

 434-003	<h1>ENQUIRY</h1>	Bharat Heavy Electricals Limited (A Government of India undertaking) HIGH PRESSURE BOILER PLANT PURCHASE DEPARTMENT/VALVES TIRUCHIRAPPALLI-620 014.	Phone: 0431-2574032/7486 Email: subhashini@bheltry.co.in psmohanty@bheltry.co.in		
		ENQUIRY NO. RC –SAC-001	DATE 08.03.2016	DUE DATE FOR QUOTATION 29.03.2016	
Please quote Enquiry No., and due date in correspondences This is only a request for quotation and not an order.					
SL.NO.	MATERAIAL CODE DESCRIPTION	UNIT	QUANTITY	DELIVERY SCHEDULE	
	DRAWING NO TDC NO.			QUANTITY	DATE
	<p>SUPPLY OF GEAR BOXES(BEVEL GEAR TYPE-MULTI TURN) FOR VALVES ACTUATORS.</p> <p><u>{This enquiry is for Gear boxes (Bevel Gear type)}</u></p> <p>Offer for all the Gear boxes as per the specification</p> <p>The Price offered for all items must be on F.O.R –Trichy basis for indigenous vendors and FOB Nearest Sea/Air port for foreign vendors.</p> <p><u>Note:</u> Test Certificates are required Guarantee Certificate is required</p>			<p>AS PER ENCLOSED ANNEXURE-1</p> <p><u>Annexure:</u></p> <ol style="list-style-type: none"> 1. General terms & Conditions of Enquiry. 2. Scope of Supply &Special Conditions of contract. 3. Copy of Technical Delivery Condition. 4. Terms & Conditions for Indigenous/Import 5. Required Delivery: As mentioned in our annexure-1 <p><u>Date , Time & Venue of tender</u></p> <p>A)Techno-commercial Bid opening : 26.03.2016 at 14.30 IST at Tender Cell , Room No : 26, Building No 24,BHEL Tiruchirappalli-620 014,Tamil Nadu State, India.</p> <p>B) For techno-commercially suitable vendors, price bids will be opened after prior intimation.</p>	
<p>The rate of Excise Duty and Sales Tax, Prevalent on the date of quotation, should be clearly indicated in the quotation itself. If these particulars are not provided, the quotation is liable for rejection.</p> <p>Please, submit your lowest quotation in duplicate subject to our terms and conditions overleaf, for the above materials, so as to reach us on or before the due date by 2 P.M.</p> <p>Quotation will be opened at 2.30 p.m. on the due date in the presence of tenderers who may like to present .</p> <p>Last tenders are liable to be rejected.</p>				<p>Yours faithfully,</p> <p>For Bharat Heavy Electricals Ltd Sr Manager (Valves Purchase)</p>	



Bharat Heavy Electricals Ltd

**(A.Govt.of India Undertaking)
Valves Purchase,Tiruchirappalli- 620 014. INDIA**

e-mail:subhashini@bheltry.co.in

Tele: (0431)2574032

ANNEXURE – I

LIST OF GEAR BOXES, APPROXIMATE QUANTITY AND SPARES REQUIRED

Enquiry No : RC-SAC-001 dtd 08.03.2016

Trichy Requirement

Sl.No	Torque (Kg-M)	Thrust	QTY (approx.)
1	11	2700	25
2	35	6300	25
3	50	16000	25
4	75	10000	504
5	100	19000	76
6	150	20000	360
7	200	32000	140
8	300	35000	99
9	400	45000	10
10	600	63000	373
11	800	82000	20
12	1200	120000	78

Goindwal Requirement

Sl.No	Torque (Kg-M)	Thrust	QTY (approx.)
1	11	2700	10
2	35	6300	10
3	50	16000	120
4	75	10000	600
5	100	19000	10
6	150	20000	395
7	200	32000	100
8	300	35000	184
9	400	45000	10
10	600	63000	10
11	800	82000	40
12	1200	120000	10

- *The quantity indicated are indicative & approximate only*

The following specifications are enclosed for which the comments may be furnished in the relevant column provided

Purchase Specification for Gear Boxes : **MOU/TP-VALVE/VALVE GEAR BOX/ REV 00**

1. Kindly go through the enclosed specification MOU/TP-VALVE/VALVE GEAR BOX/ REV 00, and submit your competitive offer in with a validity of 18 months for ordering.

Confirmation shall be given to all the points mentioned in the Technical specifications. Deviations if any to the technical specifications shall be mentioned in a separate sheet.

2. The list of gear box and spares are mentioned in Annexure -I. Operational spares required as per the Spares list attached may be offered in the prescribed format enclosed. If any spares apart from the list is found necessary for smooth functioning of actuators the same may also be separately indicated and offered.
3. **This tender would be monitored by an Independent External monitor (IEM). The name of the IEM would be informed later.**
4. Your offer shall be supported by relevant technical documents like Quality plans, wiring diagrams, catalogues, leaflet, General arrangement drawings etc for technical evaluation and for getting customer approvals.

Annexure – I Gear boxes and spares List – to be filled and submitted along with the offer

CATEGORIES OF GEAR BOX AND SPARES LIST - ENQUIRY RC-SAC-001 dtd 08.03.2016				
GEAR BOX CATEGORIES				
	Standard Models			
SNo	Torque Range (Kg-M)	Model No	Rate	Remarks
001	11			
002	35			
003	50			
004	75			
005	100			
006	150			
007	200			
008	300			
009	400			
010	600			
011	800			
012	1200			

Spares List for enquiry RC-SAC-001

Note : If any spares apart from the list is found necessary for smooth functioning of actuators the same may also be separately indicated and offered.

Sl. No	General Description	Part no / Vendor description	Price	Remarks
1	ADAPTOR			
2	STEM PROTECTION COVER			
3	HAND WHEEL			
	THRUST BEARINGS			
5	THRUST BASE			



BHARAT HEAVY ELECTRICALS LTD

Valves/Purchase, Tiruchirappalli-620014, INDIA

Scope of Supply & Special condition

Phone: 0431 257 7486/4032

Email: psmohanty@bheltry.co.in

subhashini@bheltry.co.in

We require the Gear boxes (Bevel gear type) as per the technical delivery conditions for our production. Kindly send your competitive offer immediately for our consideration. The tender will be opened positively **on 29.03.2016 at 14.30 IST.**

1. Kindly go through the enclosed specification Nos: **MOU/TP-VALVE/VALVE GEAR BOX/ REV 00**, and submit your competitive offer in duplicate indicating compliance or deviation for each point of the specification with a validity of 1-1/2 years (18 months) for ordering.
2. You may have to submit the tender in two parts i.e. **Technical cum commercial bid in separate sealed cover and Price bid in another cover separately.** After technical conformance the price bid will be opened.
3. Your offer shall be supported by relevant technical documents like Quality plans, catalogues, leaflet, General arrangement drawings etc for technical evaluation and for getting customer approvals.
4. Operational spares required adaptors (drive sleeve) may be offered
5. Kindly quote your rates on firm price basis with the offer validity of minimum 1-1/2 years (18 months) from the date of finalisation of Rate Contract. The same shall be per unit basis for each item and on FOR, BHEL, Trichy for Indigenous vendors and FOB Nearest AIR/SEA Port for foreign vendors.
6. **Only Manufacturers are eligible to participate in this bid. Traders & Dealers are not eligible to participate in this bid. If authorized dealer of a manufacturer is participating in the bid they have to furnish the mutually signed Agency Agreement.**
7. Kindly quote for enclosed specification or equivalent that meets Technical Delivery Conditions (copy attached).
8. The quantity indicated are approximate only.
9. The purchase orders will be released based on our production plan periodically based on the delivery requirement in the same. Offers not meeting this delivery will not be considered.
10. Prices shall be firm till entire execution of the Purchase Order. Price variation clause is not acceptable.
11. Lowest prices received against BHEL enquiries need not be the technically acceptable one and in that case, BHEL reserves the right not to consider the same.
12. Supplier's has to submit test reports for each sl nos as per our TDC conditions and packing also to be done for each item separately
13. **.For indigenous vendors:-**100% payment will be made after 45 days on acceptance of material at BHEL Stores. No other Payment term is acceptable to BHEL.



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14. **For Foreign vendors:-**100% Payment against this contract will be made to the seller on collection basis. You have to send the documents to our banker M/S. State Bank of India, Kailasapuram, Tiruchirappalli-620014. The original clean HAWB(in case of Air)/Original Bill of Lading(In case of Ship) issued by our forwarding agency ,original invoice, Packing list with your signature, Certificate of origin, Test certificates as per respective TDC Etc are to be sent in triplicate to our bankers.
15. One copy of Test certificates/non negotiable documents shall accompany the dispatches.
16. Delivery schedule shall be strictly as per BHEL requirements only which is indicated in the Enquiry / Purchase Order sheet that will be issued. In case of delay in delivery, beyond the end delivery dates given in the Purchase Order sheet, Liquidated Damage clause will be applicable at the rate of 0.5 % of the total order value per week or part there of subject to a maximum of 10% of the total order value. For staggered delivery schedule , LD shall be 0.5% of the undelivered portion per week of the delay or part there of subject to a maximum of 10% of the total order value.
17. The delivery of the item shall be strictly as per BHEL's enquiry/ Purchase orders. In case of urgency, the delivery period have to be altered to meet BHEL's production plan.
18. Confirmation for compliance is to be given in the offer for all the conditions specified in the respective Technical Deliver Conditions.
19. Highest rate bidder will not be considered for this tender. BHEL reserves the right to counter-offer with vendors other than L1, in order to have broader vendor base for ensuring delivery. The loading pattern will be followed as furnished below as an example:
 - a. If one vendor alone accepting the counter offer rates, loading shall be 60:40 on L1:L2.
 - b. If L2 & L3 vendors are accepting the counter offer rates, loading shall be 50:30:20 on L1:L2:L3.
 - c. If L2 ,L3 & L4 vendors are accepting the counter offer rates, loading shall be 40:30:20 :10 on L1:L2:L3 & L4.
 - d. However, loading shall be based on specific vendor requirement by the customer.
20. Every dispatch of material shall accompany the packing list, detailing the Numbers of items. An advance Copy of dispatch details shall be furnished to purchase/Valves/BHEL/Tiruchy-14.
21. The materials are to be dispatched with proper packing and binding.
22. BHEL reserves the right to finalize the tender either through **price bid open** or **through Reverse Auction route**. A typical copy of "Business Rules and Conditions" of Reverse Auction is enclosed herewith for information and reference.
23. The offers are invited in two parts.
24. Techno commercial bid covering Technical Conditions, Delivery conditions, acceptance of all our commercial conditions and a copy of unpriced price bid. **(Please submit a separate envelope super scribing the enquiry no for techno commercial bid)**.



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25. **The vendors already under MOU (covered in our approved vendor list) have to submit the compliance of Specification and the commercial condition exclusively in this NIT separately.**
26. Price bid covering only unit price each case. **(Please submit a separate envelope super scribing the enquiry no for price bid.)**
27. Techno Commercial bid will be opened first. Price bid of technically suitable vendors only will be opened with prior intimation.
28. If the supply is short the extra cost to BHEL in replenishing the short fall will be debited to the vendor.
29. In addition to all the above conditions, BHEL standard terms & conditions given as a separate annexure shall also be applicable to the extent they are not superseded by the above conditions.
30. **Non-adherence to these special conditions of enquiry and BHEL's standard terms and conditions will lead to disqualification of offer.**
31. **The tenders may be dropped in the tender box is placed in the location in**
[TENDER ROOM NO-26, BUILDING 24,](#)
[HIGH PRESSURE BOILER PLANT](#)
[BHARAT HEAVY ELECTRICALS LIMITED](#)
[TIRUCHIRAPPALLI - 620 014, TAMILNADU, INDIA](#)

GENERAL TERMS AND 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 ON INTERNET.

- a. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- b. 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.
- c. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
- d. Business rules like event date, time, and Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
- e. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
- f. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
- g. Reverse auction will be conducted on scheduled date & time.
- h. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
- i. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
- j. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.

Note For vendors who are not in our list of approved vendors:-



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Vendors who are not in our list of approved vendors are required to full fill the following conditions.

- The vendors should submit the offers along with duly filled vendor registration forms which can be down loaded from our website www.bhel.com. Vendors should also apply through the web and furnish the reference no in the hard copy also. Offer without the above forms & the relevant supporting documents will not be considered for technical evaluation.
- For indigenous sources, BHEL team shall visit the vendor works to enlist them in our vendor directory and then their offer will be technically evaluated.
- The import sources will be enlisted in our vendor directory based on D & B (M/s DUN & Bradstreet) statement & filled in Vendor registration forms and then their offer will be technically evaluated
- The vendor should submit credentials of supplying their products for a minimum of 3 years to 2 power plants
- The vendor should also submit credentials of supplying their products to other similar valve manufacturers.
- The vendor should support the technical suitability with Endurance Certificates

Along with the offer (Technical/Commercial bid and price bid in two separate sealed covers) you are requested to indicate from whom you are going to source the components also send a typical type Test Certificate for the components from that maker. Without the type Test Certificate, your offer may not be considered for further processing's.

**Subhashini.G
SM / Purchase/Valves**



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Valves/Purchase, Tiruchirappalli-620014, INDIA

GENERAL TERMS AND CONDITIONS

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ADDITIONAL DETAILS REQUIRED

The following details are required for Gear operators in addition to Technical requirements mentioned in **VAL/BG/SPEC/006 Rev.:03**

1. Operating force required on hand wheel at full torque output shall not exceed 35 Kg F while operating with both hands.
2. All Gear operators shall have provision to accommodate raising spindle of the valve and the hole shall be properly covered with a removable lid. The Gear box shall be supplied with stem protection tube to accommodate larger spindle travel as indicated elsewhere in this specification. All the above parts, i.e. the threaded portion of Gear box, removable lids and stem protection tubes shall be able to withstand the prolonged outdoor storage without getting rusted or damaged.
3. All Gears used shall be metallic. Fiber gears are not acceptable. Metallic gear trains used shall be self-locking to prevent drift.
4. The gearbox shall be oil filled or grease filled. The oil/grease must be suitable for operation for 80 Deg. above ambient temperature. Furnish detail of lubricant used with Indian oil Company's BPCL, IOCL & HPCL's equivalent. The Gear box shall have proper seals to prevent leakage of oil at all installation positions. The Gear box construction shall be such that the oil/grease does not leak to other compartments or outside. In case of any complaint of such leakage, the complaint shall be attended free of cost within one week and root cause of the problem shall be eliminated within one month.
5. Applicable Actuator models that can be coupled with each Gearbox shall also be indicated along with rated output torque, rpm and thrust for the combination.
6. Supplier shall quote for the applicable mandatory spares which will be used for spares requirement during rate contract period.



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1. QUOTATIONS:

- a. **Submission of Tender:** Each offer should be sent in double cover separately and the same should be sealed and super scribed with correct Tender No., item of supply and due date of opening. Two or more quotations should not be sent in one cover. Price Bid should contain only Price in Rs per unit for each type. Tender should not be addressed to any individual's name but only by designation as below:

[TENDER ROOM NO-26, BUILDING 24,](#)
[HIGH PRESSURE BOILER PLANT](#)
[BHARAT HEAVY ELECTRICALS LIMITED](#)
[TIRUCHIRAPPALLI - 620 014, TAMILNADU, INDIA](#)

- b. **Late tenders:** Late tenders shall not be considered under any circumstance.
- c. **Regulations:** Tender should be accompanied by detailed technical literature, Catalogue and detailed dimensional drawings in ENGLISH. Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- d. **Two Bid Systems:** If tender calls for two-part bid system (Techno commercial & price Bid). First the Techno Commercial bid will be opened. Techno-commercially suitable vendors alone will be intimated for price bid opening or Reverse Auction.
- e. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- f. **Catalogue:** Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.
- g. **Acceptance:** The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.

2. COMMERCIAL TERMS & CONDITIONS:

- a. **Terms of Payment:**

For Indigenous Suppliers : BHEL payment terms is 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores.

Any deviation in the above payment terms will attract loading as mentioned below:

"Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.

Payment through Bank is not preferred. In case payment through bank is opted by supplier, BHEL prefers document submission through bank with copy of LR and door delivery of goods to site/stores with consignee copy attached. In this case, loading will be 3% on the offered value. In case of direct to site(DTS), only 90 % through bank will be considered.

LC/Advance Payment will not be operated for indigenous vendors. Offers of indigenous vendors with payment terms as LC/Advance Payment from Indigenous vendors are liable for rejection.

For Import Suppliers: BHEL Payment terms is 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO at BHEL Bank. Respective bank charges to respective account.

Any deviation in the above payment term will attract loading as mentioned below.

"Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.

In the case of Usance LCs the loading will be considered @ 1.5% on the offered value.

For LC at sight, the loading will be considered @ 3.5% on the offered value.

Normally, CAD at sight and confirmed LCs are liable for rejection.

- b. **Liquidated Damage:** Liquidated damages shall be 0.5% of the total order value per week or part there of subject to a maximum of 10% of the total order value.
For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.
Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offer value).
- c. **Delivery Terms:**
For Indigenous Suppliers: FOR BHEL Trichy inclusive of freight and insurance.
For Import Suppliers: FOB nearest SEA Port/AirPort.
- d. **Validity of Offer:** Prices should be valid for 120 days from the date of opening of this tender considering the processing time of tender. But, the prices should be valid for 18 months in the Rate Contract.



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- e. **Duties and Taxes:** If any Sales Tax is payable as extra to the quoted price, it should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.
- f. **Risk Purchase:** Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty at the rate mentioned in clause 2 b above.
- g. **Preferential Delivery:** If a contract is placed on a higher tender as a result of this invitation to tender in preference to the lowest acceptable offer in consideration of the earliest delivery, the seller will be liable to pay to the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price FOR destination, including all elements of freight, sales tax, duties and other incidents, incidental in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.
- h. **MODVAT/CREDIT:** If any Excise Duty is payable, the chapter head/sub-head reference and the rate of the duty should be quoted. If the tender is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser.
- i. **Miscellaneous:** Any Other conditions which might have been quoted by the seller and are in contravention to the terms prescribed in the order and which have not been specifically accepted in by Purchaser will not be applicable to the contract.

3. GENERAL CONDITIONS

- a. BHEL reserves the right to finalize the tender as per item sl no wise. Separate orders will be released for each project and documents should be supplied for each order separately.
- b. BHEL reserves the right to increase or reduce or split the Tender Quantity and to NOT to order for some or all material based on the changes in project.
- c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. Purchase Order, PO Item SI No, Material code, Quantity should marked the Packing clearly.
- g. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.
- h. The Clause: Special provisions for Micro and small enterprises (MSE) will be followed - according to gazette notification issued by Ministry of Micro, Small and Medium enterprises and corp MM circular no. 17 dtd 24.08.2013

4. DOCUMENTATION:

For Indigenous suppliers:-

- a. **With Consignment:** Duplicate for transporter copy of Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Test Certificates, Calibration Report, Compliance Certificate & Guarantee/Warranty Certificate etc...
- b. **Online Submission:** Supplier should upload the soft copy of all Test Certificates in BHEL website <http://vis.bheltry.co.in/vis/index.jsp> at Vendor information system tab.
- c. **To Finance:** Original and Duplicate Invoice for payment with GR reference ,should be sent directly to

[Sr Manager/Finance/Valves-Bills section](#)
[HPBP BHEL Tiruchirappalli-620014, Tamilnadu.](#)

To Purchase:

- FOR BHEL TRICHY case-**Copy of Invoice, Packing list, LWBand Delivery challan for reference, original IBR documents/Inspection despatch clearance certificates
- d. **Identification:**, Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all despatch documents, materials and packing clearly.

For Import suppliers:-

- a. **With Consignment:** O&M manual and Packing List, Fumigation certificates (In case of SEA shipment).
- b. **Through Bank:** All Original Documents in Triplicate Bill of lading in case of SEA/Airway Bill in case of AIR consignment, the invoice indicating the Unit price & total price, Packing List contains quantity ,net & gross weight,



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Packing dimensions, Certificate of Origin, all Inspection test certificates, Guarantee/warranty certificates are to be sent through supplier's bankers to BHEL bankers

- c. **To Purchase:** One copy of above non-negotiable documents are to be sent to purchase department after dispatch of the materials to follow up with freight forwarder.
- d. **Identification:**, Purchase Order, PO item SI No, Material code, quantity, Unique SI No if any should be provided in all materials and packing clearly.



BHARAT HEAVY ELECTRICALS LTD
VALVES PURCHASE

MOU/TP-VALVE/VALVE GEAR BOX/ REV 00

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TECHNICAL SPECIFICATION
FOR SUPPLYING
VALVES GEAR BOXES



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

MOU/TP-VALVE/VALVE GEAR BOX/ REV 00

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BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

MOU/TP-VALVE/VALVE GEAR BOX/ REV 00

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SCOPE

By this MOU, The specification for the Valve gearboxes is mutually agreed and applicable for the purchase orders finalised against the valve gearbox requirements from BHEL/Trichy during the period of validity of this MOU.

Project / order specific requirements will be indicated with each items of the order. However this specific requirement is over and above the specification finalized in this MOU.



BHARAT HEAVY ELECTRICALS LTD

VALVES PURCHASE

MOU/TP-VALVE/VALVE GEAR BOX/ REV 00

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1.0 General requirements

- 1.1 During the validity of this MOU, only MOU specification will be applicable for all enquiries and it will not be discussed for any deviation/clarification etc.
- 1.2 In case of the conflict in any requirement between MOU and project specific specification, the requirement of the project section is the final and binding.
- 1.3 It is agreed that no deviations will be taken by the vendors on the specification while submitting their offers against future enquiries.
- 1.4 Since this MOU specifications is standardized and an understanding has been reached, the future enquiries will be floated on "SINGLE BID SYSTEM" only. Hence, if any offer is found with deviations, the same will be totally rejected and will not be considered for further evaluation
- 1.5 The validity of this MOU is for TWO years from the date of signing. After the expiry of the period, the same can be extended further with or without any modifications. However, in case any changes are required, the MOU may be amended before the expiry of the validity.
- 1.6 If any special or non-standard tools are required for installation, operation or maintenance, the same shall be supplied along with the equipment.
- 1.7 Trouble-free operation of the equipment shall be guaranteed for a period of 12 months from the date of commissioning OR 18 months from the date of dispatch whichever is earlier.
- 1.8 Since the vendors works alone is approved by BHEL, it is agreed the vendor will manufacture this item in their own works only and will not off-load the jobs to any other suppliers without the written approval by BHEL.
- 1.9 All components shall be packed in such a way that they should not get damaged during transport.
- 1.10 BHEL and the Vendor shall have an involvement which will commence at bid stage and follow through the completion and acceptance, thus ensuring total conformity to Purchaser's requirements.



2.0 Technical Requirements

PRODUCTENGINEERING/VALVES	VAL/BG/SPEC/006Rev.:03
BHEL/TIRUCHIRAPPALLI-14	DATE:10-06-2013

SPECIFICATION FOR BEVEL GEAR OPERATORS FOR VALVES

1. **TYPE:**

All gear operators shall have bevel gear transmission with completely enclosed construction complying to IP65 or better. The gear casing shall be designed adequately to withstand shock and vibration of the pipeline. The design shall be compact and less weight and shall not cause any trouble during operation at sites.

2. **LUBRICANT:**

The Gearbox shall be filled with suitable lubricant. The specification of lubricant shall be furnished. There shall be no leakage of lubricant from the gearbox. The grease used shall be suitable for an ambient temperature of 80 deg. Centigrade.

2. **HANDWHEEL:**

All the gear operators shall have suitable hand wheel and the size of the hand wheel shall be designed to give the required input torque. The hand wheel shall be malleable iron or steel. The maximum hand wheel diameter shall not be more than 750mm.

3. **BASE:**

The gear operator shall have base suitable to take the thrust with ball/roller bearings. An Aluminum Bronze drive sleeve with a pilot bore shall be provided as a standard supply. If specified in the Purchase Order, Ni-Resist drive sleeve is to be supplied. The drive sleeve will be threaded by BHEL to suit the stem thread.

4. **ASSEMBLY:**

The assembly of all gears, shafts etc... shall be done properly to have smooth operation without any noise. Also the Gearboxes shall be suitable for mounting in any position.

5. **OUTPUT SHAFT FLANGE:**

The flange for connecting the valve shall have dimensions as per BHEL requirement indicated in the table.



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6. INPUT SHAFT FLANGE:

Wherever gearboxes are required to be assembled with Electrical Actuator, Gear operators are to be supplied with input flanges to suit the keyed shaft of the actuator. Details of the input flange for each model shall be furnished. Applicable Actuator models that can be coupled with each Gearbox shall also be indicated.

7. RANGE:

The gear operators with torque, thrust, maximum stem acceptance diameter, base details, etc., shall be supplied as per the details given below.

Sr.No.	Torque (kg -m) – Max.	Thrust (kgf)	Max. Stem Dia (mm)	Flange OD (mm)	Bolt Circle Dia (mm)	Locating Dia (mm) h7	Threaded hole size (mm)	Threaded hole depth(mm)	No. of Holes	~ Handwheel dia (mm)	Gear Ratio	Stem cover length(slotted)(mm)
1	11	2700	40	125	102	70	M10x1.5	16	4	250	2:1	200
2	35	6300	46	178	139.7	95.2	M16x2	26	4	310	2.5:1	250
3	50	16000	52	178	139.7	95.2	M16x2	22	4	310	4:1	250
4	75	10000	55	210	165.1	127	M20x2.5	26	4	460	3:1	250
5	100	19000	65	210	165.1	127	M20x2.5	30	4	460	4:1	250
6	150	20000	62	289	254	152.4	M16x2	34	8	460	4.11:1	400
7	200	32000	86	289	254	152.4	M16x2	25	8	460	6:1	400
8	300	35000	85	343	298.5	177.8	M20x2.5	31	8	610	6:1	300
9	400	45000	102	343	298.5	177.8	M20x2.5	25	8	610	8:1	300
10	600	63000	115	412	355.6	215.9	M24x3	45	8	610	9:1	400
11	800	82000	121	406	355.6	215.9	M24x3	30	8	610	8:1	400
12	1200	120000	130	476	406.4	228.6	M30x3.5	50	8	760	10:1	500



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8. **MATERIAL:**

All machined components like bevel gear, bevel pinion, drive sleeve etc., shall be from superior grade material suitable for the application and shall be heat treated to the design requirement.

9. **STEM PROTECTION:**

All gear operators shall have stem protection covers. Stem protection covers are to be provided with a 'SLOT' for stem position indication. The length of stem protection cover shall be as indicated in the table. Wherever different length of stem protection cover is required, the same has to be supplied as indicated in the purchase order. The thread connection of the Stem Protection Cover shall be indicated in the GA drawing & Catalogue.

10. **DRAWING:**

Supplier to furnish the general arrangement drawing and cross sectional drawing of the gear operator incorporating the material specification for all critical components and overall dimensional details for BHEL approval. Also complete dimensional drawing of drive sleeve is to be furnished for all models.

11. **TYPE TESTS:**

The gear operator shall be tested to the design requirement of torque and thrust and type test certificates shall be furnished. The mechanical efficiency shall not be less than 95%.

12. **FINAL ASSEMBLY:**

To be inspected visually for surface smoothness, painting finish and smooth operation.

13. **NAME PLATE:**

Nameplate made of suitable corrosion resistant material, preferably stainless steel, is to be fixed on to the gearbox casing. The name plate contain the following information as minimum:

Maker's Name.....:
Model Number:
Serial Number:
Output Torque.....:
Permissible Thrust.....:
Gear Ratio.....:
Material Code(as indicated in P.O).:



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14. VENDOR TO FURNISH THE FOLLOWING DETAILS:

- Name of Supplier.....:
- Gear Box Model No.:
- G.A. Drawing No.....:
- Cross sectional Drg. No.:
- Drive sleeve Drg. No.....:
- Lubricant Details
- Bearing details.....:
- Suitability for Outdoor Application...: :

The vendor shall furnish the above details against each model of the Gearbox offered and enclose all the drawings & documents along with the offer.

15. Recommended spares:

The supplier shall indicate the list of commissioning spares if any and operational spares for five years of trouble free operation.

16. General:

The vendor shall confirm compliance of each of the above points and also furnish a separate deviation list, in case of any deviation in any of the clause. Even in case of no deviation the vendor shall explicitly mention as "NO DEVIATION".



3.0 Documentation Requirements

The following documents are to be attached with this MOU
a. GA drawings for all models including dismantling clearances.
b. The dimension drawing of the blank adopter bush
c. Dimensional catalogue with maximum spindle acceptance details
d. Outline dimension of gear box.
e. General arrangement drawing of gear box consisting following as minimum 1. Identification of critical component with its material composition.
2. Mounting flange dimension
3. Hand wheel dimensions
4. Weight of gear box
5. Stem protection cover length, thread size and type
f. The 3D CAD format shall be available for all the models.
g. Quality plan.
h. Type test certificates



4.0 Quality requirements

4.1 INSPECTION AND TEST REQUIREMENTS

All equipments shall be subject to inspection by BHEL/ Client and/or their nominated inspecting authority. Vendor shall make all provisions in his shop/sub-vendors shops for complete inspection and test of gear boxes

4.2 Tests & Inspection:

- 4.2.1 During fabrication/testing, the gearboxes shall be subjected to inspection by BHEL/CUSTOMER or by any agency authorized by them. Manufacturer shall furnish all necessary information concerning the supply to BHEL/CUSTOMER inspectors.
- 4.2.2 All routine tests as specified by the applicable standards shall be conducted.
- 4.2.3 Shop tests shall be witnessed by an inspector of BHEL/CUSTOMER or of an agency authorized by customer.
- 4.2.4 Quality plan for the gear box to be followed.

4.3 Painting, Protection, Packing, Supply and Identification:

4.3.1 **Surface Preparation:** Weld slag & spatter shall be removed and the surfaces to be coated shall be free from contamination. Surface defects shall be removed by suitable methods. Sharp edges shall be smoothed by grinding. Prior to surface preparation oil, grease, drilling emulsions, cutting emulsions and preservative agents shall be carefully removed by suitable solvents. The surface shall be carefully dried with clean cloth to prevent the dissolved impurities from spreading over the entire surface. The surface shall be cleaned by wire brush and shot blasting if required. Proper adhesiveness of paint to the surface shall be ensured.

4.3.2 Paint Shade

The enclosures shall be treated and prepared for painting with suitable painting system for withstanding 500Hrs of salt spray as per ASTM B-117/ ISO 9227 standard.

4.4 Packing & Transport:

The gearbox shall be supplied to site packed in wooden crates / Carton boxes. They shall be wrapped with polythene sheets. They shall have skid bottoms for handling. All spares shall be packed separately in boxes marked SPARE



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Special precaution notations such as Fragile. This side up, centre of gravity, weight, and Owner's particulars. Purchase number etc. shall be clearly marked on the package together with other details as per purchase order.

The equipment may be stored in a covered shed for long periods before installation. The packing should be suitable for such storage.

4.T.0	TEST REQUIREMENTS FOR GEAR BOXES
4.T.1.0	ROUTINE TEST:
4.T.1.1	Dimensions: Overall and mounting
4.T.1.2	Details of painting as per specification and vendor practice: Anti-corrosiveness Epoxy.
	i. Shade.
	ii. Finish
	iii. Paint thickness
4.T.1.3.	Manual operation through hand wheel.
4.T.1.10	T.1.10 Leakage test for gear case (visual).
4.T.2.0	TYPE TEST certificates shall be provided for Thrust & Torque
4.T.2.5.	Enclosure protection for the total assembly.

4.N.0.	NOTES:
4.N.0.1.	The quality plans shall be approved by BHEL.
4.N.0.2.	All testing facilities shall be arranged by the vendor, at his works before calling BHEL representative for inspection.
4.N.0.3.	Approved drgs., PO specification and relevant standards if any shall be made available during testing / inspection.
4.N.0.4.	All measuring and testing instruments shall be periodically calibrated from National test house and certificates made available during inspection.
4.N.0.5	All relevant GA drawings, data sheets & wiring diagrams shall be submitted as controlled copy and approval shall be obtained from BHEL. All supply shall be as per these documents.



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5.0 TERMS AND CONDITIONS-General

1. QUOTATIONS:

a. Submission of Tender: The bidder shall submit the bid online in BHEL e-Procurement portal at

["https://bheleps.buyjunction.in"](https://bheleps.buyjunction.in)

The bidder would be required to register on the above e-procurement portal for submitting their bids.

Sealed cover bids / e-Mails / FAX / Manual offer will NOT be considered.

b. Late tenders: Late tenders shall not be considered under any circumstance.

c. Duties and Taxes: If any Sales Tax is payable as extra to the quoted price, it should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.

d. PVC: Price Variation clause not acceptable. Prices should be firm. No revision of prices will be entertained after tenders are opened

e. Catalogue: Manufacturer's name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary. Products with ISI certification will be preferred

f. Samples: Samples should be submitted separately if specially requested in tender before due date of the enquiry. They should be clearly marked with the enquiry No and date on the outside cover to facilitate identification

g. Deviation: Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".

2. COMMERCIAL TERMS & CONDITIONS:

a. Terms of Payment:

FOR TRICHY: Payment 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores.

b. Liquidated Damage: A sum equivalent to 0.5% of price for each week of delay up to a maximum of 15% of the delayed/ undelivered goods.

c. Delivery Terms: Price should be quoted FOR BHEL Trichy/FOR site as mentioned in enquiry inclusive of freight and insurance in transit.



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- d. Validity of Offer:** Prices should be valid for one year from the date of opening of this tender.
- e. Taxes & Duties:** Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.
- f. Risk Purchase:** Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of seller either the whole of goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitute therefore. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases.
- g. MODVAT/CREDIT:** If any Excise Duty is payable, the chapter head/sub-head reference and the rate of the duty should be quoted. If the tender is availing MODVAT credit for his input materials, the effect of Performa invoice should be passed on to the purchaser; tenderer under MODVAT shall be preferred.
- h. Performance Bank Guarantee:** If tender Calls for Performance Bank Guarantee, Vendor should provide a performance bank guarantee (PBG) for 10% of the total Purchase order value valid for warranty/guarantee period with an additional claim period of 2 months.
- i. Miscellaneous:** Any Other conditions which might have been quoted by the seller and are in contravention to the terms prescribed in the order and which have not been specifically accepted in by Purchaser will not be applicable to the contract.
- j. Delivery period:** Delivery schedule shall be strictly as per BHEL tender requirement which are as indicated against each item in our tender.

3. GENERAL CONDITIONS

- a.** BHEL reserves the right to finalize the tender as per item sl no wise or as a total package or project wise. Separate orders will be released for each project and documents should be supplied for each order separately.
- b.** BHEL reserves the right to increase or reduce or split the Tender Quantity and to NOT to order for some or all material based on the changes in project.
- c.** BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d.** BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.



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- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. Purchase Order, PO Item SI No, Material code, Quantity should marked the Packing clearly.
- g. Confirmation for compliance is to be given in the offer for all the conditions specified above and to the respective Purchase Specification.

4. DOCUMENTATION:

- a. **With Consignment:** Original duplicate for transporter copy, Invoice, Packing List, Delivery Challan, O&M manual copy of Material Test Certificate, Test Certificates, Calibration Report, Compliance Certificate, Guarantee/Warranty Certificate etc...
- b. **Online Submission:** Supplier should upload the soft copy of Test Certificates in BHEL website <http://vis.bheltry.co.in/vis/index.jsp> at Vendor information system tab.
- c. **To Finance:** Original and Duplicate Invoice for payment should be sent directly to
Senior Manager
Finance/Valves-Bills section
BHEL TRICHY 620014
- d. **To Purchase:**
 - i. **FOR BHEL TRICHY case**-Copy of Invoice, Packing list, LWBand Delivery challan.
 - ii. **FOR Site case** -Original Excise Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate, Original Inspection report, Test certificates as per PO, Original Site Acknowledgment etc
- e. **Identification:** Material code, Purchase Order, PO item SI No, Unique SI No if any should be provided in all despatch documents, materials and packing clearly.

5. DISCLAIMER CLAUSE:

Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider (mjunction Services Ltd.) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.



6.0 MOU Commercial Terms & Conditions

a. Terms of Payment:

FOR TRICHY: Payment 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores.

b. Liquidated Damage: A sum equivalent to 0.5% of price for each week of delay up to a maximum of 15% of the delayed/ undelivered goods.

c. Delivery Terms: Price should be quoted FOR BHEL Trichy inclusive of freight and insurance in transit.

d. Validity of Offer: Prices should be valid for One Year from the date of finalizing the tender.

e. Taxes & Duties: Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.

f. Delivery period: Delivery schedule shall be 12 weeks from date of ordering.

g. Counter offer: BHEL reserves the right to counter-offer with vendors in order to have broader vendor base for ensuring delivery.

h. Acceptance of standard terms and conditions