



TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

DUE DATE OF OPENING: 26.10.2012

1. INVITING TENDERS

Tenders in two part bids are invited. Sealed tenders in two parts; Part-I: Techno-commercial bid and Part-II: Price bid are hereby invited for supply of **Bearings** as per BHEL Drawings, TDCs, Spec: SB:0002:Rev 06 and other technical documents as referred in these documents. The relevant documents are attached with the Enquiry.

Bidders should primarily be engaged in manufacturing/supplying of Bearings. Bidders should

1. Authorized distributor / dealers, will have to submit authorization certificate from their manufacturer.

OR

2. Stockiest, will have to submit following documents.

At the time of Quotation submission:

a. He has to submit undertaking about the procurement of these bearings from authorized distributors / dealers.

b. He has to submit authorization certificate of sourcing authorized distributor's / dealer's from the original manufacturer.

At the time of delivery:

a. He has to submit relevant document which will prove that procured bearings are from authorized distributors / dealers.

OR


3. Manufacturer of these bearings as per specification sheet.

We require cage material of bearings, to be STEEL only. Bidders should clearly mention about cage material of bearings in quotation. The quotation of other cage material will not be accepted.

The two bids should be submitted in separate sealed inner envelopes duly mentioning the detail as follows:

Bid	Bid description	Superscribing on envelope	*** Should contain ***
Part I in First sealed envelope	Techno-Commercial Offer	Part-I (Techno-Commercial) bid against tender enquiry no: 1213-099 dated 18.10.2012 due for opening on 26.10.2012	1. Acceptance of all terms and conditions of tender enquiry. (Preferred is submitting signed copy of terms and conditions; if nothing is mentioned for any term, it shall be summarily concluded that the same is acceptable and no representation whatsoever shall be entertained later on). 2. Un-priced bid as per format attached. All details, i.e. whether quoted for item, duties and taxes etc. should be filled.
Part II in Second sealed envelope	Price Bid	Part-II (Price) bid against tender enquiry No:	Price bid in the format attached. Preferably the price bid envelop should contain ONLY the price bid. Further, if even the same conditions are mentioned in the Part-II, but after scrutiny of Part-I,

Manmeet Kumar (1)

 BHEL GOINDWAL	TERMS AND CONDITIONS FOR (Tender Enquiry No.1213-099 Dated 18.10.2012)
--	--

		1213-099 Dated: 18.10.2012	the bidder has agreed to BHEL terms, the same shall be binding and any such condition found in Part-II shall in no case be discussed. Rates should be mentioned in words as well as in figures. In case of any confusion rates in words shall be considered final. Anything other than price mentioned in the price bid shall be considered invalid
--	--	----------------------------------	--

Both the sealed envelopes should be put in outer sealed envelope superscribing all details i.e. Enquiry Number, Date, Supplier's Name and Address and Item.

Time of submission by 1400 Hrs on Due Date. Time of Techno-Commercial bid (Part I) opening is 1530 Hrs on due date. Based on evaluation of techno-commercial offers, Price bids of bidders who qualify from techno-commercial evaluation shall be opened. BHEL may decide to open the Price bid same day at 1700 hrs. If not opened on the same day, all qualifying bidders shall be notified for date of opening of Price bids.

Sealed Tenders can be dropped in the tender box labeled as 'Tender box for MM contracts'. This tender box is located at the entrance of Admin block BHEL Goindwal.

2. VALIDITY OF OFFERS:

The offers shall be kept open for acceptance for 30 days from the date of opening of the tender. In case of extension of tender opening date, the validity shall be suitably revised.

3. SCOPE OF SUPPLY

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

4. REPLACEMENT OF REJECTION:

If the material is rejected due to defective workmanship during inspection or at the time of actual use, within the guarantee period (i.e. as per clause 11), the rejected material shall be replaced by the supplier. Corresponding quantity shall be treated as unsupplied against respective purchase order till replacement is received at BHEL. If the material is found defective and rejected during use for which payment has already been released the rejected quantity shall be supplied free of cost by the vendor within a month of intimation of the rejection by BHEL.

5. DELIVERY SCHEDULE:

Supplies shall be affected and completed as per schedule mentioned in the POs. Desired delivery minimum 500 Nos in 15 days and balance qty in next 15 days from placement of PO. Total order will be completed within 30 days from date of PO. Further, BHEL may release delivery schedule from time to time based upon our requirement. Vendor shall be required to complete the order as per the BHEL schedule requested.

6. ACCESS TO MANUFACTURING PREMISES:

While Purchase Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

be extended to representatives of BHEL's customers accompanying the authorized representative/s of BHEL (which shall be intimated in advance), if our contractual requirements with our customers call for the same.

7. TERMS OF PAYMENT:

- a. Due payment against supplies received shall be due after 30 days of receipt and acceptance of material and shall be paid within next 15 days period. In case of any deviation from standard payment term mentioned BHEL at it's discretion may load on the item price at prime lending rate of SBI + 2% for the period of relaxation sought by bidder.
- b. Documents to be submitted
 - i. Commercial invoice (in duplicate)
 - ii. Excise invoice (in duplicate) valid for claiming CENVAT credit
 - iii. Original VAT invoice valid for claiming input tax credit, if applicable
 - iv. Material Test Certificates (MTC) and
 - v. Compliance Certificate.
- c. Above documents should include your Registration numbers such as ECC no, PAN no, CST no, TIN/ VAT nos. etc.
- d. It is mandatory to mention proper material codes in the invoices and separate invoices to be raised for different POs.
- e. ***BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.***

8. INSPECTION:

1. All required tests shall be carried out by vendor at no extra cost. Relevant TCs shall accompany the consignment. **BHEL may decide to inspect itself/arrange third party at vendors' works itself as and when necessary with prior intimation to the vendor.** No additional charges shall be claimed for such inspections.
2. **Vendor will give inspection call sufficiently in advance considering the delivery period stipulated in the purchase order.**
3. Material Test Certificates (MTC), Inspection reports and Compliance/Guarantee Certificate are to be provided along with the supplies.
4. Latest applicable revisions of standards/procedures to be referred.
5. Any inspection carried out before supply by vendor/incoming stage at BHEL not withstanding, if any defect/non-conformity is noted during processing, the same shall be attended/replaced by vendor at no extra cost.

9. REVERSE AUCTION

BHEL reserves the option to either finalise the tender by opening sealed price bids (Part-II) submitted with the offer on a specified date and time in the presence of bidders, who may like to be; or carrying out live reverse auction on-line. In case of reverse auction, adequate infrastructure like internet connection, uninterrupted power supply, printer, fax machine etc. will have to be arranged by bidder. BHEL will engage a service provider who shall interact, educate, guide and coordinate with bidder for reserve auction. Date and time of reverse auction shall be informed.

10. PREFERENCES FOR MSE's:

Preferences as mentioned in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" shall be given to Micro and Small enterprises.

Mamsef Kumar



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

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

- 20% Procurement of the tender value shall be made from MSE (Micro, Small Enterprises) firms.
- 4% from the above mentioned 20% procurement quantity shall be procured from MSE's owned by SC /ST's. Failure to participate by any MSE owned by SC/ST's this 4% quantity shall be procured from other MSEs.
- EMD shall be exempted for MSE's. All these benefits are subject to production of all statutory documents
- In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 20 per cent of total tendered value. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity).

***All these preferences are applicable subject to the submission of applicable certificates (i.e. District Industries Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises)**

11. LOADING CRITERIA

1. Tender quantity shall be divided in the proportion 80:20 (80% for L1 and 20% for MSE's) in case the L1 vendor is not a MSE subject to following conditions:

I. In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be offered 20% quantity of tender quantity at L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise. In case of more than one such Micro and Small Enterprise, the supply shall be shared equally. If there are more than one MSE in the price band of L1+ 15% to whom the offer has been sent and some of them reject the offer then the remaining quantity shall be distributed equally to the MSEs accepting L1 prices.

II. 20% from the 20% quantity (i.e. 4% of the tender quantity) offered to the MSE's shall be reserved for MSE's owned by SC/STs. In event of failure of such Micro and Small Enterprises to participate in tender process or meet tender requirements and L1 price, 4 per cent quantity for Micro and Small Enterprises owned by SC/ST entrepreneurs shall be met from other Micro and Small Enterprises.

III. In case any MSE vendor does not accept the counter offer, the above mentioned 20% quantity shall be offered to L1.

IV. If there is no MSE in the Price band of L1+15% then the 20% quantity shall be offered to L1 vendor.



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

2. In case if the L1 vendor is MSE then quantity shall be provided as 96 % for L1 and 4% tender quantity shall be offered to the MSEs owned by SC/ST's in the price band of L1+15%. In event of failure of such Micro and Small Enterprises to participate in tender process or meet tender requirements and L1 price, 4 per cent sub-target for procurement earmarked for Micro and Small Enterprises owned by SC/ST entrepreneurs shall be met from L1 vendor.

3. In case the L1 vendor is a MSE owned by a SC/ST then the 100 % quantity shall be loaded on L1 bidder.

In case of non- acceptance of counter offer by any vendor after above applicable provisions the whole quantity would be offered to L1 vendor.

This ratio can be altered in case of any failure on part of L1 regarding delivery commitment/quantity/quality of material.

All above mentioned preferences shall be given to MSEs and SC/STs only on the submission of documentary evidence.

12. GUARANTEE:

Vendor shall give a guarantee of 18 months from the date of dispatch or 12 months from use, against manufacturing defects, whichever is earlier.

13. PENALTY FOR LATE DELIVERY:

'Time is the essence of the contract'. As such, delivery of goods specified in the Purchase Orders released under the scope of this contract shall be made within the time limit prescribed therein. Penalty for late delivery will be applicable @ 1% per week or part thereof subject to a maximum of 10.0 %.

BHEL reserves the right to receive or not receive the material after the due date of PO.

14. RISK PURCHASE:

BHEL shall be entitled to terminate the contract/pending POs at any stage and to purchase elsewhere at the risk and cost of the vendor, either the whole of the goods or any part thereof which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid. Vendor shall be liable for the losses, which BHEL may sustain by way of such risk purchase in addition to aforesaid penalty for delayed delivery.

15. SUB-CONTRACT:

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

16. FORCE MAJEURE:

If at any time during the continuance of the contract, the performance in which or in any part by either party of any obligations under the contract are prevented or delayed by reason of any war, hostilities, acts of public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine restrictions, or acts of God (hereinafter referred to "an events" then provided the notice of happening of any such event is given by either party to the other within 21 days of the occurrence thereof, neither party shall by reason of such event be entitled to terminate the contract nor shall either party have any claim for

Manmeet Kumar



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

damages against the other in respect of such non-performance and delay in performance and delivery under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist. If the performance in whole or part of any obligation under the contract is prevented or delayed by reason of any such event, claims of extension of time shall be granted for periods considered reasonable by BHEL subject to prior notification by the vendor to BHEL of the particulars of the event and supply to BHEL, if required, of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed a waiver of time in respect of remaining deliveries.

17. DISPUTES:

In the event of any dispute and/or difference arising between the Vendor and BHEL as to interpretation and/or execution of the contract and/or the respective rights and liabilities of the parties, such disputes and/or differences shall be referred to the sole arbitrator nominated by BHEL. The provisions of the Indian Arbitration Act and the rules there under shall apply to such arbitration. The award passed by the arbitrator shall be final and conclusively binding on all the parties.

18. JURISDICTION:

The court of the place from where the purchase order is issued during the contractual period shall alone have jurisdiction to decide any dispute arising out of or in connection with the purchase order.

19. MSME Certification:

If the bidder is registered as any of Micro/Small/Medium enterprise as defined in Micro Small and Medium Enterprises Development Act, 2006; a copy of registration certificate to be attached.

20. CLARIFICATIONS

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

21. LOI(Letter of Intent)

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

22. GENERAL:

- a) BHEL will not be bound by any power of attorney granted by the vendors or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the vendor concerned.

Manmeet Kumar (6)



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

- b) BHEL reserves the right to extend the due date of opening, which shall be informed. Validity of offer shall be deemed to be revised accordingly.
- c) BHEL reserves the right to accept or reject any part or whole of the tender of a bidder by assigning a valid reason thereof. BHEL reserves the right to cancel the tender without assigning any reason thereof and without any obligation before any commitment.
- d) If possible, please submit soft copy of price quotation [copied on a blank CD of standard make] put in the sealed offer.
- e) Acceptance of all terms and conditions, in the form of signed copy of T&C or confirmation separately written, shall be submitted along with quotation. If nothing is mentioned, it shall be concluded that terms and conditions are acceptable.

23. BANNED FIRMS:

The offers of the bidders who are on the banned list as also the offer of the bidders, who engage in the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com.

24. Supplier Registration:

Bidders, who are not currently on registered list of BHEL IVP Goindwal Sahib, may submit duly filled format for "Vendor Registration form". The form can be downloaded from our website www.bhel.com or can be requested at manmeet@bhelivp.in. Registered vendors with BHEL IVP GWL have to mention their vendor code. Registered vendors with any other unit of BHEL are also required to mention the vendor code given by respective BHEL unit along with photocopy of latest POs from BHEL unit. Techno-commercially qualified bidders may be asked for submission of supplier registration form for getting registered with BHEL, IVP, Goindwal.

Information and general terms and conditions governing RA (Reverse Auction) are given below.

GENERAL TERMS AND CONDITIONS OF RA

Against this enquiry for the subject item with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. 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.
3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
4. Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.

Manmeet Kumar



BHEL GOINDWAL

TERMS AND CONDITIONS FOR
(Tender Enquiry No.1213-099 Dated 18.10.2012)

5. 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.
6. 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.
7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. 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.
10. 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.
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's standard practice.

CHECKLIST AND SEQUENCE OF DOCUMENTS TO BE SUBMITTED IN TWO PARTS BIDS

S. No.	Document	Status
1	Envelope should contain (1) Techno-Commercial bid preferably with signed copy of terms & conditions (2) Unpriced bid format (Annexure-I) with applicable taxes (item prices not to be mentioned)	Yes, Sealed Sealed envelope marked as Part-I "Techno-Commercial Bids"
2.	Price Bid (Preferably in Annexure-II) sealed in separate envelope superscribing tender enquiry detail, due date of opening, sender address	Yes, sealed Sealed envelope marked as Part-II "Price Bid"
3.	All two sealed envelopes put in an outer envelope mentioning all details like Enquiry no., description, due date	Yes

Techno-Commercial Bid Annexure to Enquiry No. 1213-099 Dated 18.10.2012, Due date 26.10.2012

Enq Sl. No.	Code	Description of material	Drawing No.	Specification	Cage Material	About Bearing	Enquiry Qty (Nos.)	Quoted	Unit Basic Price, Rs. per No.
1	552115110100	SINGLE THRUST BALL BEARING - 51101	3-V-0000-02888/03	As per Spec: SB:0002:Rev 06	Steel	In all respect as per SKF 51101 Bearing having steel cage material.	1300	Yes/No	"Pl. see price bid"
2	552115110200	SINGLE THRUST BALL BEARING - 51102			Steel	In all respect as per SKF 51102 Bearing having steel cage material.	1300	Yes/No	"Pl. see price bid"
Excise Duty rate (mention in % if applicable, mention as NIL if not applicable)									
Cess on ED rate. (mention in % if applicable)									
CST (%) / VAT (%)									

Validity of offers (As per BHEL terms 30 days validity is required)

The above prices are Firm, without any price escalation; are Rs. per piece; and are on FOR Goindwal Sahib basis. We hereby confirm that the material of cage will be steel.

We accept all terms and conditions of the Tender Enquiry No. 1213-099 dated 18.10.2012

MSE Status

Yes/No	Yes/NO
Micro/Small	Other
Yes/No	Yes/NO
SC/ST	Other

If Micro or small then owner of company belong to

If Yes in Micro/Small/SC/ST, then send relevant document.

Authorised signatory with seal

Price Bid Annexure to Enquiry No.1213-099 Dated 18.10.2012, Due date 26.10.2012

Enq Sl. No.	Code	Description of material	Drawing No.	Specification	Cage Material	About Bearing	Enquiry Qty (Nos.)	Unit Basic Price, Rs. per No.
1	552115110100	SINGLE THRUST BALL BEARING - 51101	3-V-0000-02888/03	As per Spec: SB:0002:Rev 06	Steel	In all respect as per SKF 51101 Bearing having steel cage material.	1300	
2	552115110200	SINGLE THRUST BALL BEARING - 51102			Steel	In all respect as per SKF 51101 Bearing having steel cage material.	1300	

Authorised signatory with seal



365-148

**PRODUCT ENGINEERING / V&SB
PURCHASE SPECIFICATION FOR
BEARINGS USED IN
SOOT BLOWERS**

**SPEC:SB:0002
Page 01 of 02**

**REV:06
Dt.
26/03/2012**

1.0	COMPONENT	:	BEARING	
1.1	MATERIAL CODES	:	SEE BELOW	
2.0	SPECIFICATION	:	BEARING NO.	MATL.CODE
2.1	BALL BEARING	:	SKF 6208 2RS (TWO SIDES RUBBER SEALED)	55 119 06208
2.2	BALL BEARING	:	SKF 6209 2RS (TWO SIDES RUBBER SEALED)	55 119 06209
2.3	BALL BEARING	:	SKF 6205 2RS (TWO SIDES RUBBER SEALED)	55 119 06205
2.3a	BALL BEARING	:	SKF 6205 RS	55 111 06205
2.4	BALL BEARING	:	SKF 6204	55 111 06204
2.5	BALL BEARING	:	SKF 6004	55 111 06004
2.6	BALL BEARING	:	SKF 6208	55 111 06208
2.7	BALL BEARING	:	SKF 6019 WITH "C 4" CLEARANCE	55 111 06019
2.8	BALL BEARING	:	SKF 6206 2RS (TWO SIDES RUBBER SEALED)	55 119 06206
2.9	BALL BEARING	:	SKF 6206	55 111 06206
2.10	CAM ROLL BEARING	:	MC GILL CYR 1 3/8S /IKO CRY22 VUU	97 353 31300
2.11	CAM FOLLOWER	:	MC GILL CF 1S IKO CR 16UU	97 353 93400 96 353 93400
2.12	THRUST BEARING	:	SKF 51101	55 211 51101
2.13	THRUST BEARING	:	SKF 51102	55 211 51102
2.14	THRUST BEARING	:	SKF 52206	55 211 52206
2.15	BALL BEARING	:	SKF 6309	55 111 06309
2.16	BALL BEARING	:	SKF 6202	55 111 06202
2.17	BALL BEARING	:	SKF 6021 WITH C4 CLEARANCE	55 111 06021
2.18	BALL BEARING	:	SKF 6020 WITH C4 CLEARANCE	55 111 06020
2.19	BALL BEARING	:	SKF 6305	55 111 06305
2.20	BALL BEARING	:	SKF 6005-2RS (TWO SIDES RUBBER SEALED)	55 119 06005
2.21	BALL BEARING	:	SKF 6210-2RS (TWO SIDE RUBBER SEALED)	55 119 06210
2.22	BALL BEARING	:	NDC 88505 LRI 301 KJF (SILICON GREASE LUBRICATED) 6305 ZZ (SILICON GREASE LUBRICATED)	97 353 30500 96 353 30500
2.23	GUIDE ROLL BEARING	:	IKO - NA 6908 UU MC GILL GR 32SS MI - 26	96 366 12400 97 366 12400
2.24	BALL BEARING	:	SKF 6008	55 111 06008
2.25	BALL BEARING	:	SKF 6017	55 111 06017

REV 06 : 96 353 63100 CODE ADDED ON Dt. 26.03.2012

PREPARED BY
(J SANKAR)

CHECKED BY
(SHIVAM KUMAR GUPTA)

APPROVED BY
(K.SRIDHARAN)



365-148

**PRODUCT ENGINEERING / V&SB
PURCHASE SPECIFICATION FOR
BEARINGS USED IN
SOOT BLOWERS**

**SPEC:SB:0002
Page 02 of 02**

**REV:06
Dt.
26/03/2012**

2.26	NEEDLE ROLLER BEARING	:	SCE 129P	97 366 18500
2.27	BALL BEARING	:	6308-2RS (TWO SIDE RUBBER SEALED)	96 353 63100
3.0	SPL. REMARKS	:	IN ADDITION TO THE BEARING MAKES INDICATED AGAINST EACH PART CODES, BEARING SHALL BE PROCURED ONLY FROM REPUTED BEARING MANUFACTURER OR THEIR AUTHORISED STOCKISTS. REPUTED MAKE LIKE SKF / FAG/NACHI / NTN / NSK / RHP / HMT BEARINGS LIMITED ONLY TO BE PROCURED FROM STOCKISTS.	
4.0	PACKINGS	:	BEARINGS SHALL BE PACKED IN GREASE PACKED CONDITION AND IN OIL LUBRICATED PAPER TO AVOID RUSTING BEFORE ASSEMBLY BEARINGS ARE TO BE PACKED IN WEATHER PROOF BOXES (WOODEN) TO WITH STAND THE TRANSIT HAZARDS.	
5.0	STORAGE	:	TO BE STORED UNDER COVERED AREA AND THE BEARINGS ARE TO BE GREASED AND PACKED IF OPENED.	
6.0	CRITICAL CHECK POINTS:	:	1. CHECK FOR DIMENSIONS AS PER THE CATALOGUES. 2. CHECK FOR DAMAGE. 3. CHECK FOR RADIAL CLEARANCE FOR THE BEARINGS WITH "C4" CLEARANCE.	
7.0	DOCUMENTS REQD.	:	GUARANTEE CERTIFICATE 12/18 MONTHS HAS TO BE PROVIDED FOR TROUBLE FREE OPERATION. FOR ACCEPTANCE.	

REV 06 : 96 353 63100 CODE ADDED ON Dt. 26.03.2012

PREPARED BY
(J SANKAR)

CHECKED BY
(SHIVAM KUMAR GUPTA)

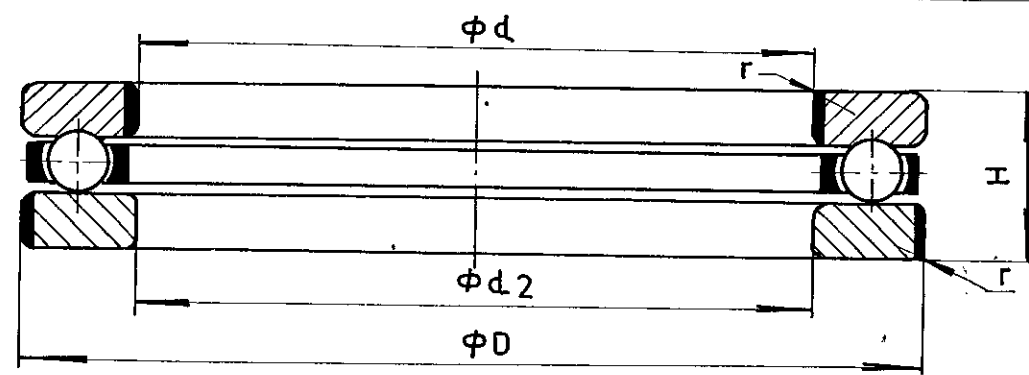
APPROVED BY
(K.SRIDHARAN)

FIRST ANGLE PROJECTION. (ALL DIMENSIONS IN MILLIMETRES)

06-228/C

CAUTION THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LTD. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

SLN _o	DRAWING NO.	BEARING NO.	WT (kg)	DIMENSIONS						STATIC BASIC CAPACITY-kgs	APPLICABLE VALVE TYPE NOS	
				D	d	d2 MIN	H	r ≈	1NO / VALVE		2NOS / VALVE	
1	3-V-0401-02888	51101	0.049	26 ^{-0.013}	12 ^{-0.008}	12.2	9	0.5	1250	401, 421		
2	3-V-0450-02888	51102	0.053	28 ^{-0.013}	15 ^{-0.008}	15.2	9	0.5	1370	401, 421		
3	3-V-0402-02888	51104	0.088	35 ^{-0.016}	20 ^{-0.010}	20.2	10	0.5	2200		402 & 422	
4	3-V-0179-02888	51107	0.198	52 ^{-0.019}	35 ^{-0.012}	35.2	12	1	3900		179	
5	3-V-2387-02888	51108	0.265	60 ^{-0.019}	40 ^{-0.012}	40.2	13	1	5200	2387, 2439		
6	3-V-1317-02888	51109	0.331	65 ^{-0.019}	45 ^{-0.012}	45.2	14	1	5700		107, 108, 1210, 1212, 1317 & 1318	
7	3-V-0114-02888	51111	0.529	78 ^{-0.019}	55 ^{-0.015}	55.2	16	1	7650	192, 194, 198, 199, 1239, 1295, 1300, 1301, 1302, 1304, 1432, 1504.	114, 115, 130, 134, 136, 159, 175, 223, 255, 263, 1209, 1214, 1284, 2224, 2231, 2267, 2277, 2311, 2314, 2315, 2333, 2338, 2355, 2446.	
8	3-V-0112-02888	51113	0.750	90 ^{-0.022}	65 ^{-0.015}	65.2	18	1.5	9650		112	
9	3-V-0132-02888	51114	0.794	95 ^{-0.022}	70 ^{-0.015}	70.2	18	1.5	10400		132, 158, 224, 1260, 1272, 1278, 1280, 1290, 2265, 2356, 2358, 2441, 2384, 2440, 2312.	
10	3-V-0160-02888	51116	0.948	105 ^{-0.022}	80 ^{-0.015}	80.2	19	1.5	11600		160, 1273, 1281, 1285 & 1291	
11	3-V-0181-02888	51117	1.010	110 ^{-0.022}	85 ^{-0.020}	85.2	19	1.5	12500	181, 182, 183, 184, 185, 186, 1223, 1224, 1229, 1230, 1252, 1253 & 1254	116, 117, 1240, 1241, 1282, 1288, 113.	
12	3-V-1217-02888	51217	2.840	125 ^{-0.025}	85 ^{-0.020}	85.2	31	1.5	22000	1217 & 1218, 1579		
13	3-V-1286-02888	51222	5.670	160 ^{-0.025}	110 ^{-0.020}	110.2	38	2	37500		1286 & 1292	
14	3-V-1388-02888	51218	1.77	135 ^{-0.025}	90 ^{-0.020}	90.2	35	-	27000	1388		
15	3-V-1510-02888	51112	0.29	85 ^{-0.022}	60 ^{-0.015}	60.2	17	-	9300	1510, 1550		
16	3-V-1551-02888	51206	0.15	52 ^{-0.019}	30 ^{-0.010}	30.2	16	1	4800	1551		
17	3-V-9998-02888	51305	0.18	52 ^{-0.019}	25 ^{-0.010}	25.2	18	1	5100	1551		
18	3-V-1552-02888	51308	0.55	78 ^{-0.019}	40 ^{-0.012}	40.2	26	1.5	11200	1552		
19	3-V-9999-02888	51407	0.79	80 ^{-0.020}	35 ^{-0.012}	35.2	32	1.5	12700	1552		
20	3-V-1592-02888	51214	0.79	105 ^{-0.022}	70 ^{-0.015}	72	27	1.5	16300	1592, 1593, 1635, 1624		



REMARKS

1. THE TOLERANCES GIVEN FOR ϕD & ϕd ARE APPLICABLE ONLY TO THE DIAMETERS INDICATED BY THE THICK LINES IN THE SKETCH.
2. THE LATEST STROKE NUMBER OF THE MAIN DRG IS APPLICABLE TO ALL APPARENT DRG NOS. ALSO.
3. PREFIX 55211 TO BEARING NOS. TO GET THE MATERIAL CODE.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT: **TRACING REDRAWN ON 18-11-82**

00547 142

Bharat Heavy Electricals Ltd.,
BOILER PLANT UNIT,
TIRUCHIRAPALLI-620 014

DRN: EC-005
CHKD: D. VIJAY
APPD: V. BABU

SIGN: [Signature]
DATE: 18-11-82

REV 03	DATE 21-5-77	ALTERED K.T. Nair	REV 02	DATE 22-9-75	ALTERED D.V. KUMAR	REV 01	DATE 18-02-75	ALTERED A. SESHADRI
		CHECKED C. Gopal			CHECKED B. Jagadeesan			CHECKED B. Jagadeesan
ZONE (b)	SL.No. 20 INCLUDED FOR 10, 12/150 LB & 10"-300LB & 250/16		ZONE (c)	1. SL.Nos 16, 17, 18 & 19, INCLUDED. 2. IN REMARKS SL.NO 2 DELETED. 3. MAIN DRG. NO CHANGED AS 3-V-0000-02888/2 4. IN REMARKS SL.NO.3 ADDED.		ZONE 1	SL.No. 14 & 15 INCLUDED	

DEPT. VL: 320
GRADE OF UNTOL. DIM: e/M/F
SCALE: [Symbol]
WEIGHT (kg): U 01
TITLE: **THRUST BALL BEARING**
DRAWING NO.: **3-V-0000-02888**
REV: **3**