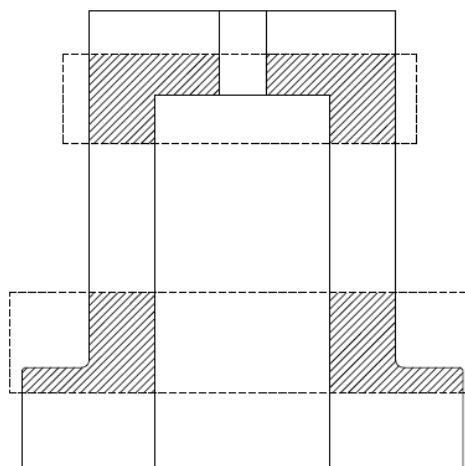
**Spring Loaded Bypass Valve**

**Cap**



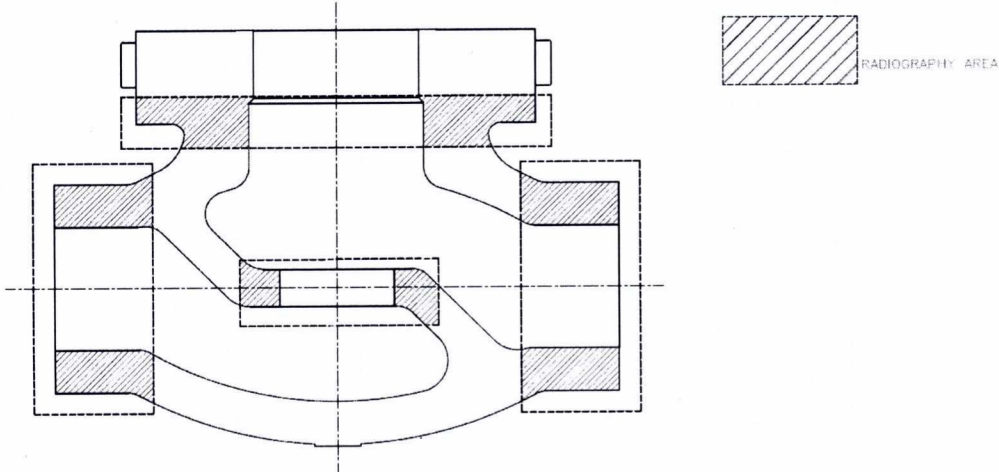
**Body**

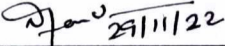
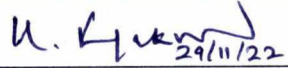
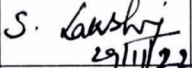


**Bonnet**





Product: Steel Castings for Boilers & Valves



 29/11/22	 29/11/22	 29/11/22	 29/11/22	 01/12/2022
N Nagamuthu Pandian	K Jeyakumar	S. Lakshmi	Ajay Kumar Gupta	J.V.V. Aruna Kumar
Manager/QA	AGM/Valves/Engg& Mktg	SDGM/QA	AGM/Valves/Purchase	AGM/QA&BE
Prepared By	Reviewed By			Approved By





365-148/A  
10.06.2020

**BHARAT HEAVY ELECTRICALS LIMITED**  
**HPPB - Tiruchirappalli - 620014**  
**VALVES ENGINEERING AND R&D**  
**STANDARD TECHNICAL DELIVERY CONDITION**

**VL/STDC:023 Rev: 02**  
**Effective Date: 08/08/2020**  
**Page 1 of 1**

**Revision Record:**

Rev. No	Date	Details of Revision
00	28 February 1994	Initial release
01	01 August 2016	Updated for clarity in Word
02	08 August 2020	IS Standard referred for forging tolerances

**TOLERANCE FOR UNTOLERANCED DIMENSIONS IN CASTING & FORGING  
DRAWINGS**


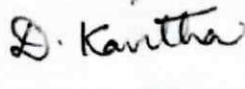

**SCOPE:**

This Standard Technical Delivery Condition specifies the tolerance for the untoleranced dimension for the castings and forgings wherever tolerances are not specified in the applicable drawing/applicable material TDC.

**A. CASTINGS:**

Nominal dimension (in MM)		Acceptable Tolerances (in MM)
UPTO	4	$\pm 0.5$
OVER	4	$\pm 1.0$
OVER	16	$\pm 1.5$
OVER	65	$\pm 2.0$
OVER	125	$\pm 2.5$
OVER	250	$\pm 3.0$
OVER	500	$\pm 4.0$
OVER	1000	$\pm 5.0$
UPTO	16	
UPTO	65	
UPTO	125	
UPTO	250	
UPTO	500	
UPTO	1000	
UPTO	1600	

**B. FORGINGS:** As per Table 2.1, 2.3, 2.5, 2.6, & 2.7 of IS 3469: 1974 and its Annexures

Signature			
Name	Jalaludeen K	Kavitha D	Chinnasamy K
Designation	Deputy Manager	DGM	AGM
Date	08 August 2020	08 August 2020	08 August 2020
Action	Prepared By	Checked & Reviewed By	Approved By

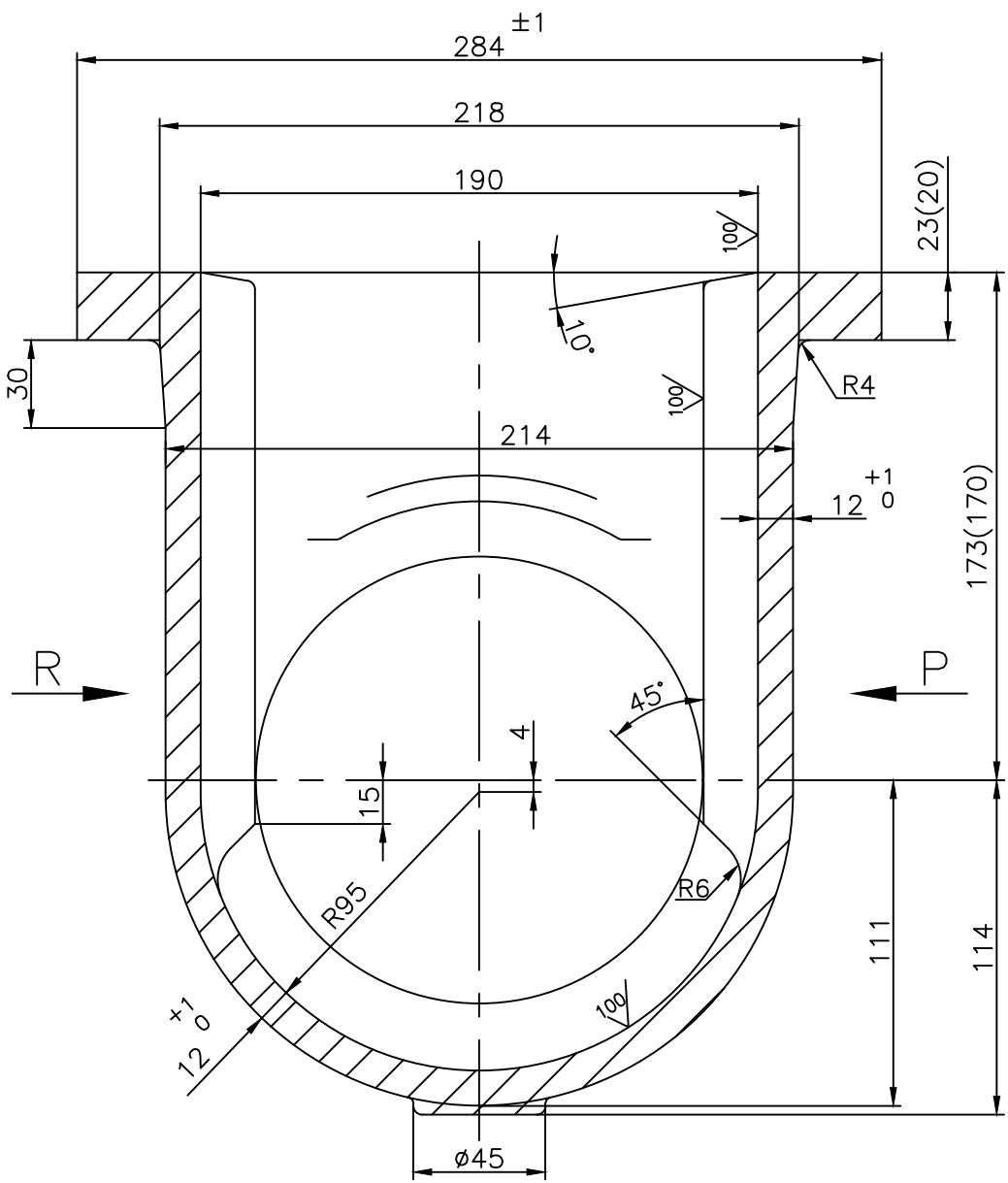
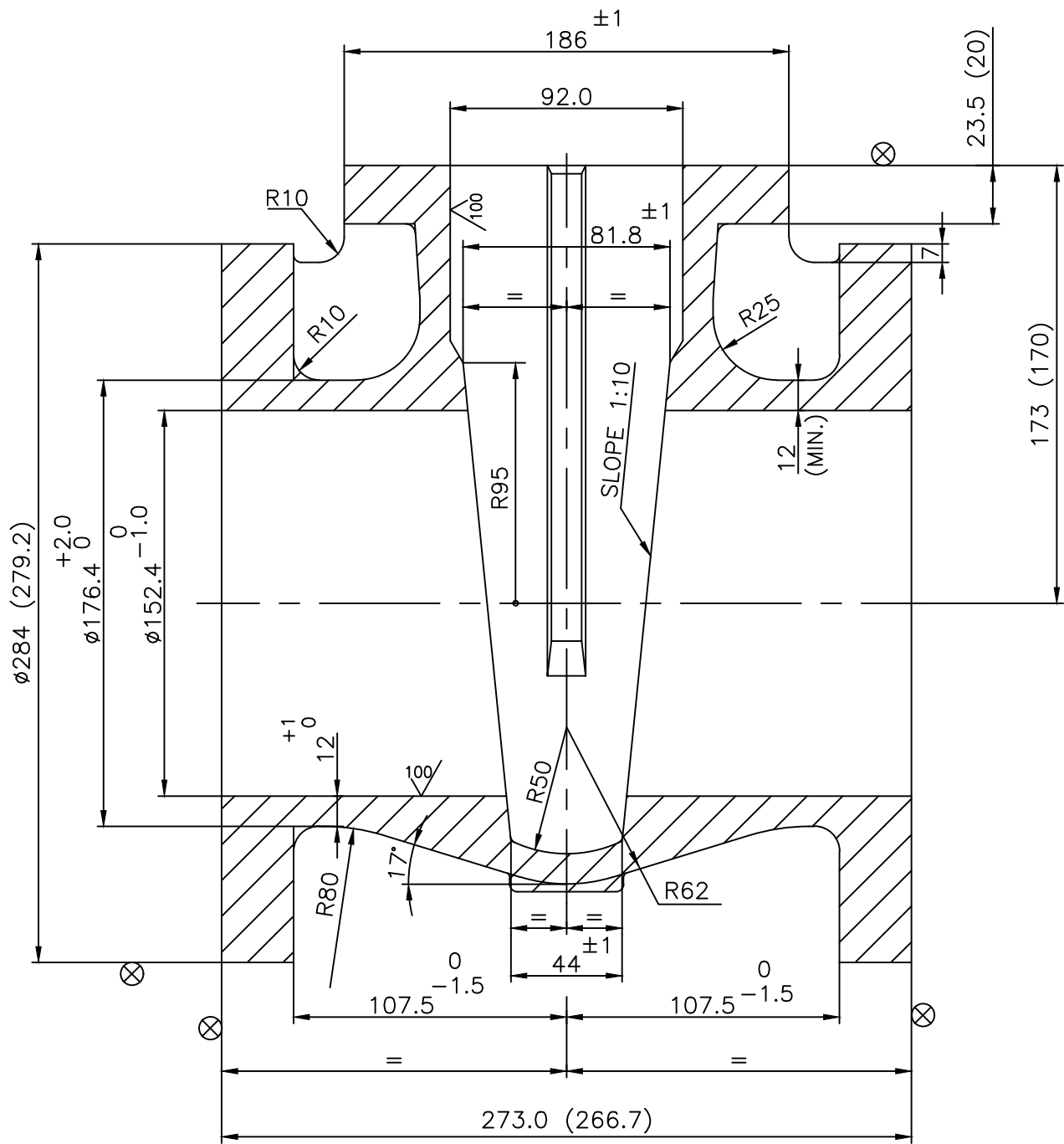


DRAWING NO: 2-V-0000-12512R

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

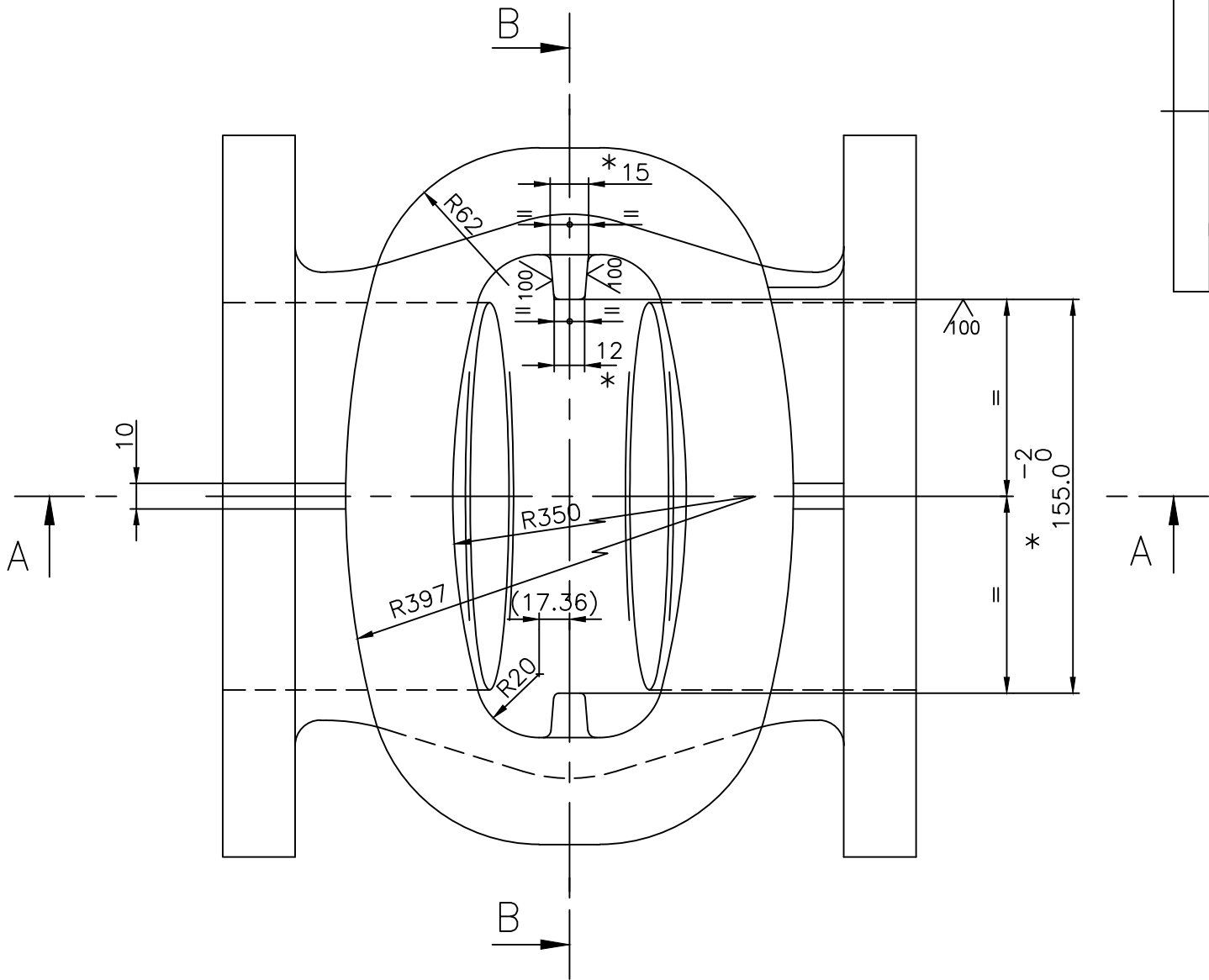
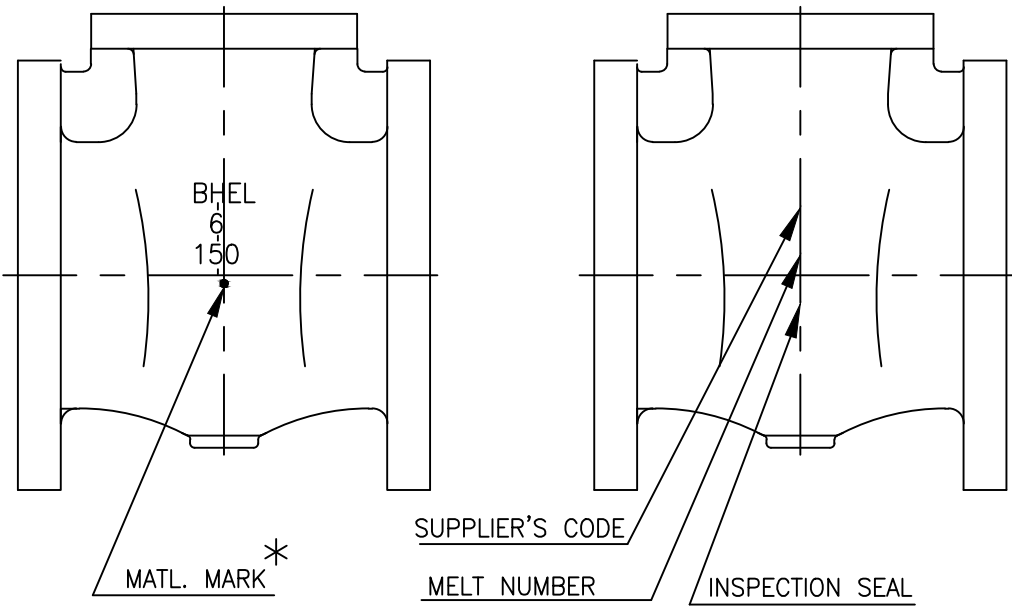
SECTION – BB

SECTION – AA



VIEW – P

VIEW – Q



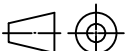


NOTE:–

01. NECESSARY MACHINING ALLOWANCES HAVE BEEN ADDED ON ALL MACHINABLE SURFACES.
02. PERMISSIBLE DEVIATIONS OF NON TOLERANCED CASTING DIMENSIONS REFER APPLICABLE TDC
03. FINISH MACHINED DIMENSIONS ARE INDICATED WITHIN BRACKETS FOR INFORMATION ONLY.
04. LETTERS– BHEL,SIZE,MATL.& SUPPLIERS CODE ARE TO BE CAST IN THE INDICATED ZONE.
05. CASTING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE TDC.
06. UNSPECIFIED CASTING RADII = R2 TO R3
07. HEIGHT OF CASTING LETTERS = 12 mm
08. ⊗ INDICATES SURFACE TO BE MACHINED.
09. √ INDICATED CASTING SURFACES SHALL BE OF HIGH QUALITY WITHOUT SURFACE UNEVENNESS.
10. THIS DRAWING IS DIMENSIONALLY IDENTICAL AND SIMILAR IN ALL RESPECTS TO THE DRAWING 2-V-NC06-13591R/2 EXCEPT MATERIAL SPECIFICATION.

\* SPECIAL NOTE

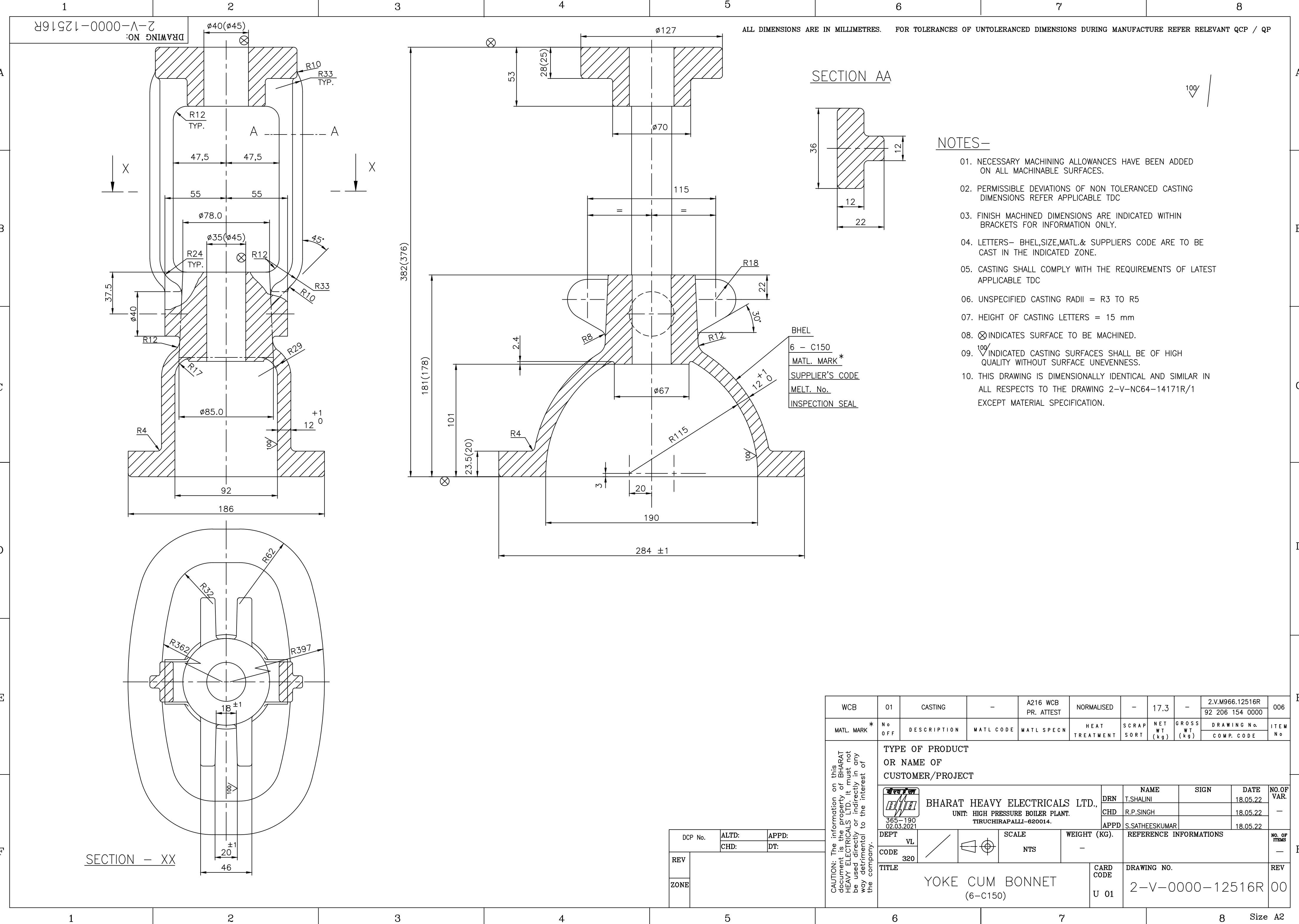
01. GUIDE BAR DIMENSIONS TO BE MAINTAINED WITHIN THE TOLERANCE INDICATED.
02. BOTH GUIDE RIBS TO BE COPLANAR AND TRUELY VERTICAL.

WCB		01	CASTING	—	SA216 WCB ATTEST	NORMALISED	—	41.50	—	2-V-M966-12512R 92 206 149 0000	001
* MATL. MARK	No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No. COMP. CODE	ITEM No	
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT											
<div><p>365-190 02.03.2021</p></div> <div>BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.</div>						DRN	NAME T.SHALINI	SIGN	DATE 18.05.22	NO.OF VAR.	
						CHD	R.P.SINGH		18.05.22	—	
						APPD	S.SATHEESKUMAR		18.05.22		
DEPT	VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS					NO. OF ITEMS
CODE	320			NTS	—						—
TITLE						CARD CODE	DRAWING NO.				REV
BODY ( 6" - C150-FL)						U 01	2-V-0000-12512R				00

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

DCP No.	ALTD:	APPD:
REV	CHD:	DT:
ZONE		





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

DRAWING NO: 2-V-0000-12539R

SECTION-BB

100

SECTION-AA

[illegible]



SECTION-CC


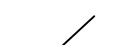

Technical drawing of a mechanical part, likely a flange or bracket, showing a cross-section. The part has a central hole with a diameter of 50 mm. The outer diameter is 132 mm (127 mm). The thickness of the part is 64 mm. The drawing includes dimensions for radii (R6, R10, R30) and a 45-degree chamfer. Section lines are shown, and the part is labeled with 'A' at the ends.

VIEW-P

The diagram shows a cross-section of a boiler tube. A horizontal line represents the weld joint. Above the joint, the text "BHEL" and "6 inch C150" are written. Below the joint, a wavy line represents the weld profile. A line points from the text "MATL.MARK" to a small circle on the left side of the tube wall.

NOTES:—

- 1 . NECESSARY MACHINING ALLOWANCES HAVE BEEN ADDED ON ALL MACHINABLE SURFACES
- 2 . PERMISSIBLE DIMENSIONAL DEVIATIONS OF NON TOLERANCED CASTING DIMENSIONS – REFER LATEST APPLICABLE TDC
- 3 . FINISHED MACHINED DIMENSIONS ARE INDICATED WITHIN BRACKETS FOR INFORMATION ONLY.
- 4 .  CASTING SURFACES MUST BE HIGH QUALITY WITHOUT SURFACE UNEVENNESS
- 5 . ALL DETAILS SHOWN IN VIEWS P & Q , EXCEPT MELT No. AND INSPECTION SEAL, ARE TO BE CAST.
- 6 . CASTING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE TDC
- 7 . UNSPECIFIED CASTING RADII 3 – 5 MM
- 8 . HEIGHT OF CASTING LETTERS 20MM
- 9 .  SURFACES TO BE MACHINED
- 10 . THIS DRAWING IS DIMENSIONALLY IDENTICAL AND SIMILAR IN ALL RESPECTS TO THE DRAWING  
1-V-5156-02776R AND 2-V-Z121-06093R EXCEPT MATERIAL SPECIFICATION.
- 11 . # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

CF3M	# 1	CASTING	—	SA351 CF3M (ATTEST)	SH	—	88.0	—	2.V.M968.12539R 92 206 179 0000	01
MATL MARK*	No OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No. COMP. CODE	ITEM No
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.	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
	 365-190 02.03.2021 <b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.					DRN	NAME T.SHALINI	SIGN	DATE 18.05.22	NO.OF VAR.
						CHD	R.P.SINGH		18.05.22	—
						APPD	S.SATHEESKUMAR		18.05.22	
	DEPT VL			SCALE NTS	WEIGHT (KG). —	REFERENCE INFORMATIONS				NO. OF ITEMS =
	CODE 320									
TITLE  BODY 6"—150C					CARD CODE  U 01	DRAWING NO.  2-V-0000-12539R				REV  00

DCP No.		ALTD:	APPD:
		CHD:	DT:
REV			
ZONE			

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

बीएसईएस  
BSES  
365-190  
02.03.2021

BHARAT HEAVY ELECTRICALS LTD.,  
UNIT: HIGH PRESSURE BOILER PLANT.  
TIRUCHIRAPALLI-620014.

<b>DRN</b>	<b>NAME</b> T.SHALINI	<b>SIGN</b>	<b>DATE</b> 18.05.22	<b>NO.OF</b> <b>VAR.</b>
<b>CHD</b>	R.P.SINGH		18.05.22	—
<b>APPD</b>	S.SATHEESKUMAR		18.05.22	

DEPT	VL
CODE	320

SCALE	WEIGHT (KG).
NTS	—

## REFERENCE INFORMATION

NO. OF  
ITEMS

TITLE	BODY	6"-150C

CARD CODE	DRAWING NO.	REV
J 01	2-V-0000-12539R	00

Size A2



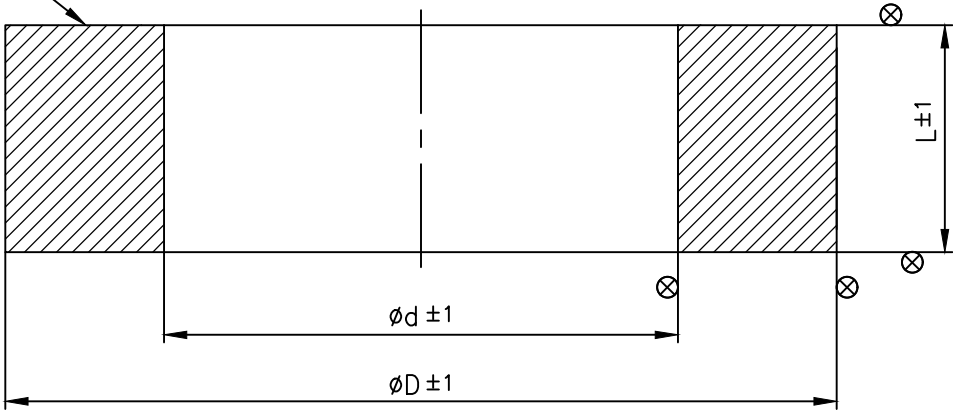
DRAWING NO: 3-V-0000-35331P									
SL.No.	DRAWING No.	MATL.SPECN.	MATL.CODE.	WT. (kg)	MATL.MARK & SIZE TO BE PUNCHED *	DIMENSIONS			APPLICABLE VALVE
						øD	ød	L	
01	3-V-M958-35331P	SA 105, NR PRODUCT ATTEST	92 206 046	1.10	A105 - 2-C150	91	44	27	2-C150 FV
02	3-V-M959-35331P		92 206 048	1.00	A105 - 2-C150	80	32	30	2-C150 GV
03	3-V-M961-35331P/1		92 206 054	2.25	A105 - 4-C300	△ 144	△ 82	26	4-C300 GV
04	3-V-M962-35331P		92 206 058	3.60	A105 - 8-C300	235	191	31	8-C300 GV
05	3-V-M966-35331P		92 206 284	2.52	A105 - 6-C150	178	136	31	6-C150 GV



NOTES:-

01. FORGING SHALL BE MADE IN SUCH A WAY THAT MACHINING CAN BE DONE IN THE SPECIFIED DIMENSION SHOWN IN TABULAR COLUMN.
02. CHAMFER THE SHARP CORNERS TO 1x45°
03. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
04. FORGING SHALL COMPLY WITH REQUIREMENTS OF THE LATEST APPLICABLE TDC

PUNCH SIZE,MATL.MARK & SUPPLIER'S CODE



DCP No.		ALTD: RPS	APPD: SSK	DCP No.	ALTD: RPS	APPD: SSK
—		CHD: MK	DT: 23.11.22		—	CHD: SAB
REV	SL. No. 05 INCLUDED.			REV	IN SL. No .03 DIMN.144 & 82 WAS 136 & 90 RESPECTIVELY.	
02				01		
ZONE				ZONE		
—				—		

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NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No.	ITEM No	
								COMP. CODE		
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT										
<div><div><div>365-191</div><div>02.03.2021</div></div><div><div>BHARAT HEAVY ELECTRICALS LTD.,</div><div>UNIT: HIGH PRESSURE BOILER PLANT.</div><div>TIRUCHIRAPALLI-620014.</div></div></div>					DRN	NAME R.P.SINGH	SIGN	DATE 26.12.20	NO.OF VAR.	
					CHD	SAMEER BHAT		26.12.20		—
					APPD	S.SATHEES		26.12.20		
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS				NO. OF ITEMS	
CODE 320			NTS	--						
TITLE				CARD CODE	DRAWING NO.				REV	
SEAT RING  (PROOF MACHINING)				U 01	3-V-0000-35331P				02	

DRAWING NO:  
3-V-0000-35341R

SL. No.	DRAWING NUMBER	MATL.SPECN.	TYPE No.	MATL. MARK	MATERIAL CODE	Wt.(kg)	DIMENSIONS												APPLICABLE VALVES
							SQ.A	øD	L	L1	L2	L3	L4	L5	H	R1	R2		
01	3-V-M958-35341R	A216 WCB NR, PR. ATTEST	M958	WCB	92 206 044 0000	0.75	45	32	50	30	24	10	6.6	7	64	28	12	2"-150C-FV	
# 02	3-V-M967-35341R	A351 CF3M SH, PR. ATTEST	M967	CF3M	92 206 184 0000	0.90	45	34	50	30	26	12	1.9	7	89.5	30	16	3"-150C-FV	
# 03	3-V-M968-35341R	A351 CF3M SH, PR. ATTEST	M968	CF3M	92 206 185 0000	3.65	85	38	65	48	38	26	10.5	6	132	75	25	6"-150C-FV	

NOTES:-

- 1 . NECESSARY MACHINING ALLOWANCES HAVE BEEN ADDED ON ALL MACHINABLE SURFACES.
- 2 . PERMISSIBLE DIMENSIONAL DEVIATIONS OF NON TOLERANCED CASTING DIMENSIONS – REFER LATEST APPLICABLE QUALITY PROCEDURE.
- 3 . CASTING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE TDC.
- 4 . UNSPECIFIED CASTING RADII 3 – 5 MM.
- 5 . HEIGHT OF CASTING LETTERS 5MM.
- 6 . ⊗ SURFACES TO BE MACHINED FURTHER.
- 7 . # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No. COMP. CODE	ITEM No
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
Bharat Heavy Electricals Ltd. 365-191 02.03.2021					DRN	NAME R.P.SINGH	SIGN	DATE 28.12.20	NO.OF VAR. —
					CHD	SAMEER BHAT		28.12.20	
					APPD	S.SATHEES		28.12.20	
DEPT VL	CODE 320	SCALE NTS	WEIGHT (KG). —	REFERENCE INFORMATION					NO. OF ITEMS —
TITLE ARM (CASTING)							CARD CODE U 01	DRAWING NO. 3-V-0000-35341R	REV 01

DCP No. —

ALTD: TS

APPD: SSK

CHD: RPS

DT: 18.05.22

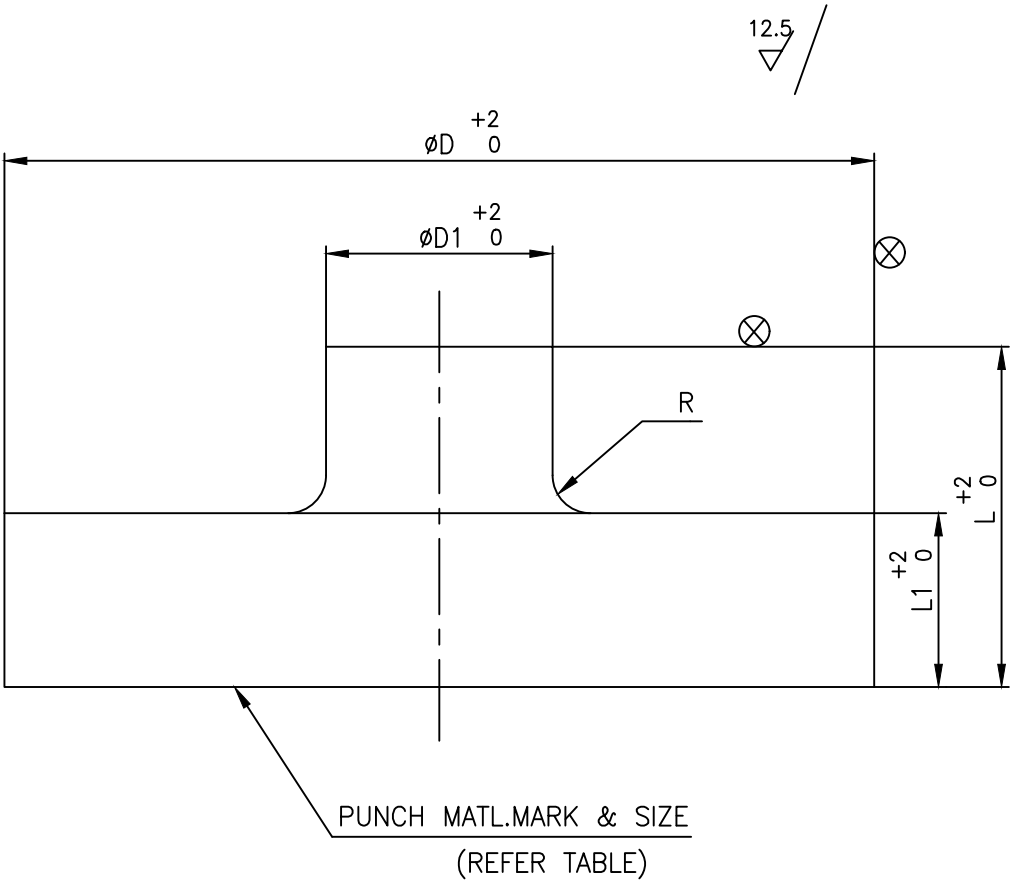
REV 01

SL. NO. 02 & 03 INCLUDED.

ZONE —

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DRAWING NO: 3-V-0000-35343P															
SL.No.	DRAWING No.	MATL.SPECN.	MATL.CODE.	WT. (kg)	MATL.MARK & SIZE TO BE PUNCHED *	DIMENSIONS					APPLICABLE VALVES				
						∅D	∅D1	L	L1	R					
01	3-V-M958-35343P/1	SA216 WCB NR, ATTEST	92 206 045	8.4	WCB - 2-C150	210	40	54	30	15	2"-150C FV				
# 02	3-V-M967-35343P/1	SA351 CF3M SH, ATTEST	92 206 186	10.11	CF3M - 3-C150	258	40	50	24	15	3"-150C FV				
# 03	3-V-M968-35343P/1	SA351 CF3M SH, ATTEST	92 206 187	27.02	CF3M - 6-C150	368	40	62	32	15	6"-150C FV				




NOTES:—

1. CASTING SHALL BE MADE AND PROOF MACHINED TO THE DIMENSION SHOWN IN TABULATION.
2. UNSPECIFIED CASTING RADII—R3
3. ⊗ INDICATES THE SURFACES WHICH ARE TO BE MACHINED FURTHER.
4. CASTING SHALL COMPLY WITH REQUIREMENT OF LATEST APPLICABLE TDC.
5. # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

				DCP No.		ALTD: RPS	APPD: SSK
				—		CHD: MK	DT: 17.06.23
				REV 03	IGC TEST INCLUDED IN SL No. 02 & 03.		
				ZONE —			
DCP No.		ALTD: TS	APPD: SSK	DCP No.		ALTD:RPS	APPD: SSK
—		CHD: RPS	DT: 19.05.22	802626		CHD: SAB	DT: 24.03.21
REV 02	SL. NO. 02 & 03 INCLUDED.			REV 01	IN SL. No. 01 MATL. SPECN. SA216 WCB WAS SA105 AND MATL. MARK UPDATED.		
ZONE —				ZONE —			

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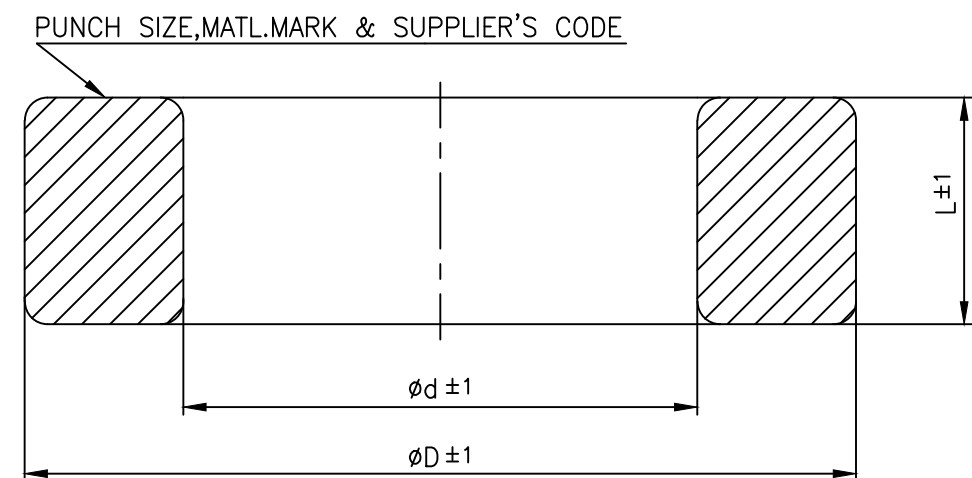
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No. COMP. CODE	ITEM No
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT									
		BHARAT HEAVY ELECTRICALS LTD.,			DRN	NAME	SIGN	DATE	NO.OF VAR.
365-191 02.03.2021		UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.			CHD	SAMEER BHAT		24.12.20	—
					APPD	S.SATHEES		24.12.20	
DEPT VL			SCALE NTS	WEIGHT (KG). --	REFERENCE INFORMATION				NO. OF ITEMS —
CODE 320									
TITLE COVER (PROOF MACHINED)				CARD CODE U 01	DRAWING NO. 3-V-0000-35343P				REV 03



<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">DRAWING NO: 3-V-0000-35449R</div> <div></div> </div>											
SL. NO.	DRG.NO.	MATL.SPECN.		HEAT TREATMENT	MATL. CODE	DIMENSIONS			NET WT (kg)	TO BE PUNCHED	
						øD	ød	L		SIZE	MATL.MARK
01	3-V-M966-35449R	SA216 WCB	PRODUCT ATTEST	NR	92 206 150 0000	178	136	31	2.52	6-C150-GV	WCB
# 02	3-V-M967-35449R	SA351 CF3M		SOLUTION HEAT TREATED	92 206 180 0000	110	70	26	1.16	3-C150-FV	CF3M
# 03	3-V-M968-35449R	SA351 CF3M			92 206 181 0000	191	146	34	3.18	6-C150-FV	CF3M


NOTES:-

1. CASTING SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE MATERIAL STD SA216 WCB & SA351 CF3M.
2. UNSPECIFIED CASTING RADII 3 MM.
3. CASTING SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.
4. CASTING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE TDC
5. # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.



N O  O F F	D E S C R I P T I O N	M A T L  C O D E	M A T L  S P E C N	H E A T  T R E A T M E N T	S C R A P  S O R T	N E T  W T  ( k g )	G R O S S  W T  ( k g )	D R A W I N G  N o.   C O M P.  C O D E	I T E M  N o.

[illegible]

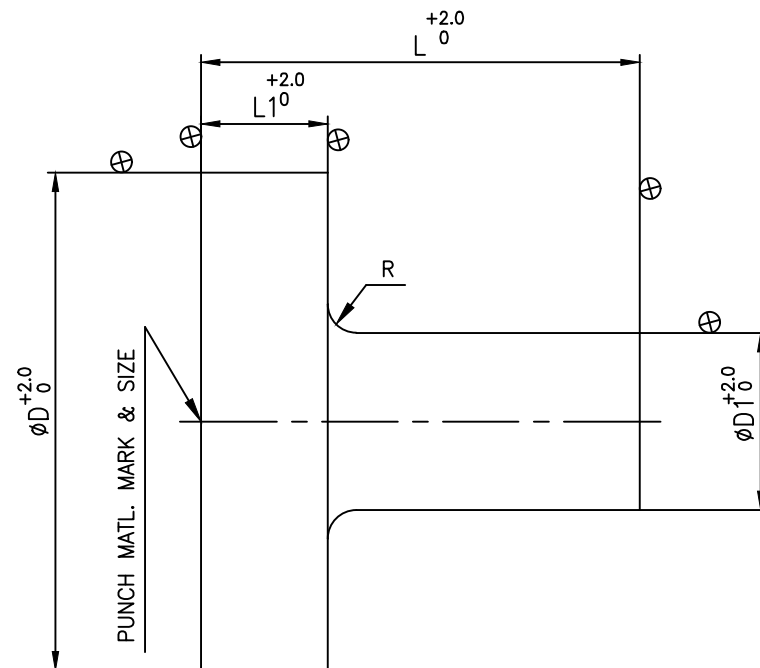
 365-191 02.03.2021	<b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.	DRN	T.SHALINI		18.05.22	NO.OF VAR.
		CHD	R.P.SINGH		18.05.22	
		APPD	S.SATHEESKUMAR		18.05.22	

DEPT VL		SCALE NTS	WEIGHT (KG). REF. TABLE	REFERENCE INFORMATIONS	NO. OF ITEMS —
CODE 320					
TITLE SEAT RING (CASTING)			CARD CODE U 01	DRAWING NO. 3-V-0000-35449R	REV 00

DCP No.	ALTD:	APPD:
	CHD:	DT:
REV		
ZONE		

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<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">DRAWING NO: 3-V-0000-35451R</div> <div></div> </div>												
SL. NO.	DRAWING NO.	MATL. SPECN.	MATL. CODE	TO BE PUNCHED		WT. (KG)	DIMENSIONS					REMARKS
				MATL. MARK	SIZE		ØD	ØD1	L	L1	R	
# 01	3-V-M967-35451R	ASTM A351 CF3M SH, PR. ATTEST	92 206 182 0000	CF3M	3"-C150	1.75	116	36	70	19	5	3"-150C-FV
# 02	3-V-M968-35451R	ASTM A351 CF3M SH, PR. ATTEST	92 206 183 0000	CF3M	6"-C150	8.8	198	64	105	29	5	6"-150C-FV





NOTES:-

- 1 . NECESSARY MACHINING ALLOWANCES HAVE BEEN ADDED ON ALL MACHINABLE SURFACES
- 2 . CASTING SHALL COMPLY WITH THE REQUIREMENTS OF LATEST APPLICABLE TDC.
- 3 . UNSPECIFIED CASTING RADII 3 – 5 MM
- 4 . ⊗ INDICATES SURFACES TO BE MACHINED
- 5 . # MARKED ITEMS ARE IGC TEST SHALL BE CONDUCTED.

N O  O F F	D E S C R I P T I O N	M A T L  C O D E	M A T L  S P E C N	H E A T  T R E A T M E N T	S C R A P  S O R T	N E T  W T  ( k g )	G R O S S  W T  ( k g )	D R A W I N G  N o.	I T E M  N o
								C O M P. C O D E	

[illegible]

 365-191 02.03.2021	<b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.	DRN	NAME T.SHALINI	SIGN	DATE 18.05.22	NO.OF VAR.
		CHD	R.P.SINGH		18.05.22	
		APPD	S.SATHEESKUMAR		18.05.22	

DEPT VL		SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS	NO. OF ITEMS
CODE 320		NTS	—		—

TITLE	CARD CODE	DRAWING NO.	REV
FLAP	U 01	3-V-0000-35451R	00

DCP No.	ALTD:	APPD:
	CHD:	DT:
REV		
ZONE		

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DRAWING NO. 3-V-0000-35527P															
SL. No.	DRAWING No.	COMPONENT CODE	MARL. SPECN.	ØD	ØD1	ØD2	PCD	ØD3	Ød	N	F	H	H1	NET WT. (kg)	*SIZE-RATING
01	3-V-M967-35527P	92 206 336 0000	ASTM A351 CF3M, SH, ATTEST	90.7	108.0	127.0	152.4	190.0	19.05	4	1.6	29.6	24.0	5.34	3"-C150
02	3-V-M968-35527P	92 206 337 0000	ASTM A351 CF3M, SH, ATTEST	170.7	192.1	215.9	241.3	279.0	22.35	8	1.6	40.0	25.5	9.25	6"-C150

12.5 / 3.2

MARKING DETAILS

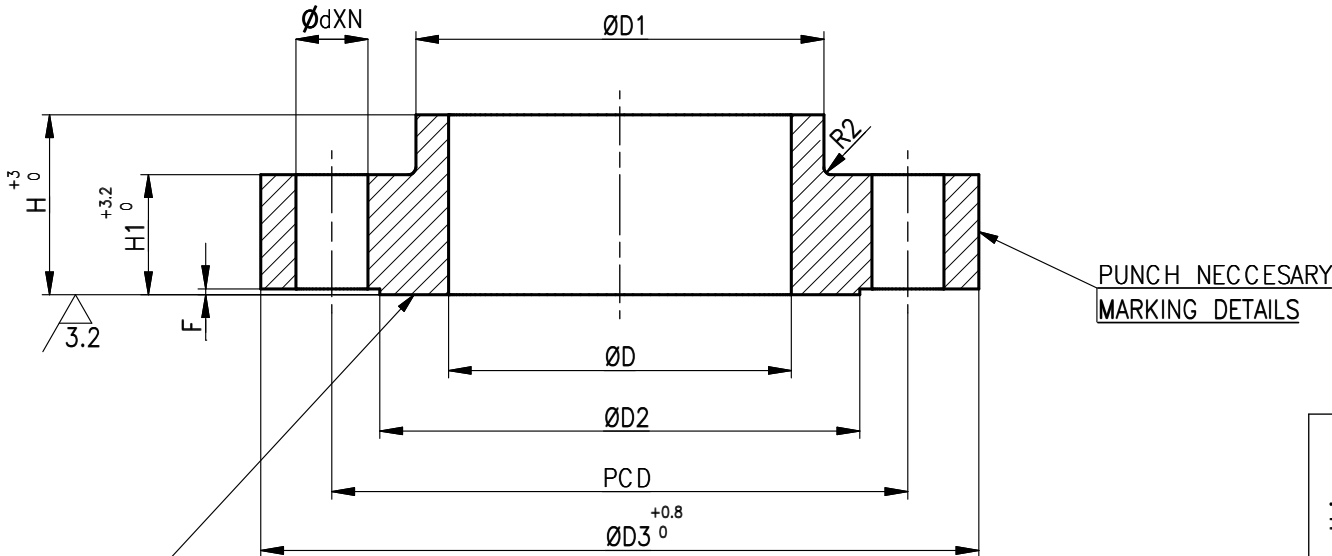
(FOR VARIANT NO. 01 & 02)

BHEL

\*SIZE & RATING  
CF3M

NOTES:



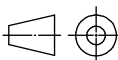
1. SHARP CORNERS TO BE ROUNDED OFF.  
2. THE CASTING SHALL COMPLY THE QUALITY REQUIREMENTS OF APPLICABLE QUALITY PROCEDURE.  
3. DIMENSIONS ARE AS PER ASME B16.5



SPIRAL OR CONCENTRIC SERRATIONS WITH 24 TO 40 GROOVES PER INCH (25.4mm). THE CUTTING TOOL EMPLOYED SHALL HAVE AN APPROXIMATE 0.06 INCH OR LARGER RADIUS.

DCP No.		ALTD: RPS	APPD: SSK
-		CHD: MK	DT: 21.12.23
REV	NOTES UPDATED.		
01			
ZONE			

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

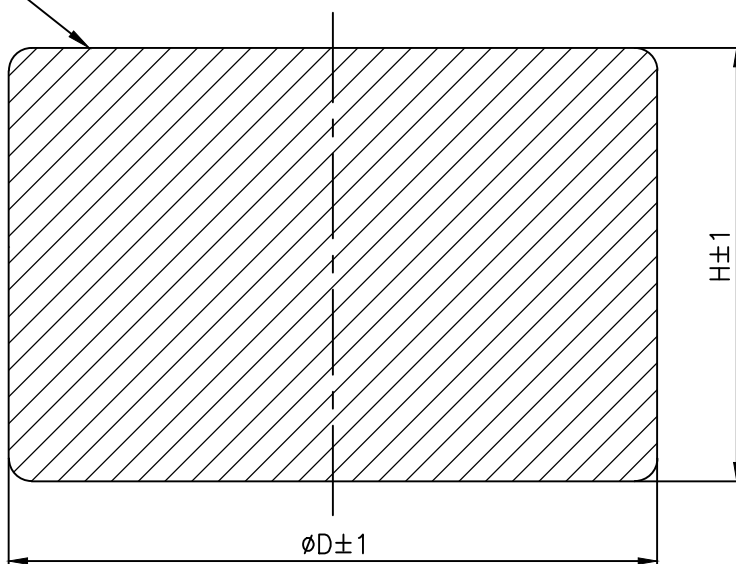
—	—	—	—	—	—	—	—	—	—	
S.L NO.	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	DRAWING No.	ITEM No	
								COMP. CODE		
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT										
CS										
 365-191 02.03.2021					DRN	NAME R P SINGH	SIGN	DATE 20.12.23	NO.OF VAR.	
BHARAT HEAVY ELECTRICALS LTD., UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI-620014.					CHD	MUKESH KUMAR		20.12.23		
					APPD	S SATHEES		20.12.23		
DEPT VL			SCALE	WEIGHT (KG).	REFERENCE INFORMATIONS				NO. OF ITEMS	
CODE 320			NTS	—	—					
TITLE					CARD CODE	DRAWING NO.				REV
COMPANION FLANGE (SLIP ON WELDING)					U 01	3-V-0000-35527P				01


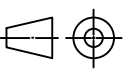
DCP No.	ALTD:	APPD:
	CHD:	DT:
REV		
ZONE		

NOTES:-

1. CASTING SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE MATERIAL STD SA351 CF3M.
2. UNSPECIFIED CASTING RADII 1 MM
3. CASTING SHALL COMPLY WITH REQUIREMENTS OF LATEST APPLICABLE QUALITY WORK INSTRUCTIONS.
4. # MARKED ITEMS IGC TEST SHALL BE CONDUCTED.

PUNCH MATL. MARK & SUPPLIER'S CODE



#02	4-V-M968-27550R	SA351 CF3M, SH	PROD. ATTEST	92 206 189 0000	CF3M	1.2	70	40
#01	4-V-M967-27550R	SA351 CF3M, SH		92 206 188 0000	CF3M	0.3	40	30
SL. No.	DRAWING No.	MATL. SPECN.	MATL. CODE	MATL. MARK *TO BE PUNCHED.	WT IN KG	DIMENSIONS		
NO OFF	DESCRIPTION	MATL CODE	MATL SPECN	HEAT TREATMENT	SCRAP SORT	NET WT (kg)	GROSS WT (kg)	ITEM No
 <b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT: HIGH PRESSURE BOILER PLANT. TIRUCHIRAPALLI 620014.				DRN	NAME	SIGN	DATE	NO.OF VAR
				CHD	T.SHALINI		01.06.22	
				APPD	R.P.SINGH		01.06.22	
					S.SATHEES		01.06.22	
DEPT	VL		SCALE	WEIGHT (KG).	REFERENCE INFORMATION			NO. OF ITEMS
CODE	320		NTS	-				
TITLE				CARD CODE	DRAWING NO.			REV
ROD (CASTING)				U 01	4-V-0000-27550R			00



# न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

NUCLEAR POWER CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

गुणवत्ता आश्वासन निदेशालय

Directorate of Quality Assurance

नाभिकीय ऊर्जा भवन, अणुशक्तिनगर, मुंबई-400 094

Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.

Corporate Identification No. U40104MH1987GOI149458



आर.के. गुप्ता R.K. Gupta

अधिशायी निदेशक (गु.आ.) Executive Director (QA)

Phone: 022- 25995030/25558487

Fax.No.: 022-25565354

e-mail: rk\_gupta@npcil.co.in

सं. No. एनपीसीआईएलNPCIL/02500/क्यूएडीQAD/ईडीED(क्यूएQA)/एमएम/2019/1160

December 17, 2019

**विषय : वेधी पदार्थों के अनुमोदित ब्रांड की सूची।**

**Sub: List of approved brands of penetrant materials**

17-12-2019 की स्थिति में एनपीसीआईएल के उपयोग हेतु वेधी पदार्थों के अनुमोदित ब्रांड की सूची इसके साथ संलग्न है। यह अनुमोदन हमारी प्रक्रिया संख्या QAD/NDT-PROC-PT-05 (तरल वेधी परीक्षण के लिए उपयोग में आने वाले रसायन परिवार के अनुमोदन हेतु प्रक्रिया) के अनुसार आवश्यकताओं के अनुरूप प्रदान किया जाता है।

The list of approved brands of penetrant materials for use on NPCIL jobs as on 17-12-2019 is enclosed herewith. The approvals are granted in conformance to the requirements as per our procedure no. QAD/NDT-PROC-PT-05 (Procedure for approval of Family of Chemicals used for Liquid Penetrant Examination).

  
(आर.के. गुप्ता R. K. Gupta)

अधिशायी निदेशक (गु.आ.) Executive Director (QA)



# न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

(भारत सरकार का उद्यम)

NUCLEAR POWER CORPORATION OF INDIA LTD.

(A Government of India Enterprise)

गुणवत्ता आश्वासन निदेशालय

Directorate of Quality Assurance

नाभिकीय ऊर्जा भवन, अणुशक्तिनगर, मुंबई-400 094

Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.



## LIST OF APPROVED PENETRANT TESTING MATERIAL

(As on 17-12-2019)

Sr. No.	Manufacturers	Brand name	Description	Valid up to
1.	DYEGLO PVT. LTD, PUNE	RP-81	Red Coloured Solvent Removable Penetrant	DEC2023
2.	DYEGLO PVT. LTD, PUNE	RP-90	Red Coloured Water Washable Penetrant	DEC2023
3.	DYEGLO PVT. LTD, PUNE	CL-01	Solvent Cleaner	DEC2023
4.	DYEGLO PVT. LTD, PUNE	RD-01	Solvent Base Developer suitable for RP-81 & RP-90	DEC2023
5.	DYEGLO PVT. LTD, PUNE	FP-01	Fluorescent Solvent Removable Penetrant	DEC2023
6.	DYEGLO PVT. LTD, PUNE	WD-01	Solvent Base Developer suitable for FP-01.	DEC2023
7.	FERROCHEM NDT SYSTEM PVT. LTD. PUNE	FC-911, FC-811 FC-711	Solvent Removable (Visible)	FEB2022
8.	FERROCHEM NDT SYSTEM PVT. LTD. PUNE	FC-931, FC-811	Water Washable (Visible)	FEB2022
9.	FERROCHEM NDT SYSTEM PVT. LTD. PUNE	FC-941, FC-821	Water washable (Fluorescent)	FEB2022
10.	FERROCHEM NDT SYSTEM PVT. LTD. PUNE	FC-921, FC-821, FC-721	Solvent removable (Fluorescent)	FEB2022
11.	MAGNAFLUX ITW INDIA PVT.LTD.SECUNDERABAD	SKL-SP 1	Red Coloured Solvent Removable Penetrant	JUL2024
12.	MAGNAFLUX ITW INDIA PVT.LTD.SECUNDERABAD	SKC-1	Solvent Cleaner	JUL2024
13.	MAGNAFLUX ITW INDIA PVT.LTD.SECUNDERABAD	SKD-S2	Solvent Base Developer	JUL2024
14.	MAGNAFLUX ITW INDIA PVT.LTD.SECUNDERABAD	SKL-WP2	Red Coloured Water Washable Penetrant	JUL2024
15.	MAGNAFLUX ITW INDIA PVT.LTD.SECUNDERABAD	SKL-SP2	Red Coloured Solvent Removable Penetrant.	JUL2024
16.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 62	Solvent Removable Penetrant-Red	JAN2021
17.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 68 NF	Solvent Removable and Water Washable Penetrant-Red	JAN2021
18.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 67	Solvent Removable and Water Washable Penetrant-Red	JAN2021
19.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 672 F	Solvent Removable and Water Washable Penetrant-Fluorescent	JAN2021
20.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 85	Solvent Remover suitable for MR <sup>(R)</sup> 68NF, MR <sup>(R)</sup> 67, MR <sup>(R)</sup> 672F and MR <sup>(R)</sup> 62.	JAN2021
21.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 70	Non-Aqueous Developer suitable for MR <sup>(R)</sup> 68 NF, MR <sup>(R)</sup> 67 and MR <sup>(R)</sup> 672F	JAN2021



Sr. No.	Manufacturers	Brand name	Description	Valid up to
22.	MR CHEMIE INDIA PVT. LTD., HYDERABAD.	MR <sup>(R)</sup> 70 I	Non-Aqueous Developer suitable for MR <sup>(R)</sup> 62.	JAN2021
23.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PP-15/PP-15B	Red Coloured Solvent Removable Penetrant	SEPT2021
24.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PP-19/PP-19B	Red Coloured Water Washable Penetrant	SEPT2021
25.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PC-21/PC-21B	Solvent Cleaner	SEPT2021
26.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PD-31/PD-31B	Solvent Base Developer	SEPT2021
27.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PP-110/ PP110B	Red Coloured Solvent Removable Penetrant	SEPT2021
28.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PC 120/ PC-120B	Solvent Cleaner	SEPT2021
29.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	PD 130 /PD-130B	Solvent Base Developer	SEPT2021
30.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	FPS46/FPS46B	Solvent Removable Fluorescent Penetrant	SEPT2021
31.	P-MET HIGH TECH CO. PVT. LTD., VADODARA	FPS49/FPS49B	Water Washable Fluorescent Penetrant	SEPT2021
32.	PRADEEP METAL TREATMENT CHEMICALS PVT. LTD., THANE	Flaw Guide Penetrant (NP Grade)	Red Coloured Solvent Removable Penetrant.	OCT2024
33.	PRADEEP METAL TREATMENT CHEMICALS PVT. LTD., THANE	Flaw Guide Cleaner (NP Grade)	Solvent Cleaner	OCT2024
34.	PRADEEP METAL TREATMENT CHEMICALS PVT. LTD., THANE	Flaw Guide Developer (NP Grade)	Solvent Base Developer	OCT2024
35.	PRADEEP METAL TREATMENT CHEMICALS PVT. LTD., THANE	Flaw Guide Red Dye Penetrant-W	Water Washable Dye Penetrant	OCT2024

Note:-

1. Halogen content in Penetrant, Cleaner and Developer is 25ppm (max) and Sulphur content is 500ppm (max). However when using penetrant materials for Austenitic Stainless Steel, Titanium, Nickel base or other high temperature alloys, Halogen and Sulphur content shall not exceed 25ppm. Manufacture has to mention for each batch, the Sulphur and Halogen content in the label of each container for selection of Penetrant materials for the stated application.
2. Developer is to be used in Aerosol can to get the best results.

*(Signature)*  
17/12/19

(Anoop Singh)  
ACE & Head QA (M-6)

Through: Shri A.K. Singh, AD (QA- Opns. & Group-1)

*(Signature)*  
17/12/19

*(Signature)*  
17/12/19

Executive Director (QA)

*(Signature)*  
17.12.19



## न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

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Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.

Corporate Identification No. U40104MH1987GOI149458



आर.के. गुप्ता R.K. Gupta

अधिशायी निदेशक (गु.आ.) Executive Director (QA)

Phone: 022- 25995030/25558487

Fax.No.: 022-25565354

e-mail: rk\_gupta@npcil.co.in

सं.No. एनपीसीआईएलNPCIL/02500/क्यूएडी QAD/एमएम/2019/1161

दिनांक Date: December 17, 2019

विषय : वेल्डिंग कंज्यूमेबल्स के अनुमोदित ब्रांड की सूची।

**Sub:** List of approved brands of welding consumables

17/12/2019 की स्थिति में एनपीसीआईएल कार्यों के उपयोग हेतु वेल्डिंग कंज्यूमेबल्स के अनुमोदित ब्रांडों की सूची इसके साथ संलग्न है:

The lists of approved brands of welding consumables for use on NPCIL jobs as on 17/12/2019 are enclosed herewith.

- 1) अनुमोदित कार्बन स्टील एवं निम्न एलॉय स्टील वेल्डिंग इलेक्ट्रोड्स की सूची (2 शीट)  
List of Approved Carbon Steel & Low Alloy Steel Welding Electrodes (2 Sheets).
- 2) अनुमोदित स्टेनलेस स्टील एवं अन्य निकिल एलॉय इलेक्ट्रोड्स की सूची (2 शीट)  
List of Approved Stainless Steel & other Ni Alloy Electrodes (2 Sheets).
- 3) वायर के अनुमोदित ब्रांड एवं वायर फ्लक्स संयोजन की सूची (1 शीट)  
List of Approved Brands of Wire and Wire Flux Combination (1 Sheet).

वेल्डिंग कंज्यूमेबल्स (क्यूएडी/प्रापण/वेल्डिंग कंज्यूमेबल्स/002 संशो.: 2) के अनुमोदन के लिए प्रक्रिया में एवं एसएमई खंड II भाग C के अद्यतन संस्करण में निर्धारित आवश्यकताओं के अनुसार अनुमोदन प्रदान किया जाता है। तथापि, विशेष मामलों में जहाँ कहीं भी बैच क्वालिफिकेशन अपेक्षित होगा, अलग से निष्पादित किया जाएगा।

The approvals are granted in conformance to the requirements stipulated in Procedure for approval of Welding Consumables (QAD/Proc/Welding Consumables/002 Rev:2) and latest edition of ASME Section II Part C. However, batch qualification wherever called for in specific cases, will have to be carried out separately.

(आर.के. गुप्ता R.K. Gupta) 17.12.19

अधिशायी निदेशक (गु.आ.) Executive Director (QA)





# न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

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Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.



## 1) LIST OF APPROVED CARBON STEEL & LOW ALLOY STEEL WELDING ELECTRODES

(2 pages)

As on 17-12-2019

Sr. No.	Manufacturers	Brand name	AWS No.	Valid up to
1.	ADOR WELDING LTD., SILVASSA	SUPABASE X PLUS	E7018	FEB2024
2.	ADOR WELDING LTD., SILVASSA	MOLYTEN	E7018-A1	APR2020
3.	ADOR WELDING LTD., SILVASSA	CHROMOTEN	E8018 B2	APR2020
4.	ADOR WELDING LTD., SILVASSA	CHROMOTEN-C	E9018 B3	APR2020
5.	ADOR WELDING LTD., SILVASSA	TENALLOY Z PLUS	E7018-1	JUN2022
6.	D&H INDIA LTD., INDORE	SUPER -CR-1	E8018 B2	DEC2020
7.	D&H INDIA LTD., INDORE	SUPER -CR-2	E9018 B3	DEC2020
8.	D&H INDIA LTD., INDORE	SUPER -LH (SPL)	E7018-1 (DCEP Only)	FEB2021
9.	D&H INDIA LTD., INDORE	STANDARD	E6013	FEB2021
10.	D&H INDIA LTD., INDORE	SUPER LH	E7018 (DCEP Only)	FEB2021
11.	D&H SECHERON, INDORE	MEDIO	E6013	JUN2020
12.	D&H SECHERON, INDORE	EXOBEL	E6013	JUN2020
13.	D&H SECHERON, INDORE	SUPER THERME	E7018	JUN2020
14.	D&H SECHERON, INDORE	MOLYTHERME	E7018-A1	JUN2022
15.	D&H SECHERON, INDORE	SUPER THERME(SPL)	E7018-1	NOV2023
16.	HONAVAR ELECTRODES, THANE	REGULAR S	E6013	JAN2020
17.	HONAVAR ELECTRODES, THANE	ULTIMATE - 18	E7018	JAN2020
18.	HONAVAR ELECTRODES, THANE	ULTIMATE - 18 SPL	E7018-1	JAN2020
19.	MAILAM INDIA LTD., PUDUCHERRY	MAILARC -13R	E6013	SEP2020
20.	MAILAM INDIA LTD., PUDUCHERRY	MAILARC -18	E7018	SEP2020
21.	MAILAM INDIA LTD., PUDUCHERRY	MAILARC -18 PLUS	E7018-1	SEP2020
22.	MAILAM INDIA LTD., PUDUCHERRY	MAILARC -1 CR	E8018-B2	JUN2024
23.	MAILAM INDIA LTD., PUDUCHERRY	MAILARC -2 CR	E9018-B3	JUN2024
24.	RAJ KESARI ELECTRODES, UDAIPUR	SUPERLET 18	E7018	AUG2022
25.	RAJ KESARI ELECTRODES, UDAIPUR	SUPERLET 18 (SPL.)	E7018-1	AUG2022
26.	RAJ KESARI ELECTRODES, UDAIPUR	RAJCORD 13S	E6013	AUG2022
27.	RAJRATNA ELECTRODES, AHMEDABAD	RATNA 7018 SPL.	E7018-1	MAR2020
28.	RAJRATNA ELECTRODES, AHMEDABAD	RATNA 7018	E7018	NOV2023
29.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL THERM SPL.	E7018-1	SEP2021
30.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL CHROM 1	E8018-B2	FEB2023
31.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL CHROM 2	E9018-B3	FEB2023
32.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL THERM MOLY	E7018-A1	MAR2023
33.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL THERM	E7018	DEC2023
34.	ROYAL ARC ELECTRODES LTD, VASAI	ROYAL S	E6013	DEC2023
35.	SUPERON SCHWEISSTECHNIK INDIA LTD. DELHI	GARANT MO	E7018-A1	SEP2020
36.	SUPERON SCHWEISSTECHNIK INDIA LTD., DELHI	SUPER CROMO 1B	E8018-B2	DEC2020

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Sr. No.	Manufacturers	Brand name	AWS No.	Valid up to
37.	SUPERON SCHWEISSTECHNIK INDIA LTD., DELHI	SUPER CROMO 2B	E9018-B3	DEC2020
38.	VIJEY ELECTRODES & WIRES PVT. LTD., CHENNAI	VJ 6013 X	E6013	SEP2020
39.	VIJEY ELECTRODES & WIRES PVT. LTD., CHENNAI	VJ 7018	E7018	SEP2020
40.	VIJEY ELECTRODES & WIRES PVT. LTD., CHENNAI	VJ 7018 - 1	E7018-1	SEP2020
41.	WELD FAST ELECTRODES, NAGPUR	WELDFAST LH 18	E-7018	MAR2020
42.	WELD FAST ELECTRODES, NAGPUR	WELDFAST LH-18-1	E-7018-1	MAR2020
43.	WELD FAST ELECTRODES, NAGPUR	WELDFAST CROMO 0500	E7018-A1	FEB2023
44.	WELD FAST ELECTRODES, NAGPUR	WELDFAST CROMO 1500	E8018-B2	FEB2023
45.	WELD FAST ELECTRODES, NAGPUR	WELDFAST CROMO 2251	E9018-B3	FEB2023

The approvals are granted in conformance to the requirements stipulated in latest edition of ASME Section II Part C. However, batch qualification wherever called for in specific cases, will have to be carried out separately.

  
(Anoop Singh)  
ACE & Head QA (M-6)

Through: Shri A.K. Singh, AD (QA- Opns. & Group-1)

Executive Director (QA)

  
17.12.19



# न्यूक्लियर पावर कॉर्पोरेशन ऑफ इंडिया लिमिटेड

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Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.



## 2) LIST OF APPROVED STAINLESS STEEL & OTHER NI ALLOY ELECTRODES

(2 Pages)

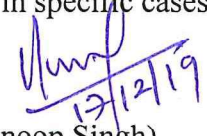
As on 17-12-2019

Sr. No.	MANUFACTURERS	BRAND NAME	AWS No.	VALID UPTO
1.	ADOR WELDING LTD., SILVASSA	BETANOX-DL	E 309L-16	SEP2020
2.	ADOR WELDING LTD., SILVASSA	SUPERINOX-2C	E 316L-16	SEP2020
3.	ADOR WELDING LTD., SILVASSA	SUPERINOX-1C	E 308L-16	SEP2020
4.	D&H INDIA LTD., INDORE	SV-308L	E 308L-15	DEC2022
5.	D&H INDIA LTD., INDORE	SV-309L	E 309L-15	DEC2022
6.	D&H INDIA LTD., INDORE	CROMALLOY-B	E 308L-16	DEC2022
7.	D&H INDIA LTD., INDORE	CROMALLOY 309L	E 309L-16	DEC2020
8.	ADOR FONTECH, BENGALURU	LH 511	E Ni Cu7	OCT2020
9.	ADOR FONTECH, BENGALURU	LH 521	E Ni Cr Fe 3	OCT2020
10.	D&H SECHERON, INDORE	CRONITHERME 25/12	E 309-16	JUN2022
11.	D&H SECHERON, INDORE	RUTOX-D	E 316L-16	JUN2022
12.	D&H SECHERON, INDORE	BATOX-B	E 308L-15	JUN2020
13.	D&H SECHERON, INDORE	RUTOX-B	E 308L-16	JUN2020
14.	D&H SECHERON, INDORE	D&H 309L	E 309L-16	NOV2023
15.	D&H SECHERON, INDORE	D&H 1250	E NiCu-7	JAN2021
16.	D&H SECHERON, INDORE	D&H 1212NS	E NiCr Fe-3	JAN2021
17.	D&H SECHERON, INDORE	RUTOX-A	E 308-16	NOV2023
18.	D&H SECHERON, INDORE	RUTOX-A St	E 347-16	NOV2023
19.	D&H SECHERON, INDORE	RUTOX-Mo	E 316-16	NOV2023
20.	HONAVAR ELECTRODES, THANE	SILVER SHINE 308L-15	E 308L-15	FEB2024
21.	HONAVAR ELECTRODES, THANE	SILVER SHINE 316L	E 316L-16	FEB2024
22.	RAJRATNA ELECTRODES, AHMEDABAD	RATNA 308L	E 308L-16	MAR2020
23.	RAJRATNA ELECTRODES, AHMEDABAD	RATNA 316 L	E 316L-16	MAR2020
24.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-A	E 308-16	JUN2024
25.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-AL	E 308L-16	JUN2024
26.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-AL-15	E 308L-15	JUN2024
27.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-25/12	E 309-16	JUN2024
28.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-25/12-L	E 309L-16	JUN2024
29.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX-25/12-Mo	E 309 Mo-16	JUN2024
30.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX Mo	E 316-16	JUN2024
31.	MAILAM INDIA LTD., PUDUCHERRY	MAILEX MoL	E 316L-16	JUN2024
32.	ROYAL ARC ELECTRODES, VASAI,	ROYAL 1C	E 308L-16	OCT2024
33.	ROYAL ARC ELECTRODES, VASAI,	ROYAL 2C	E 316L-16	OCT2024

*[Handwritten signature]*

Sr. No.	MANUFACTURERS	BRAND NAME	AWS No.	VALID UPTO
34.	ROYAL ARC ELECTRODES, VASAI,	ROYAL-D2L	E 309L-16	OCT2024
35.	WELD FAST ELECTRODES, NAGPUR	WELDFAST 308L	E 308L-16	JAN2021
36.	WELD FAST ELECTRODES, NAGPUR	WELDFAST 316L	E 316L-16	JAN2021
37.	WELD FAST ELECTRODES, NAGPUR	WELDFAST 309L	E 309L-16	JAN2021
38.	WELD FAST ELECTRODES, NAGPUR	WELDFAST 309MoL	E 309LMo-16	JAN2021

The approvals are granted in conformance to the requirements stipulated in latest edition of ASME Section II Part C. However, batch qualification wherever called for in specific cases, will have to be carried out separately.

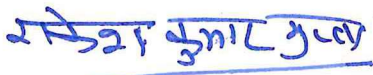
  
(Anoop Singh)  
ACE & Head QA (M-6)

Through: Shri A.K. Singh, AD (QA- Opns. & Group-1)

  
17/12/19

  
17/12/19

Executive Director (QA)

  
17-12-19





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Directorate of Quality Assurance

नाभिकीय ऊर्जा भवन, अणुशक्तिनगर, मुंबई-400 094

Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai - 400 094.



## 3) LIST OF APPROVED BRANDS OF WIRE AND WIRE FLUX COMBINATION

(1 Page)

As on 17-12-2019

Sr. No.	MANUFACTURERS	BRAND NAME	AWS No.	VALID UPTO
1.	ADOR FONTECH, BENGALURU	TIG 120	ER 308L	OCT2024
2.	ADOR FONTECH, BENGALURU	TIG 121	ER 316L	OCT2024
3.	ADOR FONTECH, BENGALURU	TIG 123	ER 309L	OCT2024
4.	ADOR FONTECH, BENGALURU	TIG 120S	ER 347	OCT2024
5.	ADOR FONTECH, BENGALURU	TIG 521	ER NiCr3	OCT2024
6.	ADOR WELDING LTD., SILVASSA	TIGFIL 70S-2	ER 70S-2	FEB2022
7.	ADOR WELDING LTD., SILVASSA	TIGINOX-308L	ER 308L	SEP2020
8.	ADOR WELDING LTD., SILVASSA	TIGINOX-309L	ER309L	SEP2020
9.	ADOR WELDING LTD., SILVASSA	AUTOMIG 70-S6	ER 70S-6	DEC2023
10.	ADOR WELDING LTD., SILVASSA	AUTOMELT-B71 AUTOMELT-EH 14 WIRE	F7A2-EH14	FEB2024
11.	D&H INDIA LTD., INDORE	SUPER TIG 308L	ER 308L	DEC2020
12.	D&H INDIA LTD., INDORE	SUPER TIG 309L	ER 309L	DEC2020
13.	D&H SECHERON, INDORE	FILLER WIRE FW 308L	ER 308L	FEB2021
14.	D&H SECHERON, INDORE	FILLER WIRE FW 309L	ER 309L	FEB2021
15.	D&H SECHERON, INDORE	F 70 S2	ER 70S-2	JUN2022
16.	RAJRATNA ELECTRODES, AHMEDABAD	RAAJTIG ER 308L	ER 308L	MAR2020
17.	RAJRATNA ELECTRODES, AHMEDABAD	RAAJTIG ER 316L	ER 316L	MAR2020
18.	VENUS WIRES, KHOPOLI	VENUS 308L	ER 308L	SEP2021
19.	VENUS WIRES, KHOPOLI	VENUS 316L	ER 309L	SEP2021
20.	VENUS WIRES, KHOPOLI	VENUS 309L	ER 316L	SEP2021
21.	VENUS WIRES, KHOPOLI	VENUS 347	ER 347	SEP2021
22.	WELD FAST ELECTRODES, NAGPUR	TIG FAST-3	ER 70S-2	JAN2021
23.	WELD FAST ELECTRODES, NAGPUR	MIG FAST-1	ER 70S-6	JAN2021

The approvals are granted in conformance to the requirements stipulated in latest edition of ASME Section II Part C. However, batch qualification wherever called for in specific cases, will have to be carried out separately.

(Anoop Singh)  
ACE & Head QA (M-6)

Through: Shri A.K. Singh, AD (QA- Opns. & Group-1)

Executive Director (QA)

रविशंकर गुप्ता 13-12-19

कमलेश्वर गुप्ता 17/12/19

श्री: 17/12/19