

#### BHARAT HEAVY ELECTRICALS LIMITED

CORPORATE RESEARCH & DEVELOPMENT DIVISION VIKASNAGAR, HYDERABAD - 500 093, INDIA

PHONES:23774494 (EXT:9804)
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**ENQUIRY** 

Ref: 352201171 Date 18-11-2022

#### **Enquiry for Aluminum ES Drive Housing**

Enquiry No:352201171 Enquiry Date: 18-11-2022 Due Date: 29-11-2022 Indicative Delivery Date: 31-03-2023

S1.No	Item Description	Unit	Qty
1	Aluminum ES Drive Housing GSM- 420	NO	2

Please submit your quotation for the above material in sealed cover superscribed with enquiry no, enquiry date and due date subject to our enclosed terms and conditions. The quotations shall reach us on or before the due date by 12 noon. The tenders can also be dropped in the tender box kept at the security gate,BHEL R&D. In case you are not in position to submit the offer,please send reply suitably specifying the reasons.

Sl.No	Description	Document Ref.
01	Enquiry, PQC, General Terms & Conditions, Commercial Terms & Conditions etc.	Volume - 1
02	Technical specifications, Scope of Supply etc.	Volume - 2

Ajay Kumar Muske Dy Manager ajaykumarm@bhel.in



## **ENQUIRY & QUALIFYING CRITERIA**

Volume - 1 Enquiry No 352201171

Aluminum ES Drive Housing

1	Tendor inviting officer / Authority, Designation and Address	Additional General Manager(MM) BHEL R & D, Vikas Nagar (Near Balanagar), Hyderabad -500093	
2	Item Description - Qty	1) Aluminum ES Drive Housing GSM- 420 - 2 NO	
3	Enquiry Reference no.	352201171	
4	Indicative Delivery Date	31-03-2023	
5	Due date, Time and place for submission of tender	29-11-2022 upto 12 noon. Sealed Quotations shall be addressed to Additional General Manager(MM), BHEL R & D Division, Vikas Nagar (Near Balanagar), Hyderabad AP,India Pin - 500 093 Quotations can also be deposited in the Tender box located at Security Gate of BHEL R & D BHEL shall not be responsible for any postal/courier delay.	
6	Place, Date and time of Tech.Bid opening	Tender Opening Cell (Sangam) BHEL R & D Office. 29-11-2022, 2 PM	
7	Mode of Submission of Tender	Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below.  1) First Cover shall contain:  a. Signed General Terms & Conditions (GTC)  b. Filled and Signed Commercial Terms & Conditions (CTC)  c. Filled and Signed Vendor Specifications against BHEL  Specifications (Item wise)  d. Signed commercial bid  e. Copy of Price-bid with price(s) cells blank (un-priced price bid) as per annexure  2) Second cover shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure.  If the price bid was found later to be different from the unpriced pricebid format in any way, the offer will be rejected summarily. The rates shall be quoted both in figures and in words.  The offers can also be submitted through e-mail and have to be sent in PDF format (files with PDF extension only). Files having extensions other than PDF like RAR, EXE,JPEG etc. and with external links will not be considered. They have to be sent to e-mail id: 'rnd-eoffers@bhel.in' only. Copies should not be marked to anyone. If the offers are marked to anyone other than to eoffers, their offer will not be considered.  The e-mail offers should have two attachments.	

- 1) One attachment shall contain
- a. Signed General Terms & Conditions (GTC)
- b. Filled and Signed Commercial Terms & Conditions (CTC)
- c. Filled and Signed Vendor Specifications against BHEL Specifications (Item wise)
  - d. Signed commercial bid
- e. Copy of Price-bid with price(s) cells blank (un-priced price bid), as per annexure
- 2) Second attachment shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure.

The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.



## PRE QUALIFYING CRITERIA(PQC)

Volume - 1 Enquiry No 352201171

Aluminum ES Drive Housing

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Qualifying Criteria	Supplier shall have done casted aluminum enclosures/chambers/housing/or equivalent for Gas Insulated Substation or tested for High pressure. Suppliers shall submit at least one purchase order copy as reference which should be within last seven years from the date of this enquiry.	
2		•	
3			
4			
	elaxation of orms for Startups	The condition of Prior Turnover and prior experience is relaxed for all startups whether Micro & Small Enterprises(MSEs) or otherwise subject to meeting of quality and technical specifications in accordance with the relevant provision of GFR,2005 and other DOE-PPD notifications for relaxation norms for startups issued from time to time.	



## GENERAL TERMS & CONDITIONS (GTC)

Volume - 1 Enquiry No 352201171

Aluminum ES Drive Housing

SL.No.	Clause	BHEL REQUIREMENT	
		The bidder may also be a Micro and Small Enterprises (MSE) vendor registered as per MSE act. As per the public procurement policy notified by the Central government.	
		25% of the tendered quantity is earmarked for MSE suppliers in this tender. Out of the 25% tendered quantity reserved for MSE suppliers, 6.25% shall be earmarked for procurement from MSE owned by SC / ST entrepreneurs. Also 3% shall be earmarked for procurement from MSE owned by women.	
		The definition of MSEs owned by women Entrepreneurs is clarified as under: i. In case of proprietary MSE, Proprietor shall be woman ii. In case of partnership MSE, the women partners shall be holding at least 51% share	
		in the unit. iii. In case of private limited companies, at least 51% shall be held by Women Promoters. (Such enterprise will have to submit relevant document for proof of women ownership	
		during offer submission)	
		In case MSE vendor participating in the tender quotes within the price band of L1 + 15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.	
1	Preferences to MSEs	"MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM, II) or valid NSIC certificate or EM II certificate with due validity or Udyog Aadhar Number along with attested copy of a CA certificate (where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid).	
		Non submission of such documents will lead to consideration of their bid at par with other bidders. In case any improper / lack of documents is there vendor on their own interest may submit all the relevant documents as stated above, before tender opening. No benefit shall be applicable for this enquiry if any deficiencies in the above required documents are not submitted before tender opening.  Documents should be notarized or attested by a Gazetted officer for consideration of MSE certificate."	
		Such Micro/Small Enterprises registered vendors must state the sub-category to which they belong and submit documentary proof for the same.  The sub-categories:  (a) Enterprises owned by Scheduled Castes.	
		(b) Enterprises owned by Scheduled Tribes. (c) Enterprises owned by other than above two categories	
		The enterprises under (a) & (b) means the proprietor in case of single owned firm and all partners in case of partnership firm and all directors in case of private/public limited must belong to SC/ST category (Such enterprise will have to submit relevant document	

		for proof of SC/ST category during offer submission) (Note: vendor need to go through General note Of tender condition also for any special instruction & deviation from above.)  If more than one valid MSE supplier stands with in rage of L1+15% range, 25% of quantity will be shared till quantity split is feasible & rest of 25% will be awarded to lowest quote of valid MSE supplier.
2	Preference to Make in India	For this procurement, the local content to categorize a supplier as a Class 1 Local supplier / Class II Local supplier/ Non-Local supplier and purchase preference to Class 1 Local supplier, is as defined in Public Procurement (preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT.  In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT
		Following documents to be submitted by Bidders along with offer:
Details required with offer  a. PAN Number b. GSTIN Registration Status c. Name of the Contact Person d. Contact Phone / Mobile e. Email id for correspondence f. Address with PIN code and State		
4	GST Clause	1) Taxes and duties to be governed by GST acts. Strict adherence to new provisions by the vendors like timely submission of invoices, tax payment, filing of returns-GSTR-I etc. will form base of new regime for release of payment from BHEL. Hence, any financial loss occurred due to non-compliance of the GST provisions would be endured at defaulter ♠s end.  2) In case GST credit is delayed/ denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of time line 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.  3) 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.  4) Vendor to ensure correct applicability of IGST/CGST/SGST/UTGST based on the Inter / Intra state movement Supply of goods and services or both. d) Taxes and duties prevalent on the contractual delivery date or the actual delivery date (in case of delay) whichever is lower shall be applicable paid. Composition Scheme to be addressed.  5) Vendor shall note that the Invoice has to be raised quoting HSN Code of Goods or Accounting Code of Services or both wherever applicable.  6) Invoice should mention GSTIN of BHEL R&D as mentioned in PO/LO Corporate R&D GST Registration numbers: GST compliant invoice shall mention the GST registration number of Corporate R&D: 36AAACB4146P1ZG  7) Supplier shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be cl

1		in part 1 bid.
5	Cartelization clause  The Bidder declares that they will not enter into any illegal or undisclosed agree understanding, whether formal or informal with other Bidder(s). This apparticular to prices, specifications, certifications, subsidiary contracts, subminon-submission of bids or any other actions to restrict competitiveness or to in cartelization in the bidding process. In case, the Bidder is found having indiabove activities, suitable action shall be taken by BHEL as per extant guidelines.	
by either party of any obligations under the contract is prevented or delayed of any war, hostilities, acts of the public enemy, civil commotion, sabore explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter revents) and notice of happening of any such events is given by either particulars of such events be entitled to terminate the contract. If the performance or part of any obligation under this contract is prevented or delayed by occurrence of such events, then claims for extension of time shall be granted considered reasonable by the purchaser subject to prompt notification by the purchaser the particulars of the events, if required with supporting evidence. Of time in respect of partial instalment shall not be deemed to be a waiver		If at any time during the continuance of the contract the performance in whole or in part by either party of any obligations under the contract is prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) and notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof then neither party shall by reason of such events be entitled to terminate the contract. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason of occurrence of such events, then claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser the particulars of the events, if required with supporting evidence. Any waiver of time in respect of partial instalment shall not be deemed to be a waiver of time in respect of remaining deliveries
7	Firm Prices	The prices shall be firm for entire period of contract.
8	Restrictions under rule 144 (xi) of the GFR	Submit the Annexure (provided along with enquiry documents) in your company letter head
9	MSE Supplier	MSE suppliers can avail the intended benefits (Tender documents fee of cost, exemption of EMD) only if they submit along with the offer, attested copies of either valid NSIC certificate or Udyam Registration certificate along with attested copy of a CA certificate (Format enclosed below) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e- procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.  Certificate by Chartered Accountant on letter head for MSME bidder This is to Certify that M/S  Output that Output that M/S  Output that M/S  Output that M/S  Output

		Medium Enterprises vide its notification No. S.O.2119 (E) Dated: 26.06.2020 is ?
		3. The above investment in plant and machinery or equipment is within the permissible limit of ?������. Lacs and Turnover is within the permissible limit of ?����. Lacs applicable for����. Micro / Small / Medium (Strike off which is not applicable) Category under MSMED Act 2006.
		Date: (Signature) Name • Membership Number • Seal of Chartered Accountant.
10	Late Tenders	Tenders received after due date/time(12:00hrs) will not be considered
11	Descrepancy in words and figures	(a) 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.  (b) 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  (c). 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.  (d) 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.
12		In the case of Two-part bid, the vendor should furnish technical and commercial clarifications, if any, within stipulated time mentioned, failing which, it will be construed that the vendor is not interested in the tender and BHEL shall not consider the offer for further evaluation.
13	Price Impacts	In the event of any bidder, after finalizing the technical specifications and scope of supply, opting to revise their original bid, they have to submit the Price-Impact only. The Original price bid along with Price-Impact bid shall be opened during price bid opening. Unsolicited price impacts will not be considered.
14	Packing	The supplier shall be responsible for the goods being properly and adequately packed so as to prevent any loss, damage or deterioration during transit.
15	Withdrawal	In case the supplier withdraws their offer before placement of order, BHEL reserves the right not to send next enquiry(ies). In case the supplier withdraws the quotation after its acceptance by BHEL or fails to supply the goods as per the terms and conditions of contract, or at any time repudiated the contract wholly or in part, BHEL shall be at liberty to cancel the Purchase Order and to recover from the supplier the extra cost and other loss, incidentals due to the breach of contract on the part of the supplier through risk purchase.
16	Risk Purchase	In case of default/late delivery,BHEL reserves the right to make alternate arrangement for procurement at suppliers risk and cost.
17	Banned List	The offers of the bidders who are in the banned list and the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.  Guidelines for suspension of business dealings with suppliers/contractors are available

		on www.bhel.com under supplier registration page	
18	Over All L1	Order will be placed on overall L1 basis. Vendors should quote for all items, otherwise the offer will be rejected.	
19	Additional Information	Suppliers are requested to visit our web site regularly for any updates and additional information, "All corrigenda, addenda, amendments, time extensions clarifications, etc. to the tender will be hosted on BHEL website only". The corrigendum will not be published in news paper.	
20	Arbitration	Subject to the exclusive jurisdiction of the Medchal, Malkajgiri Courts, Telengana State, India, in respect of any suit or other legal proceedings relating to this contract.	
21	Fraud Prevention Policy	The Bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.	
22	Signing & Stamping	Documents of BHEL's all Terms and conditions submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder	

Documents submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder

Read and agreed for all the above general terms and conditions



#### **COMMERCIAL TERMS & CONDITIONS (CTC)**

Volume - 1 Enquiry No 352201171

Aluminum ES Drive Housing

SL.No.	No I Clause I BHEL REQUIREMENT I		SUPPLIERS ACCEPTANCE / REMARKS
1	Payment terms for Indian Offers	Vendor to indicate appropriate applicable HSN code for Goods as well as SAC for services based on Inter/Intra state. In case the bidder has opted for composite GST scheme, the same may be stated explicitly in both and techno-Commercial & Price bids.  BHEL will pay only basic price to the vendor and release the GST payment only when the proof of remittance is given.	
2	Validity of Offer	90 days from date of technocommercial bid opening.	
3	In case the goods enquired are on Rate Contract basis with any other unit of BHEL, such fact should be clearly indicated in the quotation giving full particulars of Rate Contract number,		

<u>Note</u>: All the clauses of the above format should be filled and submitted with the Techno Commercial Bid (Part-1). The filled in BHEL Commercial terms & Conditions format submitted with technical bid, responding to all the clauses duly signed with seal **only shall be considered**. Any other Commercial terms & conditions of bidders entered else where in their offer shall not be considered and are liable for rejection.

Read and understood the above commercial terms and conditions



### **OTHER TERMS & CONDITIONS**

Volume - 1 Enquiry No 352201171

Aluminum ES Drive Housing

SL.No.	No. Clause BHEL REQUIREMENT		SUPPLIERS ACCEPTANCE / REMARKS
1	Price Basis All Indian suppliers shall quote the lowest prices on 'free delivery at BHEL R&D Stores or F.O.R destination' basis only.		
2	Destination	Destination shall be Stores,BHEL R&D, Vikasnagar, Hyderabad-500093	
		Suppliers are requested to quote within the delivery date mentioned in the enquiry. They shall also mention one of the following delivery periods compulsorily. 1) Delivery Period from date of Purchase order	
3	Delivery	Delivery Period from receipt of material / input data / drawings etc. from  BHEL====================================	
	Period	(if applicable) 3) Delivery Period from receipt of approval of design documents / drawings etc. by BHEL====================================	
		applicable) However BHEL shall inform the vendor about rejection of the offer before price bid opening in case of not meeting the delivery requirements of BHEL.	
4	Failure to supply the goods and/or Failure to carryout the services within the stipulated delivery date will attract a penality of 0.5% per week or part thereof for the value of the undelivered portion of the purchase order subject to a maximum of 10% of the total order value. In case of non acceptance to this LD Clause, 10% of basic material cost will be loaded on the quoted prices while cost comparison.(Please refer the enclosed 'Loading Factors' sheet).		
5	Price Bid Evaluation	All offers in price bid opening or reverse auction shall be evaluated in Indian currency based on unit price, packing & forwarding, taxes/duties, freight charges if any. Loading due to non-acceptance of our standard commercial terms will be evaluated as per the LOADING FACTORS form as enclosed along with the enquiry.	
6	Terms of Payment 100% of Supply Value will be paid by EFT/RTGS within 30 days of receipt and acceptance of material at BHEL R&D Stores, Hyderabad. Taxes will be reimbursed against submission of proof of remittance of Taxes to govt. of India.		
7	Taxes & Duties	Indicate the applicable taxes and duties.	



#### ITEM SPECIFICATIONS

Volume - 2 Enquiry NO 352201171

Aluminum ES Drive Housing

SL.No.	Item	Item		
1	Alur	Aluminum ES Drive Housing GSM- 420		
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
		Aluminum ES Drive Housing GSM- 420	AS PER DRG. NO. 45027500175A & SPEC. PSGSG/2020-2021/004, REV 00. DT. 02.11.2022	
		Warranty clause	Supplier shall comply to the 12-month warranty period from the date of receipt and acceptance of material at BHEL R&D	
		PDI	Inspection shall be carried out in presence of BHEL inspector or through virtual mode. The Vendor shall give minimum of 7 days' notice for inspection along with internal test certificates.	

 $<sup>\</sup>ast$  Vendors are advised to write specifications in detail and not to write like 'Complied/ Yes / No ' etc. in specifications.

BHEL R&D RD:DP:MPX:F-22

### **LOADING FACTORS**



 $NOTE: IN\ CASE\ OF\ DEVIATION\ TO\ BHEL\ TENDER\ SPECIFIED\ TERMS,\ LOADING\ FACTOR\ INDICATED\ IN\ FOLLOWING\ TABLE\ WILL\ BE\ APPLIED\ TO\ QUOTED\ PRICE\ WHILE\ EVALUATING\ THE\ LOWEST\ QUOTE$ 

	A. FOR INDIGENOUS PURCHASES					
SLNO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS	
				SAME	NIL	
A.1		TERMS	100% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AT BHEL R& D	PAYMENT AGAINST PROFORMA INVOICE / DESPATCH DOCUMENTS	LOADING @(SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON THE TOTAL PO VALUE FOR ONE MONTH	
				INTEREST BEARING PART ADVANCE (MAXIMUM 5% @SBI BASE RATE ON TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE AND BALANCE PAYMENT WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL	LOADING @((SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH	
				INTEREST BEARING PART ADVANCE (MAXIMUM 5% @SBI BASE RATE ON TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON BALANCE AMOUNT FOR ONE MONTH	
	ì		i	SAME	NIL	
		PAYMENT TERMS	90% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AND BALANCE 10% WITH IN 30 DAYS OF COMPLETION OF E&C.	100% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF SUPPLIES AND E&C	NIL	
				90% PAYMENT AGAINST PROFORMA INVOICE/ DESPATCH DOCUMENT AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C.	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON 90% OF THE VALUE OF PO FOR ONE MONTH	
A.2				90% PAYMENT AGAINST PROFORMA / DESPATCH DOCUMENT AND BALANCE 10% AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON TOTAL VALUE OF THE PO FOR ONE MONTH	
				INTEREST BEARING PART ADVANCE (MAXIMUM 5% @SBI BASE RATE ON TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE AND (90 -X) % PAYMENT ON RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%)FOR THE DELIVERY PERIOD(ROUNDED OF TO THE NEAREST MONTH)+ I MONTH AND LOADING @ ((SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE (90-X)% AMOUNT FOR ONE MONTH	
				INTEREST BEARING PART ADVANCE (MAXIMUM 5% @SBI BASE RATE ON TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE AND BALANCE (90 - X) % PAYMENT AFTER RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT AFTER COMPLETION OF E&C	LOADING @( (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON THE PART ADVANCE AMOUNT (X%)FOR THE DELIVERY PERIOD(ROUNDED OFF TO THE NEAREST MONTH)+ 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON BALANCE AMOUNT (100-X)% FOR ONE MONTH	

	B. FOR FOREIGN PURCHASES (IMPORTED)				
SLNO	SCOPE	COMMERCI TERMS	AL BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
		PAYMENT TERMS		SAME SIGHT DRAFT ON PRESENTATION DESPATCH DOCUMENTS VIZ INVOICE, AWB ETC TO OUR BANI	OPENING DA 1E+6%) ON THE BASIC VALUE FOR ONE MONTH PLUS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL
				LC PAYMENT AGAINST DESPATO DOCUMENTS	H LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
B.1			100% PAYMENT BY WIRE TRANSFER WITHIN 30 DA FROM THE DATE OF REC. AND ACCEPTANCE OF MATERIAL AT BHEL R&E (DESPATCH DOCUMENTS WILL BE SENT TO BHEL I DIRECTLY ALONG WITH BANK DETAILS)	(MAXIMUM 5% @SBI BASE RATE TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE BY WIRE TRANSFER AND BALANCE PAYMENT WITH I	NCE ON LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY (ROUNDED OFF TO NEAREST MONTH) + 1 MONTH PLUS LC RELATED
				INTEREST BEARING PART ADVAI (MAXIMUM 5% @SBI BASE RATE TENDER OPENING DATE+ 6%) PAYMENT WITH 110% BANK GUARANTEE BY WIRE TRANSFEF AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	ON ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO NEAREST MONTH) + 1 MONTH AND
				SAME	NIL
					OPENING DATE+6%) FOR ONE MONTH PLUS KERS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL
	SUPPLY OF EQUIPMENT INCLUDING ERECTION AND COMMISSIONING ( E&C )			AGAINST DESPATCH DOCUMENT BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				90% PAYMENT BY WIRE TRANSFI LC AGAINST DESPATCH DOCUMENTS. BALANCE 10% AFT COMPLETION OF E&C	OPENING DATE+6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				90% OF BASIC VALUE AS ADVAN PAYMENT BY WIRE TRANSFER /L WITH BANK GUARNTEE AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	C OPENING DATE+6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
B.2			90% PAYMENT BY WIRE TRANSFER WITH IN 30 DA FROM THE DATE OF REC AND ACCEPTANCE OF TH MATERIAL AND BALANC 10% WITH IN 30 DAYS AF	PAYMENT WITH 110% BANK GUARANTEE BY WIRE TRANSFER AND BALANCE 10% WITH IN 30 D	ON OPENING DATE+6%) ON 90% OF THE BASIC VALUE FOR DELIVERY PERIOD (ROUNDED OFF TO NEAREST MONTH) + ONE MONTH PLUS LC RELATED BANK CHARGES
			COMPLETION OF E&C	WIRE TRANSFER /LC AFTER RECI	ON OPENING DATE+ 6% ) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO NEAREST MONTH) + ONE MONTH AND I BY LOADING @ (SBI BASE RATE ON TENDER EIPT OPENING DATE+ 6% ) ON BALANCE (90-X)%
				AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT W IN 30 DAYS AFTER COMPLETION E&C	OF
				WIRE TRANSFER /LC AFTER RECH AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT AFTER COMPLETION OF E&C	ON OPENING DATE+ 6% ) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO NALC NEAREST MONTH) + ONE MONTH AND I BY LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6% ) ON BALANCE AMOUNT (100-X)% FOR ONE MONTH
ax -			LIVERY (COMMON FOR INDIGENOUS A	ND IMPORTS)  LOADING FACTOR FOR NON COMPLIANCE TO	
SLNO	LNO COMMERCIAL TERMS		N THE EVENT OF DELAY IN	AS OFFERED	BHEL STANDARD TERMS
	C LD CLAUSE		AGREED CONTRACTUAL	AGREED	NIL
С			HALF PERCENT) PER WEEK BUT LIMITED TO A MAX OF 10% OF TOTAL ORDER VALUE WILL BE APPLICABLE	IF NOT AGREED IF AGREED FOR X%	LOADING @ 10% OF THE BASIC MATERIAL COST LOADING @ ( 10-X)% OF THE BASIC MATERIAL COST
				PERIOD (COMMON FOR INDIGENOUS AN	
SLNO	COMMERCIAL T	ERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
			STIPULATED OR REQUIRED		

	GUARANTEE/WARRANTY		AGREED NOT AGREED FOR STIPULATED BUT	NIL
D	PERIOD	MINIMUM ACCEPTABLE GUARANTEE / WARRANTY PERIOD(Y)	CITAD ANTEE (STADD ANTEX (ST)	LOADING @ 10 % OF THE ORDER VALUE PER ANNUM FOR THE REDUCED GUARANTEE PERIOD (X-Y)

#### **BHEL R&D**

#### **Terms & Conditions of Reverse Auction**



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

- 1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- 2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
- 3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- 4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
- 5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
- 6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
- 7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g. EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 8. Reverse auction will be conducted on scheduled date & time.
- 9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
- 10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
- 11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL standard practice.
- 12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction?, which will be communicated before the Reverse Auction.
- 13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
- 14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
- 15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

#### **AUTHORISATION LETTER FOR E-PAYMENT/ NEFT / RTGS**

(PLEASE FILL UP THE FORM COMPLETELY IN CAPITAL LETTERS ON YOUR COMPANY LETTERHEAD ONLY)

Vendor Code (to be filled by BHEL)		
Type of Request (Tick one)	NEW	CHANGE
1 Company Name	INEW	CHANGE
2Address	+	
27 (udress		
3 City with PIN Code	1	
4State		
5 PAN Number		
6TIN/ VAT No.		
7CST No.		
8 Service Tax No.		
9 Name of Contact Person		
10 Mobile number		
11 Ph. no. with STD Code		
12 Fax No. with STD Code		
13 Email ID		
14 Website (URL)		
ANK DETAILS FOR EFT / RTGS		
Bank Name		
Branch		
Branch Code		
Branch Address		
Branch Phone No		
Account No.		
Account Type: SB/ Current/ other (Spec	eify)	
MICR Code		
IFSC Code		
2. Authorize BHEL R&D Hyderabad with bank charges, if any, to our action with bank charges and the same and the same and the same are same as a same and the same are same as a same are same are same as a same are sam	eque in support of our company's bar l, to electronically make payments to	nk details.  the designated bank accour

- 3. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- 4. I hereby certify that the particulars given above are true, complete and correct.
- 5. This authority remains in full force until BHEL receives and acknowledge written notification requesting change or cancellation.

Date:	Authorised Signatory
Company	
Saal	Designation:



## **Bharat Heavy Electricals Limited**

Corp. R&D DIVISION
VIKAS NAGAR,
HYDERABAD- 500 093 (INDIA)

#### **VENDOR REGISTRATION FORM**

(Indigenous supplier)

[FORM TO BE SUBMITTED\* BY THE BIDDER ALONG WITH TECHNICAL-BID]

		Before filling, please refe	r to instructions on page-
VENDOR PROFILE:			
1.1 Name and address of	the vendor:		
Phone Nos.: Fax No.:			
Email: 1.	name & address in	2. Hyderabad/Secundrabad :	
2 Local representative name & address in		i i i y dei abad, becandiabad.	
			. <del></del>
Phone Nos.:			
Phone Nos.: Fax No.:			
Phone Nos.: Fax No.: Email:			
Phone Nos.: Fax No.:			
Phone Nos.: Fax No.: Email: Contact Person:			
Phone Nos.: Fax No.: Email: Contact Person: Mobile No:		Sister Concern ( mention vendor re organization	
Phone Nos.: Fax No.: Email: Contact Person: Mobile No:  TYPE OF ORGANISA PROPRIETORSHIP	TION:	Sister Concern ( mention vendor re organization	

In case of SSI unit, copy of registration to be enclosed. It is requested that MSME registration certificate to be enclosed and tick the following:

Type of Major Activity: Manufacturing / Service

Category of Enterprise: Micro / Small / Medium
Social Category : GENERAL / SC / ST / OBC
Udyog Adhaar Number (UAN):

#### 3.0 ANNUAL TURN OVER:

#	Year	Turn-Over, Rs.
1	Current Year(budgeted)	
2	Previous year ( 200 - 0 )	
3	Prior Year ( 200 - 0 )	

#### 4.0 NAME AND ADDRESS OF THE BANKER:

- 4.1 Bank Name
- 4.2 Branch name
- 4.3 Account number
- 4.4 Account Type
- 4.5 MICR Code:
- 4.6 IFSC Code(RTGS/NEFT):
- 4.7 Bank Phone number(s),

Blank cheque, duly cancelled, to be enclosed.

Please note that all payments shall be made through Electronic clearance services to your above account against the orders executed, if any.

#### 5.0 REGISTRATION PARTICULARS (relevant copies to be enclosd)

- 5.1 IT Permanent Account No.(PAN):
- 5.2 State Sales Tax/VAT Registration No:
- 5.3 Central Sales Tax Registration No:
- 5.4 ED Registration No:
- 5.5 Service Tax Registration No:
- 5.6 PF Account No:
- 5.7 Labour Licence No:
- 5.8 ESI Account No:

#### **6.0 CONTACT PERSON:** S/Sri:

Designation: Phone / Mobile No:

#### 7.0 TOTAL NUMBER OF EMPLOYEES:

Graduates	Consultants		Workers	
(Engr/Scientists/Mgmt/Fin.)		Sup./Skilled	Semiskilled	Unskilled

#### 8.0 LIST OF PRODUCTS/ SERVICES OFFERED:

#	Products/ Services	Capacity
1		
2		
3		
4		
5		

#### 9.0 REFERENCE LIST:

(Only recognized public and private sector companies, attach if printed copy available)

#	Customer	Volume / Year
1		
2		
3		
4		
5		

#### 10.0 INFRASTRUCTURE / FACILITIES:

#	Facility (with specifications)	Age/ Year procured
1		
2		
3		
4		
5		

#### 11.0 REGISTRATION WITH OTHER BHEL UNIT/UNITS:

#	Unit	Registration No	Year
1			
2			
3			
4			

#### 12.0 ANY OTHER INFORMATION:

#### **DECLARATION:**

The information furnished above is true and authentic.

Ι,

<b>SEAL:</b>
DATE:

#### Note:

- 1. Registered bidders, having BHEL (R&D) registration no. or have submitted this format for registration, need not furnish this information again.
- 2. The competent authority reserves the right to accept or reject the registration.
- 3. Vendors approved for registration will be informed by mail / email, as convenient. A separate communication will be sent in case of non-registration also, citing reasons thereof.
- 4. BHEL reserves the right to take penal action as deemed fit if any of the information provided by the vendor(s) is found to be incorrect.
- 5. AGM, Head (MM) may be contacted for clarification/additional information on registration.

#### Instructions

1. Fill all items. Please mention "N.A." for items/ clauses not applicable.

- 2. Use A4 sheets for this document and the enclosures. Use of additional sheets is permitted if space provided is not adequate.
- 3. Attach copies of latest documents in respect of items 5.0 (Registration no.s)
- 4. Photographs of registered office and the chief executive/proprietor shall be furnished.



## **Bharat Heavy Electricals Limited**

# Corp. R&D DIVISION VIKAS NAGAR, HYDERABAD- 500 093 (INDIA)

#### SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

ALL COLUMNS SHOULD BE PROPERLY FILLED IN THE SPACE PROVIDED FOR WHEREVER IT IS NOT APPLICABLE PLEASE WRITE "NOT APPLICABLE".INCOMPLETE OR INCORRECT FORMS MAY NOT BE CONSIDERED.

#### 1.0 GENERAL INFORMATION:

#### 1.1 NAME OF COMPANY

#### 1.2 DETAILS OF HEAD OFFICE:

ADDRESS:
TELEPHONE:
FAX:
EMAIL:
WEB SITE:

#### 1.3 DETAILS OF FACTORY/WORKS:

ADDRESS:
TELEPHONE:
FAX:
EMAIL:
WEB SITE:

#### 1.4 DETAILS OF MARKETING AGENT

ADDRESS:
TELEPHONE:
FAX:
EMAIL:
WEB SITE:

#### 1.5 CHIEF EXECUTIVE

#### 1.6 CONTACT PERSON(S)

FOR PRODUCT OFFERED

NAME(S) :
OFFICIAL
CPACITY :
ADDRESS :
TELEPHONE :

FAX : EMAIL :

- 1.7 YEAR OF ESTABLISHMENT
- 1.8 PRODUCTION CAPACITY PER ANNUM
- 1.9 PARTICULARS OF PRODUCT INCLUDING SPECIFICATION AND RANGE OFFERED FOR REGISTRTION (Attach brouchers and catalogues)
- 1.10 NAME(S) OF BANKERS
- 1.11 BANKER'S CERTIFICATE
- 1.12 PORT OF LOADING
- 1.13 NEAREST AIRPORT
- 1.14 NAME OF THE INDIAN AGENT, IF ANY WITH AUTHORIZATION LETTER

#### 2.0 FINANCIAL INFORMATION:

- 2.1 TOTAL CAPACITY
- 2.2 ANNUAL TURN OVER FOR LAST 3 YEARS
- 2.3 WHEHER CREDIT LICENSE ACCEPTABLE YES/NO

#### 3.0 QUALITY MANAGEMENT SYSTEMS

**ENCLOSED FORMAT PART-B** 

3.1 EXPERIENCE LIST FOR SAME/ SIMILAR ITEMS TO BE ENCLOSED

#### **4.0 FUTURE EXPANSION PLANS:**

(Give details)

#### **5.0 LIST OF ENCLOSURES:**

(Including brouchers, catalogues, technical literature etc)

#### **6.0 ANY OTHER INFORMATION:**

SIGNATURE OF SUPPIER (Authorized signatory)

NAME : DESIGNATION : DATE :

#### OFFICIAL SEAL

#### Note:

- 1. BHEL Reserves the right to take penal action as deemed fit if any of the information provided by the vendor is found to be incorrect.
- 2. Please attach separate sheets, if space found is inadequate



RD:MPX:F-13

## **Bharat Heavy Electricals Limited**

## Corp. R&D DIVISION VIKAS NAGAR, HYDERABAD- 500 093 (INDIA)

Ph: 040 - 23772704, Fax: 040 - 23770698, email: mpx@bhelrnd.co.in

#### GUIDE LINES REGARDING DEALINGS WITH INDIAN AGENTS OF FOREIGN SUPPLIERS

- i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an indian agent, then the foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of an Agnecy Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in indian currency only.
- v. Whenever Indian agents are representing on behalf of their principals the relevent authorisation letter and agreement copy to be enclosed along with Technical bid to consider the offer.

## (Compliance to be submitted on the Bidder's Letterhead) (as applicable) Annexure-A

Sub: Compliance to Government of India order OM No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 regarding restrictions under Rule 144 (XI) of the General Financial Rules (GFRs), 2017

BHEL enquiry ref:	352201171
Our quotation ref:	

We, The Bidder have read and understood the contents of the office Memorandum & the Order (Public Procurement No. 1) both bearing no. F.No.6/18/2019/PPD of 23<sup>rd</sup> July 2020 issued by Ministry of Finance, Government of India on insertion of Rule 144 (Xi) in the General Financial Rules (GFRs) 2017 and the amendments & clarifications thereto, regarding restrictions on availing/procurement of goods and services, of any Bidder from a country which shares a land border with India and/or sub-contracting to contractors from such countries.

"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 (strikeout whichever is not applicable). I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached]".

(Note: Non-compliance of above said Gol Order and its subsequent amendment, (if any), by any bidder(s) shall lead for commercial rejection of their bids by BHEL).

For and behalf of _	(Name of the bidder)

(Signature, date & seal of authorized signatory of the bidder)

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## Specifications for Casted aluminum alloy enclosure

Drg. No.	
Date	02.11.2022
Product.	CGSM- 145, GSM-245,
Product	GSM-420

#### 1.0 APPLICATION:

Casted Aluminum alloy enclosure is used for gas filled applications. The gas pressure in this metal enclosure is maintained at 0.5-0.7 MPa. For Circuit breaker enclosure, gas pressure is maintained at 0.75-0.8 MPa.

#### 2.0 | SCOPE OF SUPPLY:

2 Nos. of Aluminum ES Drive Housing GSM- 420 as per Drg. No. 45027500175A

## 3.0 SPECIFICATIONS:

- **Material:** Aluminum alloy of AlSi7 Mg 0.3 T6 / A 356 or equivalent shall be used for casting. Please refer ISO Al-Si7Mg or European standard EN 1706 or equivalent for detailed material specifications. The Aluminum alloy selected for casting shall also be compatible to welding. Casting pattern shall be made of wood, metal or equivalent.
- The flanges shall be manufactured to drawings after casting only. The flanges shall be machined as per instructions and maintaining parallelality of faces and perpendicularity as prescribed. To ensure parallelity, it is must to machine the components after casting all the sections as prescribed. The flange sealing surfaces shall be polished to RA 0.8 or better and the bolting holes shall be machined fine, using jig borer/ CNC milling, and shall have uniform chamfer.
- The tolerances, wherever not mentioned in the drawing, shall be within 0.1°. Any sharp corners shall be removed as per the drawing. Wherever not specified in the drawing, a radius of R2 shall be provided at the sharp corners and edges. The supplier shall stress relieve tested component to ensure zero post supply deformation.
- The component shall be powder coated (> 80 Micron) as per colour specified in drawing or as specified by BHEL. During this operation all flanges shall be suitably masked at the sealing surfaces and at the rim / collar (avoid using grease, cotton waste).

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## Specifications for Casted aluminum alloy enclosure

Drg. No.	
Date	02.11.2022
Droduct	CGSM- 145, GSM-245,
Product	GSM-420

#### 4.0 ROUTINE TESTS:

- 4.1 The tested assembly should be cleaned, degreased and prepared for pressure test. The assembly shall be tested at 8.5 bar pressure (15 bar for Circuit breaker enclosure) for 4 hours and pressure drop shall be recorded and communicated to BHEL. In case of unallowable pressure drop (>0.1%), a coarse leak check shall be performed. The leak shall be rectified and the test repeated to satisfaction. Components indicating drop in pressure during this test will not be accepted.
- 4.2 The arrangement shall be kept at 15 bar (20 bar for circuit breaker enclosure) for 15 minutes prior to this test to verify pressure withstanding capabilities specified in drawing. Hydro test shall be conducted as per ASME section -8
- **4.3** Enclosure assembly shall be tested for Helium Leak test (1x10<sup>-5</sup> mbar-lit/sec) following IS standard 27895.

#### 4.4 NON-DESTRUCTIVE TESTING (NDT):

#### 1. Visual examination:

All the accessible surfaces of casting shall be inspected visually for any surface defects/cracks, especially in the zone of cross section transitions.

#### 2. Radiography inspection:

Radiographic inspection according to DIN EN 12681 around flanges of component (in the zone of cross sectional transitions) shall be conducted. **Acceptance shall be as per Level 3 of ASTM E155.** 

No linear indication/ crack in the radiographs shall be allowed.

Along with delivery of the components, the films are also to be sent to BHEL.

#### 3. Dye Penetrant test:

Dye penetration test shall be carried out as per the specification number AA0850131 on the machined/rough machined surface only. The acceptance norms shall be as per quality level II of specification no. AA0850132.

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## Specifications for Casted aluminum alloy enclosure

Drg. No.	
Date	02.11.2022
Droduct	CGSM- 145, GSM-245,
Product	GSM-420

#### 5.0 ACCEPTANCE CRITERIA:

- **5.1** Supplier has to give minimum 7 days intimation for PDI.
- 5.2 The dimensional checks and routine tests at clause no 4.0 (except 4.4, 2) of specification shall be carried out in presence of BHEL inspector or through virtual mode.
- **5.3** Following test certificates shall be furnished for acceptance of BHEL.
  - 1) Raw Material source certificate,
  - 2) Material test certificate,
  - 3) Dimensional Report as per drawing and to be witnessed by BHEL.
  - 4) Pressure drop test and pressure withstand test report
  - 5) NDT test report for Visual examination, Dye penetrant examination and radiographic examination, as per clause 4.4.

The certified copies of these documents shall be sent along with the delivery note.

#### 6.0 PACKING:

The accepted component shall be packed in wooden boxes with suitable PVC covers on the flanges to prevent transit damages. A thick polyethylene cover shall be used to seal to component from ingress of moisture and water. For transit time higher than 1-week, adequate quantity of moisture absorbent shall also be placed with the component.

#### 7.0 REWORK AND REJECTION:

Components not meeting our drawing and specification will be rejected and party has to replace within time. In the event of the material proving defective in the course of manufacturing; such material shall be rejected, in spite of any previous certification of satisfactory testing and/or inspection.

8.0 In case of doubts in specifications, the supplier shall contact BHEL for clarifications.

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