



Gujarat Mineral Development Corporation Limited

Tender Document For

The Work of “Supply and Replacement of Spares for Boiler and ESP”

At

GMDC’s 2x125 MW Akrimota Thermal Power Station

Tender Number: GMDC/POWER/ATPS/ 04 /24-25

**GENERAL MANAGER (POWER)
Gujarat Mineral Development Corporation Ltd.
(A Govt. Of Gujarat Enterprise)**

CIN: L14100GJ1963SGC001206, GST: 24AAACG7987P1ZT

**Khanij Bhavan, 132’ Ring Road, University Ground, Vastrapur, Ahmedabad 380 052
EPABX: 079-27913501, 27913200**

E-mail: gm.power.co@gmdcltd.com, Website: www.gmdcltd.com



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TENDER NOTICE

Tender Number: GMDC/POWER/ATPS/ 04 /24-25

| | |
|------------------------------------|--|
| Brief Description of work | The Work of “Supply and Replacement of Spares for Boiler and ESP” as per scope of work |
| Location of Work | The required materials to be supply and replacement at 2x125 MW Akrimota Thermal Power Station, Village: Nanichher, Taluka: Lakhpat, District: Kutch, Gujarat. |
| Period of contract | The period of contract will be 04 months from the date of acceptance of LOI. |
| Estimated Contract Value | Approximately Rs. 4,82,50,000 (Rupees Four Crore Eighty-Two Lakhs Fifty Thousand only) for total work excluding GST. |
| Availability of Tender | Tender Document will be available on the GMDC website (www.gmdcltd.com) and nprocure portal (https://gmdctender.nprocure.com). Price Bids shall be required to be submitted online only on the n-procure portal (https://gmdctender.nprocure.com). |
| EMD (Earnest Money Deposit) | Rs. 14,47,500/- (Rupees Fourteen Lakhs Forty-Seven Thousand Five Hundred only) in Form of ➤ DD in favor of GMDC Ltd. Payable at Ahmadabad. ➤ Digital Mode, please note if payment is made through Digital Mode kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure-B) ICICI Bank, Ahmadabad Branch, Ahmadabad Account Number: 002405019379 IFSC: ICIC0000024 <i>Relaxation in terms of submission of EMD shall be given to the bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Tender.</i> |
| Tender Processing Fee | Rs.15000/- (Two Fifteen Thousand only) plus GST @ 18% aggregating to Rs.17,700/- payable by Demand Draft/ Pay Order drawn in favor of “GMDC Ltd.” payable at Ahmadabad. <i>Relaxation in terms of submission of Tender Processing Fee shall be given to the bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Tender.</i> |



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|---|--|
| Commencement of tender | From - 24th Sept 2024 |
| Last date for download the tender document. | 04th Oct 2024 up to 18.00 Hours |
| Last date of submission of bid through online | 04th Oct 2024 up to 18.00 Hours |
| Last date of submission of physical documents i.e. EMD, Tender Processing Fee etc. | 04th Oct 2024 up to 18.00 Hours at Corporate Office, GMDC, Ahmedabad |
| Date and time for online opening of preliminary bid. | 05th Oct 2024 at 11.00 Hours |
| General and Important Terms and Conditions | <ol style="list-style-type: none"> 1. GMDC reserves absolute right/discretion to accept and/or reject any or all the tenders received or invite fresh bid at any stage or split the work between more than one Bidders as the case may be. 2. The Bidders are required to quote the rate as per the terms and conditions mentioned in the Tender document. Conditional tender shall not be entertained and will be rejected summarily without assigning any reasons, whatsoever. 3. GMDC may issue amendments/corrigendum in the tender documents, schedule, forms etc. at any time during the period between publication of notice and submission of bids of the tender on website. The Bidders in their own interest are advised to visit the website regularly till the last date of submission of the bid. No separate newspaper advertisement will be released for amendments/corrigendum. 4. GMDC reserves the rights to modify or alter any Condition of the Tender. 5. The Bidders are advised to submit their price bid online on https://www.gmdctender.nprocure.com only. Physical price bid shall not be accepted and shall be rejected summarily without assigning any reasons, whatsoever. 6. Failure to submit online bid in stipulated time due to any reason whatsoever by any Bidder shall result in disqualification of bid. In such circumstances, bid submitted physically along with supporting documents, tender processing fees, EMD amount etc. shall not be considered as bid submitted and the same will be returned back to the Bidder without opening the same. GMDC reserves the right to take suitable decision in this regard. |



1. Purpose of the Document

The Tender Document (this document) floated by GMDC (Gujarat Mineral Development Corporation Limited), A Government of Gujarat Enterprise is to select a successful bidder who would be responsible for the work of “Supply of Spares for Boiler and ESP” as per scope of work at Akrimota Thermal Power Station at the quoted commercials and executed contract terms & conditions.

2. About GMDC

Gujarat Mineral Development Corporation Limited herein after referred to as GMDC, a Government of Gujarat Enterprise, is a pioneer company in the field of mining for six decades, catering to the needs of the minerals and solid fuel for the industries based in Gujarat. GMDC’s mining activities are spread all over Gujarat. It is currently dealing in minerals like Lignite, Bauxite, Fluorspar, Ball Clay, Silica sand and Manganese. GMDC has also set up a 250 MW lignite based Thermal Power Station at Nani Chher in Kutch, Wind power plant of 200.9 MW at Maliya, Jodiya, Godsar, Bhanvad, Bada, Varvada, Rojmal and Solar Power plant of 5 MW at Panandhro Project.

3. Location of Work

Akrimota Thermal Power Plant Station (ATPS) is located at Village Nani Chher of Lakhpat Taluka in Kutch District of the Gujarat State. The project is located about 150 kms from Bhuj. The nearest Railway Station and Airport is at Bhuj.

4. About ATPS

GMDC has 2*125 MW Thermal Power Project called ATPS. Both the units have been in commercial operation since March, 2005. It is getting Lignite from its own mines located at Mata no Madh and Umarsar. The water requirement for the power plant is taken from the nearest Kori Creek through a 1.4 KM long sea water intake channel. The CFBC boiler is used here as it is environment friendly and controls sulphur in the flue gas emission. A 100 metre thick green belt surrounds the entire site. The state of the art technology DCS has been used.



5. General Instructions to Bidder

The section aims to provide guidelines/Instructions for Bidders, to be used while submitting the Proposals.

5.1 Cost of Bidding

The Bidder shall bear all costs associated with the preparation and submission of its bid and GMDC LTD., shall no event or circumstance be held responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

5.2 Due Diligence

The Bidder is expected to and shall be deemed to have examined all instructions, forms, terms and specifications and other information in this Tender Document. The bid should be precise, complete and in the prescribed format as per the requirement of the Tender Document. Failure to furnish all information required by the Tender Document or submission of a bid not responsive to the Tender Document in every respect will be at the Bidder's risk and may result in rejection of the bid. GMDC LTD. shall at its sole discretion be entitled to determine the adequacy/ sufficiency of the information provided by the Bidder.

5.3 Clarification of Bidding Documents

GMDC LTD. shall make best efforts to respond to any request for clarification of the Tender Document. The response/clarification shall to the extent possible be made in writing.

5.4 Amendment of Tender Document

At any time before the deadline for submission of bids, GMDC LTD may modify the tender Document for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Tender Document by amending, modifying and/or supplementing the same. Any amendments/modifications in the tender document would be displayed on GMDC Web Site/nprocure website and all such amendments shall be binding on the Bidder without any further act or deed on GMDC LTD part. In the event of any amendment, GMDC LTD reserves the right to extend the deadline for the submission of



the bids, in order to allow prospective Bidder reasonable time in which to take the amendment into account while preparing their bids. GMDC LTD may at its sole discretion, extend this deadline for submission of bids by amending the bid documents.

5.5 Contact Details

All inquiries concerning this procurement are to be addressed to the following:

GENERAL MANAGER (POWER)
Gujarat Mineral Development Corporation Ltd.
(A Govt. Of Gujarat Enterprise)

Khanij Bhavan, 132' Ring Road, University Ground, Vastrapur, Ahmedabad 380 052
EPABX: 079-27913501, 27913200
E-mail: gm.power.co@gmdcltd.com, Website: www.gmdcltd.com

5.6 Language of Bid

All Proposals and various documents related to these Proposals should be in English Language. All correspondence between GMDC LTD., and the Bidder would also be in English Language. Supporting Documents and Printed Literature furnished by the Bidder may be in another Language provided the same are accompanied by an accurate translation in English Language.

5.7 Late Bids

Any bid received by GMDC LTD. after the deadline for submission of bids prescribed by GMDC LTD., summarily rejected. GMDC LTD. shall not be responsible for any postal delay or non-receipt /non-delivery of the documents. No further correspondence on this subject will be entertained.

5.8 Right to Accept Proposal

GMDC LTD reserves the right to accept or reject any Proposal, and to annul the Proposal process and reject all Proposals at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or any obligation to inform the affected Consortium of the grounds for such decision.



5.9 Period of Validity of Bids

Bids shall remain valid for 180 days after the date of bid opening prescribed by GMDC LTD, pursuant to the Tender schedule mentioned in this document. In exceptional circumstances, GMDC LTD. may solicit the Bidder's consent to an extension of the period of validity. The request and the response thereto shall be made in writing. Extension of validity period by the Bidder shall be unconditional.

5.10 Subcontract

The Successful bidder shall not assign or sub-contract any portion of this work without prior written consent of GMDC.

5.11 Consortium / Joint Venture

Consortium / Joint Venture are not allowed.

5.12 Change in Law

Nothing in this contract shall entitle the Bidder to claim additional payment against the work executed or being executed or likely to be executed upon the change in law by Government of India or State of Gujarat as regards any taxes, liabilities arising out of work contract, judgments of court etc. That nothing under the said laws shall create any additional liability on the GMDC over and above that set out herein. That unforeseen circumstances in the working of the said contract shall not entitle the Successful Bidder to abandon or demand additional payment under a different head not originally mentioned herein and hence nothing except what is contained in the present contract shall constitute binding obligations between parties.

5.13 Interpretation

That no communication preceding or following the present tender shall have any bearing on the terms and conditions set out herein. That no contract, promise or obligation shall arise out of the said communication, over and above what is set out herein above. That the terms contained herein constitute the entire bargain between the parties and shall not be interpreted in the light of commercial correspondence between the parties.



5.14 Declaration

The Bidder should submit the declaration regarding unconditional acceptance of all the terms and conditions of the Tender document including Annexure and corrigendum if any and it has not enclosed any conditional offer as per FORM PD provided in the Tender Document.

GMDC is authorized to take suitable decision and action in case of requirement to amend/alter the contract conditions/quantities of the works/ extension of the contract period/allotment of additional works/revision of the rates of the work etc. if necessary, in the interest of GMDC.

The Successful bidder shall not change the constitution of the firm/name during the currency of the contract without prior approval of GMDC. Upon such change in constitution and/or name, Supplementary agreement to that effect shall be executed and if the SD is submitted in form of BG/FD than fresh BG in the name and/or constitution shall be submitted failing which necessary action as deemed fit by GMDC shall be taken.

6. Earnest Money Deposit

A non-interest-bearing Earnest Money Deposit Rs. 14,47,500/- (Rupees Fourteen Lakhs Forty Seven Thousand Five Hundred only) in any one of following form

- Demand Draft in favor of GMDC Limited Payable at Ahmadabad

OR

- Digital Mode, please note if payment is made through Digital Mode kindly submit the receipt of the same in the attached documents. RTGS details for payment (Annexure-B)

ICICI Bank, Ahmedabad Branch, Ahmedabad

Account Number: 002405019379

IFSC: ICIC0000024

Relaxation in terms of submission of EMD shall be given to the bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Tender.



7. Tender Processing Fee

The Tender Processing Fee is to be paid at the time of submission of supporting document of technical bid in the form of demand draft of Rs. 15,000/- plus GST @ 18% (Rs. 2700) aggregating Rs 17,700/- as mentioned in tender notice in the sealed technical bid cover.

If the amount mentioned in the DD is found short, the tender will not be considered for scrutiny and will be out rightly rejected.

Relaxation in terms of submission of Tender Processing Fee shall be given to the bidder who is holding valid Certificate issued under the MSME Act, 2006 on the date of submission of Tender.

8. Security Deposit

8.1 Security Deposit is measure of liquidated damages sustained by GMDC for not performing the contract satisfactorily. Nothing herein above shall disentitle GMDC from claiming the damages actually sustained in the value over and above the Security Deposit.

8.2 The successful bidder shall submit security deposit of 10% of the total contract value excluding Goods & Service Tax (GST) Within 10 days from the date of receipt of acceptance of LOI in any one of following form.

➤ Demand Draft in favor of GMDC Limited Payable at Ahmadabad

OR

➤ Bank Guarantee issued by banks approved by Govt. Of Gujarat from time to time (except Co-Operative bank) in the form and manner acceptable to GMDC (Govt. GR is annexed at “B” for approved bank). It should be valid for a period of contract period from the date of receipt of LOI and shall be renewed from time to time in case of requirement.

8.3 It shall be refunded to the Successful bidder, within a period of six months after satisfactory completion of the work and the due fulfillment of all the terms and conditions of the contract.

8.4 The Successful bidder shall obtain “No Dues Certificate”, and “Work Completion Certificate” from Head (PP & A) ATPS and shall submit the same to General Manager (Power) at HO, who after verification of the fact will arrange for refund of SD.



8.5 The successful bidder will also have to submit “NO DEMAND CERTIFICATE” along with the above mentioned certificate.

8.6 The SD deposited by the Successful bidder shall be forfeited if the successful bidder fails to adhere to fulfill the conditions of work order.

8.7 Security deposit shall not bear any interest under any circumstances.

8.8 GMDC will reserve the right to recover the charges or the liquidated damages from the Security Deposit in the following circumstances-

8.8.1 If the successful bidder or its employees causes any damage or destroy any property belonging to GMDC.

8.8.2 The shortfall amount of all compensations, penalties, and other sums of money payable by the successful bidder or recoveries to be made under the terms of this contract which is due but not paid by the successful bidder in full, etc.

8.8.3 Any other dues on account of statutory compliance.

9. Procedure for Submission of the Bid

9.1 Offers prepared in accordance with the procedures enumerated below.

9.2 Bid should be submitted **online** at www.nprocure.com on or before the last date and time as prescribed in this tender.

9.3 The Bidder should submit their bids in Three parts, these are

9.3.1 Prequalification bid (Details of EMD and Tender processing Fee),

9.3.2 Technical Bid

9.3.3 Price Bid.

9.4 Manual price bids or the bids submitted by e-mail etc. will not be accepted under any circumstances. No correspondence will be entertained on this matter.

9.5 Bidders are advised to follow the ‘Instructions for Bids Submission’ given annexure “A” for e-submission of the bids online through n-procure.

Documents should be submitted as per check list given in form “PA” through ‘off-line’ in the sealed cover super-scribed as **“Technical Bid for Tender Number GMDC/POWER/ATPS/04 /24-25 and Name of work: “Supply and replacement of Spares for Boiler and ESP” at at**



2x125 MW Akrimota Thermal Power Station, Village: Nanichher, Taluka: Lakhpat, District: Kutch, Gujarat.

Bids must be submitted as per the schedule (date & time) indicated in tender notice.

10. Eligibility and Qualification Criteria of Bidder

10.1 Experience

The Bidders should have following minimum experience of having successfully completed similar works during last 7 (seven) years ending on last day of Aug 2024 (i.e. period from 01.09.2017 to 31.08.2024):

A. Three similar completed works each having amount of Rs 1,93,00,000/- (Rupees One Crore Ninety Three Lakhs Only) or more during last 7 (seven) years. (i.e. period from 01.09.2017 to 31.08.2024)

OR

B. Two similar completed works each having amount of Rs 2,41,25,000/- (Rupees Two Crore Forty One Lakhs Twenty Five Thousand Only) or more during last 7 (seven) years. (i.e. period from 01.09.2017 to 31.08.2024)

OR

C. One similar completed work having amount of Rs 3,86,00,000/- (Rupees Three Crore Eighty Six Lakhs Only) or more during last 7 (seven) years. (i.e. period from 01.09.2017 to 31.08.2024)

Similar works means the Bidders should have experience to carry out one or more following works for Government/Semi Government / Corporation/Private Limited Company and should have been carried out under the single LOI/Work Order/Agreement.

- Design, Supply, Installation, Testing & Commissioning work of Boiler / ESP/ MHP of power plant and should have been carried out under the single LOI/Work Order/Agreement.

OR



- Supply of industrial spares and should have been carried out under the single LOI/Work Order/Agreement

Bidder shall submit the details of work completed in form PC as provided in the Tender Document Separate year wise Statement of experience with work orders and work executed certificates (Work Completion Certificate) duly certified by the certificate issuing authority shall be submitted as supporting documents.

Copies of these supply orders should be attached with the Technical Bid

10.2 Financial

10.2.1 Bidder must have an average positive Net Worth as on last three financial year of 31.03.2022, 31.03.2023 and 31.03.2024.

10.2.2 Bidder must have a Minimum Average Turnover of Rs 1,44,75,000/- (Rupees One Crore Forty Four Lakhs Seventy Five Thousand Only) for financial year ending on 31.03.2022, 31.03.2023 and 31.03.2024.

10.2.3 A certificate from Chartered Accountant regarding financial capacity shall be submitted as per format provided in FORM PC of the Tender Document.

10.3 Site Visit Certificate

The Bidders are requested to carry out site visit to understand the actual requirement of spares and specifications if any and should give a declaration of site visit as per the format provided in FORM PG of the Tender Document.

10.4 Blacklisting of the Bidder

The Bidder or its directors have not been blacklisted by any Government Organization. The Bidder will submit a declaration to this effect as per the format provided in FORM PD of the Tender Document. If at any time such declaration is found false, the bid will be rejected or if the contract work is already awarded, it will be terminated forthwith without payment of any compensation and the EMD/SD will be forfeited.



11. Evaluation of Bids

11.1 Completeness of Bids

GMDC, will examine the bids to determine whether they are complete, whether they meet all the conditions of the Tender Document and Technical Specifications, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bid Documents are substantially responsive to the requirements of the Tender Document.

11.2 Tender Clarifications

The GMDC may at its discretion, seek from any or all bidders, clarifications on his/their bids, including technical information, documents and materials after technical bid opening but before opening of commercial bid.

11.3 Rejection of Bid

A bid that does not meet all eligibility criteria or is not responsive shall be rejected by GMDC. Submission of false or incorrect information, history of delayed work, reports of unprofessional conduct, among other things, shall be sufficient grounds for disqualification in technical bid.

11.4 Opening of Bids

Technical bids will be opened after verification of receipt of payment towards Tender Processing Fee and EMD. The eligible bidders will be able to view the technical bids after opening of technical bid. On verification of the supporting documents, technical qualification of the bidders will be assessed. The eligible bidders will be communicated the date and time of online opening of price bids by telephone or email. However, all bidders will be able to view the price bids online on their computers after opening of price bid.



11.5 Selection of Bidder

The contract will be awarded to the bidder who stands L1 in total price. The GMDC reserves its right to reject any or all tenders or split the job between more than one bidders without assigning any reason and thereby without incurring any liability to the affected successful bidder or Bidders or any obligation to inform the affected successful bidder or bidders of the grounds for GMDC Ltd., action/decision.

11.6 Discussion

It is essential for the successful bidders to quote the lowest price at the time of making the offer in their own interest. GMDC, however, will have the discretion to choose to enter any mode of discussion or not.

11.7 Acceptance of LOI and Issuance of Work Order:

- 11.7.1** GMDC, on acceptance of the offer, will issue Letter of Intent to the successful bidder, who will be required to confirm its acceptance of the LOI within 10 days from the date of receipt. If he does not accept the LOI within stipulated period, the amount of the EMD paid will be forfeited and necessary further actions may be initiated as may be deemed fit by the GMDC.
- 11.7.2** The Successful bidder shall have to submit the Security Deposit with within 10 days from the date of LOI. The Successful bidder shall submit the Security Deposit in the manner prescribed in this Tender Document after that issuance of work order. In case of failure to submit the security deposit, the amount of EMD will be forfeited and necessary further actions may be initiated as may be deemed fit by the GMDC.
- 11.7.3** GMDC will award the Work Order to the successful bidder, after the payment of Security Deposit, in token of acceptance of the terms and conditions of the contract, within 30 days from date of LOI. In case of any necessity arising after executing work order and during the execution of the work, which requires alteration/modifications in the agreement, the same can be made in writing after mutual understanding and consent of both the parties.



12. Scope of Work with BOQ

Supply and Replacement of Spares for Boiler and ESP as per following details specifications and Qty.

| Plan | Sr. No. | Component/ Area | Item | Unit | Qty. |
|---------------------|---------|-----------------------|--|------|------|
| Auxiliary Boiler | 1 | Auxiliary Boiler | Supply and replacement of Bricks Fire Size 230x115x75mm, 400°C | Nos | 8000 |
| Ash handling system | 2 | Ash cooler | Supply and replacement of Ash rotary seal, 400x400mm with isolation gate and geared motor as per Drawing | Nos | 4 |
| | 3 | Ash cooler | Buffel plate assembly, SIZE: 3 X 1.5Mtr , Material - SS310 | Nos | 2 |
| | 4 | Soot blower | Supply and replacement of Soot blower MODEL NO.G9B, MAKE – ALSTOM for TAPH | Nos | 9 |
| | 5 | Soot blower | Supply and replacement of Soot blower, MODEL NO.IK 300, MAKE – ALSTOM, for HRSB | Nos | 5 |
| | 6 | Soot blower | Supply and replacement of LANCE TUBE, PART NO.35 50503444, MODEL NO.IK-300, MAKE:ALSTOM, FOR FULL TRAVEL SOOT BLOWER. | Nos | 4 |
| | 7 | Soot blower | Supply and replacement of LANCE TUBE, PART NO.35 50503821, MODEL NO.IK-300, MAKE:ALSTOM, FOR HALF TRAVEL SOOT BLOWER | Nos | 4 |
| | 8 | SWAS | Supply and replacement of Primary cooler Model No. SC-4- 18-SS Sr. No J0518 Tube side Design Press-250 Kg/cm ² and Temperature- 580 °c , Shell side : Design temp : 350 deg, Hydro test press: 35 kg/cm ² Design pressure: 250 kg/cm ² , Make- Steam Equipments | Nos | 3 |
| | 9 | Furnace & second pass | Fins | Mtr | 100 |
| | 10 | Furnace & second pass | Fins | Mtr | 100 |
| | 11 | Furnace & second pass | Fins | Mtr | 100 |
| | 12 | Furnace & second pass | Fins | Mtr | 100 |
| | 13 | Furnace & | Fins | Mtr | 100 |



| | | second pass | | | |
|---------|----|---------------------------|---|-----|----|
| Cyclone | 14 | Non- metallic bellow | Supply and replacement of NMEJ Duct Tag No. EJ-1 Type- KEI FF 25 F, 40XF2W , Size:4250mmX6800mm width: 650mm ,Suitable for degree C, temperature & lignite contain with sulphur drawing No. KE-EN 0209.01 with fastener | Nos | 4 |
| | 15 | Non- metallic bellow | Supply and replacement of NMEJ Cyclone outlet Tag No.EJ-2 Type : F-Fabric combination sulphur , Size:4600mmX4800mm width:550 mm with fasteners. | Nos | 4 |
| | 16 | Non- metallic bellow | Supply and replacement of TAG NO. EJ-04, type:40x-w, size: D-22506mm,D-2750mm,S- 550MM, MEDIA: flue gass + ash , temp;1000deg., including fastener, make: keld for down comer | Nos | 4 |
| | 17 | SA Fan | Supply and replacement of INLET SILENCER OF 2030MM DIA DLBAB-11 SECONDARY AIR FAN, DRAG NO. K-4765, PART NO. 19 | Nos | 3 |
| | 18 | PA Fan | Supply and replacement of INLET SILENCER FOR 2350 MM DIA DI-BAB-11, PART NO.19, DRAWING NO. K-4762 , MAKE: ANDREW YULE. APPLICATION- PA FAN | Nos | 4 |
| | 19 | PA Fan | Supply and replacement of LOCATING (DE), FOR SA FAN BEARING WITH HOUSING. FAN SIZE/TYPE:2030 MM DIA DIBAB-11 SA FAN, BEARING SIZE/TYPE: 4.1/2" DIA RI TYPE WATER COOL SHAFT DIA. AT BEARING:101.6MM, TYPE: JOURNAL, MATERIAL:CAST IRON, LINER MATERIAL:WHITE METAL. | Nos | 1 |
| | 20 | ID Fan | Supply and replacement of Angular contact ball bearing 7230 BMPUA make: SKF | Nos | 2 |
| | 21 | ID Fan | Supply and replacement of Angular contact ball bearing 7322 B TVP UA, B make: SKF | Nos | 2 |
| | 22 | ID Fan | Supply and replacement of Cylindrical roller bearing, NU230 MAC3 | Nos | 1 |
| | 23 | ID Fan | Supply and replacement of Cylindrical roller bearing, NU 1040 MAC3 | Nos | 1 |
| Valves | 24 | Eco and ring header drain | 80NB,1500 class,Butt Weld, Globe valve, Make-BHEL | Nos | 10 |



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| | | valve Supply and replacement of | | | |
| | 25 | Start-up vent MOV Supply and replacement of | 100NB, 2500 class, Wedge Gate valve, Butt Weld, Make- BHEL, Motor Operated | Nos | 2 |
| | 26 | Startup vent control valve Supply and replacement of | 100NB, 2500#,Butt Weld,Make-BHEL, Pneumatic operated | Nos | 2 |
| | 27 | SH drain MOV Supply and replacement of | 80NB,2500#, Wedge gate valve, Make-BHEL, Motor operated | Nos | 2 |
| | 28 | Boiler fill Drain Line Supply and replacement of | 3",900 class,Butt Weld,WC6, Make-BHEL, Butt Weld, Manual operated | Nos | 16 |
| | 29 | Boiler fill Drain Line Supply and replacement of | 1.5",2500 class, Socket Weld, Globe valve, Make-BHEL | Nos | 10 |
| | 30 | Boiler fill Drain Line Supply and replacement of | wedge gate valve,80NB, 600class, Buttt weld, Make - BHEL, Motor operated | Nos | 4 |
| | 31 | IBD MOV Supply and replacement of | Globe valve, 150 NB, 1500 Class, Butt weld, Make- BHEL , Motor Operated | Nos | 2 |
| | 32 | L-valve Supply and replacement of | Metallic Bellow for L-valve, Size:1000x580mm Length Type: Double Universal, Design Temp (Skin/Flow): 250/1250°C, Pressure:1.05 Kg/Cm2, Media: Ash As Per Drg No.Sc-7236-4279, Rv-01, Make: Shivam Cast. | Nos | 2 |
| | 33 | L-valve Supply and replacement of | Hose Size:1" Bsp & 1500 Mm, Class:150 # Flanged At One Side & Other Side Female Fitting Long,Pcd-86Mm, Moc: SS 304 (For Fluidizing Hose) | Nos | 20 |
| | 34 | Boiler fill Drain Line Supply and replacement of | 150 NB, 1500 Class, Butt weld, Make-Fisher, Pneumatic Operated | Nos | 1 |
| Lignite Feeding system | 35 | Gravimetric feeder | Supply and replacement of RUBBER SIDE WALL BELT WITH BOTTOM PROFILES XE/504 BELT WIDTH:1000 MM,THICKNESS:12 MM,PLY:4 PLY, TOP COVER:6MM,BOTTOM COVER:2 MM,BELT LENGTH:60 MTRS,OPEN END SIDE WALL HEIGHT:70 MM, BELT GROOVE AT THE BOTTOM:30 MM AT THE TOP AND BOTTOM:18MM,HEIGHT:12 MM (TWO | Nos | 2 |



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| | | | GROOVES AT THE BOTTOM OF THE END) | | |
| 36 | Gravimetric feeder | Supply and replacement of Fastener Kit RAR5- SE-48-ACS-CS Kit For Belt Width-1200Mm Belt Thick-10-12Mm Make Flexco, Application- Gravimetric Feeder | Nos | | 8 |
| 37 | Gravimetric feeder | MSRT Machine, Size: 60",Make: Flexo, For Gravimetric Feeder Belt Riveting | Nos | | 1 |
| 38 | Gravimetric feeder | Supply and replacement of Rib For Feeder Belt As Per Drawing, Application: Gravimetric Feeder | Mtr | | 50 |
| 39 | Gravimetric feeder | Supply and replacement of BELT DRIVE REDUCER RATIO-100:1, PART NO. C21968- 1 G 01 AY 1953 DRAWING NO. A28420- REV-0 SHEET-1/6 MAKE: STOCK | Nos | | 1 |
| 40 | Gravimetric feeder | Supply and replacement of Pulley head lagged material conveyor GRP LPG 30 Schenck process part No.AB16268-1, Application: Gravimetric feeder head end pulley | Nos | | 2 |
| 41 | Gravimetric feeder | Supply and replacement of SELF CLEANING SCREW PULLEY, SIZE: CAGE OD-365 MM, CAGE THICKNESS-12 MM,CAGE LENGTH- 1074 MM,MATERIAL-EN-8, SHAFT OD- 72MM, LENGTH-1162 MM, MATERIAL-EN- 19 AS PER DRAWING APPLICATION- GRAVIMETRIC FEEDER TAIL END SIDE | Nos | | 1 |
| 42 | Gravimetric feeder | Supply and replacement of MS solid Roller, Length- 1236mm, dia-63.5mm, At bearing dia- 19.05mm, AS per Drawing | Nos | | 150 |
| 43 | Gravimetric feeder | Supply and replacement of Bearing FY 3/4" TF | Nos | | 300 |
| 44 | Gravimetric feeder | Supply and replacement of MS hollow roller, Length- 1226mm, dia of rollar-203mm, Thickness-6mm of Pipe,At bearing area-25.5mm AS per Drawing | Nos | | 30 |
| 45 | Gravimetric feeder | Supply and replacement of Bearing FY 1" TF | Nos | | 60 |
| 46 | Gravimetric feeder | Supply and replacement of Modified Carrying Roller With Gland Stuffing Box And Pusher Application : Gravimetric Feeder | Nos | | 15 |
| 47 | Gravimetric feeder | Supply and replacement of SYJ35 TF | Nos | | 40 |
| 48 | Gravimetric feeder | Supply and replacement of Bearing 22217 EK C3 WITH | Nos | | 2 |



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| | | | SLEEVE H- 317 | | |
| 49 | Gravimetric feeder | | Supply and replacement of AS per sample , MOC-MS 20mm plate and 3mm liner plate, Rack angle 75mm with slot 50nOs. As per drawing | Nos | 1 |
| 50 | Gravimetric feeder | | Supply and replacement of ROLLER, PART NO.W-1864-1, MAKE: LINK BELT, FOR GRAVIMETRIC FEEDER | set | 4 |
| 51 | Gravimetric feeder | | Supply and replacement of RACK ANGLE , SIZE: 75MM X 75MM X 12MM, MOC: SS310, LENGTH: 1765MM WITH SLOTTING AS PER DRAWING | Nos | 2 |
| 52 | Gravimetric feeder | | Supply and replacement of Bearing ,Part No.B 114, Make: Link Belt For Gravimetric Feeder | Nos | 8 |
| 53 | Gravimetric feeder | | Supply and replacement of CHAIN LINK ASSEMBLY AS PER DRG NO-1.47740/00885- 0207 WITHOUT FLIGHT | Nos | 756 |
| 54 | Gravimetric feeder | | Supply and replacement of CHAIN LINK ASSEMBLY AS PER DRG NO-1.47740/00885- 0207 | Nos | 84 |
| 55 | Gravimetric feeder | | Supply and replacement of SPROCKETS FOR 142 MM FORGED CHAIN LINKS, APPLICATION: CLEAN OUT CONVEYOR (COC) AS PER DRAWING | Nos | 4 |
| 56 | Gravimetric feeder | | Supply and replacement of (SYJ 70 TF/ UCP 214) and (SYJ 60 TF) | Nos | 7 |
| 57 | Lignite drag link Conveyor | | Supply and replacement of LIGNITE DRAGLINK CHAIN LINK ASSEMBLY INCLUDING CIRCLIP, PIN, SS BOLTS & NUTS ETC. AS PER DRAWING ATTACHED | Nos | 66 |
| 58 | Lignite drag link Conveyor | | Supply and replacement of GEAR-MOTOR MECHANISM, MODEL NO. R97DV132M4/TF- RATED POWER 7.5 KW, GEAR RATIO: 59.92, MAKE: SEW- EURO DRIVE, FOR LIGNITE DRAGLINK CONVEYOR | Nos | 1 |
| 59 | Lignite drag link Conveyor | | Supply and replacement of 1. MS GUIDE RAIL, SIZE : 55X12X1500 MM 2. MS GUIDE RAIL, SIZE : 50X08X1500 MM | Nos | 372 |
| 60 | Lignite drag link Conveyor | | Supply and replacement of Used Model: Type 7000, | Nos | 4 |



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| | | | 130/180, Fabr. Maschinenlager | | |
| 61 | Lignite drag link Conveyor | | Supply and replacement of Forkey Sprocket,Od-480Mm,Pcd-265Mm,Id-235Mm,Thickness-20Mm,Moc- En-19,Teeth Surface Hard 45Hrc, For Lignite Draglink As Per Drawing(1 Set=02 Disc), Make-Rolcon, Application- Lignite Draglink Conveyor | Nos | 2 |
| 62 | Lignite drag link Conveyor | | Supply and replacement of 1. Head end shaft MS SLEEVE, SIZE: 160X170X271 MM 2. TAIL END SHAFT MS SLEEVE,SIZE:85X95X150 MM, APPLICATION- LIGNITE DRAG LINK CONVEYOR | Nos | 2 |
| 63 | Lignite drag link Conveyor | | Supply and replacement of 22230 Ek/C3 , Make: Skf | Nos | 2 |
| 64 | Lignite drag link Conveyor | | Supply and replacement of Size: H-3130, Make: Skf | Nos | 1 |
| 65 | Lignite drag link Conveyor | | Supply and replacement of 22219 Ek , Make: Skf | Nos | 2 |
| 66 | Lignite drag link Conveyor | | Supply and replacement of SLIDING 5MANUAL GATE FOR LIGNITE DRAG LINK, EFFECTIVESIZE- 1200X1020MM,EFFECTIVE TEMP-500°C, PRESSURE-0.7 BAR, MEDIA-LIGNITE AND AIR AS PER DRAWING 1.47740/00300-0083 | Nos | 2 |
| 67 | Lignite drag link Conveyor | | Supply and replacement of GLAND SIZE: 14 MM STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER | Nos | 5 |
| 68 | Lignite rotary air lock feeder | | Supply and replacement of GEAR-MOTOR MECHANISM, MODEL NO. R97DV132M4/TF- RATED POWER 7.5 KW, GEAR RATIO: 59.92, MAKE: SEW- EURO DRIVE,FOR LIGNITE DRAGLINK CONVEYOR | KG | 1 |
| 69 | Lignite rotary air lock feeder | | Supply and replacement of W BASF55x72x10/7-NBR | Nos | 5 |
| 70 | Lignite rotary air lock feeder | | Supply and replacement of W4087 M12x1,5-CuZn-HEI | Nos | 5 |
| 71 | Lignite rotary air lock feeder | | Supply and replacement of bearing 30212 | Nos | 4 |
| 72 | Lignite rotary air lock feeder | | Supply and replacement of bering 32306 | Nos | 6 |
| 73 | Lignite rotary air | | Supply and replacement of bearing 32206 | Nos | 6 |



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| | | lock feeder | | | |
| 74 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-110x12 | Nos | 5 | |
| 75 | Lignite rotary air lock feeder | Supply and replacement of K/S77 R87 | Nos | 3 | |
| 76 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-72x9 | Nos | 4 | |
| 77 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-72x9 | Nos | 4 | |
| 78 | Lignite rotary air lock feeder | Supply and replacement of METALLIC EXPANSION JOINT, TYPE : RECTANGULAR, TAG NO : EJ-01,RECTANGULAR METTALIC EXPANSION BELLOW, SIZE- 950X450MM,HEIGHT- 475MM,APPLICATION-LIGNITE RALF,TAG NO.EJ-01,DESIGN TEMPERATURE-250 DEGREE CENT.,DESIGN PRESSURE- 0.5KG/CM2, AXIAL MOVEMENT/COMPRESSION- 50/50MM, INSTALLED LENGTH-475MM,NO. OF CONVOLUTION-04 NOS,DUCT ID- 964MMX464MM,INNER SLEEVE MOC-SS304(3 MM THICK),AS PER DRAWING NO, SC-3563-216-REV-01 | Nos | 2 | |
| 79 | Lignite rotary air lock feeder | Supply and replacement of SLIDING PLATE MOC-SS310, Thickness - 12mm. SLIDING MANUAL GATE FOR RALF, EFFECTIVESIZE- 1000*500MM,EFFECTIVE TEMP-500°C, PRESSURE-0.7 BAR, MEDIA-LIGNITE AND AIR AS PER DRAWING 1.47740/00300-0092(GATE SHOULD BE SINGLE OPERATED SPINDLE) | Nos | 10 | |
| 80 | Lignite rotary air lock feeder | Supply and replacement of 625 NB SS PIPE, THICKNESS- 10MM,MOC-SS 310 | Nos | 3 | |
| 81 | Lignite rotary air lock feeder | Supply and replacement of HOUSING FOR BEARING 22222 AS PER DRAWING, APPLICATION LIGNITE ROTARY FEEDER | Nos | 4 | |
| 82 | Lignite rotary air lock feeder | Supply and replacement of BEARING 22222 EK/C3, WITH SLEEVE H-322, MAKE: SKF, FOR ROTARY FEEDER NDE | Nos | 4 | |
| 83 | Lignite rotary air lock feeder | Supply and replacement of HOUSING FOR BEARING 22218 AS PER DRAWING | Nos | 4 | |
| 84 | Lignite rotary air lock feeder | Supply and replacement of BEARING 22218 EK/C3 , WITH SLEEVE H- 318, MAKE: SKF, | Nos | 4 | |



| | | | FOR LIGNITE ROTARY FEEDER | | |
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| 85 | Lignite rotary air lock feeder | | Supply and replacement of TIMING GEAR, ID-70 MM, OD: 172 MM, WIDTH: 120 MM KEY WAY WIDTH -20 MM, NO. OF TEETH-21, MOC-EN353, TOOTH HARDNESS-45 TO 50 HRC AS PER DRAWING | Nos | 1 |
| 86 | Lignite rotary air lock feeder | | Supply and replacement of TIMING GEAR, ID-100 MM, OD: 642 MM, WIDTH: 140MM KEY WAY WIDTH -28 MM, NO. OF TEETH-84, MOC-EN8, TOOTH HARDNESS-45 TO 50 HRC AS PER DRAWING | Nos | 1 |
| 87 | Lignite rotary air lock feeder | | Supply and replacement of GLAND-10 MM, STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER AND 2. GLAND-12 MM,STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER | Nos | 25 |

- Reference Drawings are attached in annexure for bid purpose only. Successful bidder has to develop drawings for the items of supply and got approved from GMDC. Your entity has to approve sample of material before bulk supply. Your entity has to give interchangeability & fitment guarantee/warranty for all developed supplied material.
- Prospective your entity may visit at site for inspection of item to be quoted. For quote purpose Your entity has to take dimensions for fitment guarantee & collect sample of material for ascertaining MOC
- Your entity shall have to supply the above spares as per the specifications otherwise shall be rejected.
- Your entity shall submit all kind of test certificate for chemical composition and mechanical properties of the supplied each materials.



- Your entity has to supply one sample along with drawing of each item for approval to GMDC, and after getting approval, shall supply balance quantity. Information to be given to GMDC well in advance.
- GMDC has right to conduct any test of all spares, if required from Govt. Approved laboratory and results of same shall be binding to your entity. Your entity may witness the same.
- Your entity need to supply OEM/OES spares with required certificate.
- Quantity of supply items may increase or decrease as per requirement of ATPS, it should be increase 10% of total contract value.
- Unloading, lifting, shifting and item code specifying and arrangement of supplied materials at designated location inside ATPS shall be in your entity's scope.

13. Period and Duration of Work

- 13.1** Supply and Replacement of all Material Within 4 months from the date of acceptance of LOI. However, period of contract may be extended for another period of three months with same terms and conditions at the sole discretion of GMDC.
- 13.2** In case of any reason including adverse working conditions during execution of the contract that may compel suspension/closure of the contract, GMDC shall be at liberty to conclude/postpone/complete/terminate/foreclose this contract. No compensation or payment shall be made on account of afore-stated events. Decision of GMDC in this regard shall be final and binding to the successful bidder.
- 13.3** GMDC reserves the right to review and assess the performance of the work at any time during the contract period. In case of poor or unsatisfactory performance and/or breach of any terms and conditions of the contract, GMDC shall have discretion to take appropriate action including termination of the contract.



14. Liquidated Damages (LD)

- 14.1** Your entity fails to supply all the spares/materials, GMDC shall reserve right to procurement of material at your entity's risk & cost with 20% administrative charges.
- 14.2** LD for late supply of spares/materials shall be leviable at @ 0.1 % of amount of particular spares/material per day for any delay beyond the time specified in the tender documents with the maximum sealing limit of 10 % of the total contract value.
- Overall cap on the total LD for delay in supply and replacement of spares and / or not supply of spares shall be maximum 10% contract value.
- 14.3** Looking to this, if the delay in completion of the works happens which can be attributed to the successful bidder, the GMDC will be free to forfeit the EMD and /or SD, or both the EMD and SD.
- 14.4** For calculation of LD, date of acceptance of LOI shall be the reference date.

15. Measurements

- 15.1** Supply and replacement of spares, equipments & Materials as per scope of supply and replacement shall be counted for payment, If the supply is not completed as per scope of supply and replacement and any part supply is done, then the part supply shall not be counted for payment.
- 15.2** Material test certificate of all supplied spare along with material.
- 15.3** The complete execution of the work with supply and replacement of Materials and as per scope of work shall be counted for payment. If the work or supply is not completed as per scope of work or supply and any part work or supply is done, then the part work shall not be counted for payment.
- 15.4** The Successful bidder has to submit the material account statement along with the work measurement sheet. Any Invoice without material account statement shall not be processed, this may please be noted.
- 15.5** All the supplied credited materials shall be the property of GMDC.
- 15.6** All the materials to be supplied as per the scope of works and or supply shall be credited to GMDC only.



15.7 The successful bidder shall ensure sufficient availability of the all type consumables and tools &tackles, etc to avoid any delay in completion of the work.

16. Transit Insurance:

16.1 Insurance –The Successful bidder shall take full responsibility to take all precautions to prevent loss or damage to the supplied material, works or part thereof for any reasons whatsoever (except for reasons which are beyond control of the Successful bidder or act of God, e.g. flood, riots, war, earthquake, etc.) and shall at his own cost, repair and make good the loss/damage to the supplied material so that on completion, the supplied material, works shall be in good order and condition and in conformity with the requirements of the Contract and instructions of the Project Authority, if any.

16.2 The cost of premiums shall be borne by the Successful bidder, and it shall be deemed to have been included in the tendered rate.

17. Goods & Service Tax

17.1 All bidders are required to submit their GST number and date in the bid. Bid received from unregistered bidder will not be considered and out rightly rejected.

17.2 Bidders are requested to quote their rates without GST. GST will be paid/adjusted/reimbursed to the Successful bidder as per prevailing rates and rules to the extent directly related to the Goods supplied by the Successful bidder under the said contract subject to production of documentary proof and the Successful bidder will mention the GST amount separately in the invoice/bill along with SAC/HSN Code under GST.

18. Payment

18.1 Successful bidder shall submit bill of supplied all items within 7 days. Running Account Bill shall be processed after issuance of work order only.



18.2 Bill shall be submitted to the office of the Head (PP & A), ATPS with following documents:

- Single RA bill submission with minimum amount of 20% of contract value of Work Order excluding GST.
- Details of spares, consumables, equipment & Material supplied with GMDC ATPS Gate Security certification, GMDC store certification & GMDC EIC inspection certificate, test certificate of spares/equipments.
- Any other documents if any as prescribed by GMDC as and when requires.

18.3 The Running Account bills, submitted at the office of General Manager (Power Project) will be processed there considering following deductions

18.3.1 Income tax as per provision of Income Tax Act, and other Taxes (and surcharges) applicable in force from time to time

18.3.2 Cost of any other services provided / material supplied plus 15% administrative charge, if any, by the GMDC.

18.3.3 Liquidated damages,

18.3.4 Other deductions, if any.

- Payment @ 100 % of the payable amount arrived after considering above deduction, will be paid by office of the Head (PP & A), within 30 days of submission of the bill along with its details. Payment shall be as per actual basis.

19. Mode Of Payment

The mode of payment will be by RTGS.

20. Performance Guarantee

20.1 For all supplied material, your entity shall abide to accept the clause for the satisfactory performance of the supplied materials with guarantee of 12 months from date of commissioning or 18 months from the date of supply whichever is earlier.

20.2 During the guarantee period, If any problem surfaces, the Successful bidder shall carry out of repairing / replacing the material or carry out work free of cost. All types



of expenses for repair, replacement, labour, insurance, statutory etc shall be in Successful bidder's scope.

- 20.3** The guarantee covers all types' causes of non-satisfactory performances except natural calamities.

21. Bankruptcy

If the Successful bidder commits an act of Bankruptcy or goes into liquidation except for construction purposes, or if its business is carried on by a receiver, such receiver, liquidator or any person in whom the contract may become vested shall forthwith give notice thereof in writing to GMDC and in reasonable time during which he shall take all reasonable steps to prevent stoppage of performance of the contract, have the option of carrying out the contract subject to his or their providing such guarantees as may be required by GMDC but not exceeding the value of the work for the time being remaining unexecuted.

In the event of stoppage of performance under the contract, the period of option under this clause shall be decided by GMDC considering the situation, provided that the above option is not exercised, GMDC may terminate the contract by serving notice in writing to the Successful bidder. The power and provision so reserved to GMDC on taking of the work out of the Successful bidder's hands shall apply as far as they may be when the contract is so terminated.

22. Notice

Written notice shall be deemed to have been duly served if delivered to the individual or to the Successful bidder or to the Signing Authority of the GMDC from whom it is intended, or if delivered at or sent by mail or post, to the last business address known to him who gives the notice.

23. Canvassing Not Permitted

- 23.1** Bidder should not canvass their offer personally or otherwise by approaching the Chairman or the Member of GMDC. If any Bidder wants to make any representation regarding his offer, he should write to the General Manager (Project) if he desires, but personal and oral representations are not permitted.



23.2 In spite of the above clear instructions, any Bidder is found to canvass his offer or against his competitor's offer through personal approach to the competent authority or the officials of GMDC, their offer will be rejected without assigning any reason and the firm even is blacklisted.

24. Non-Fulfillment of Terms and Condition of The Contract

24.1 If the Successful bidder fails to carry out the work as per terms and conditions of the contract to the satisfaction of the GMDC, GMDC shall be entitled to forfeit the security deposit paid by the successful bidder. This however, shall not absolve the Successful bidder from his obligation to fulfill the contract. In such event, the GMDC shall have a right to complete and / or to get the work completed at the cost & risk of the Successful bidder and the Successful bidder shall be responsible to pay such cost incurred by the GMDC to complete the work and / or to get the work completed.

24.2 Likewise, if the Successful bidder does not fulfill the terms and conditions of the contract and does not carry out the work up to the entire satisfaction of GMDC, GMDC has the right to forthwith terminate the contract at its sole discretion, without assigning any reason, Under such events, the GMDC shall be entitled to forfeit the security deposit paid by the Successful bidder and the GMDC shall have a right to complete the work and / or to get the work completed at the risk and cost of the Successful bidder.

24.3 For any reasons, if it is required, the GMDC reserves rights to cancel, terminate, amend and / or alter the contract and / or bifurcate and / or reduce the contract work at any time without giving any notice or reason to the Successful bidder and without incurring any responsibility.

25. General Conditions

25.1 All the persons of the Successful bidder engaged must wear Helmet and Shoes and other PPEs. As and when required other personal protective wears shall also be provided to them by the successful bidder.



- 25.2** The Successful bidder shall take adequate statutorily prescribed insurance cover for all men and machinery engaged by him/it for performance of the work at site. Any insurance claim brought against the GMDC by an individual or by customers or by any such other persons who suffered damage due to negligence of the Successful bidder or his employees, the same shall be settled by the successful bidder at his cost.
- 25.3** The Successful bidder has to ensure supervision of the work through duly qualified and competent persons and also has to make sure that a responsible Manager/ Engineer full time available on work site to whom GMDC can issue the instruction and who can fulfill such instructions. Successful bidder shall appoint qualified Manpower.
- 25.4** The Successful bidder shall not change the constitution of the firm/name during the currency of the contract without prior approval of GMDC. Upon such change in constitution and/or name, Supplementary agreement to that effect shall be executed and if the SD is submitted in form of BG/FD than fresh BG in the name and/or constitution shall be submitted failing which necessary action as deemed fit by GMDC shall be taken.
- 25.5** All the staff members of the successful bidder shall carry Photo Identity Card while on duty.
- 25.6** The successful bidder shall provide necessary arrangement for transportation of manpower.
- 25.7** All the equipment to be deployed by the successful bidder must be maintained in proper working order and be fitted with all the required safety devices enforced by statutory authority e.g. Audio-Visual Alarms, fire extinguisher etc.
- 25.8** In case of any Central/State Government directives regarding electrical works execution, the same shall have to be strictly adhered to and binding upon the successful bidder for implementation, for which GMDC will not be responsible for any compensation.
- 25.9** The successful bidder shall abide by the provision of the Motor Vehicle Act for machinery. Any consequences arising out of non-compliance of said Provisions will be at the successful bidder's sole risk and cost, for which GMDC will not be responsible for any compensation.



25.10 To meet the exigencies arising out of natural calamities or disaster or during any emergency, GMDC reserves the right to take away any of the equipment's / machineries deployed at the site with a mutually consented rate. A separate agreement will be made to this effect.

25.11 MD-GMDC is authorized to take suitable decision and action in case of requirement to amend / alter the work order conditions / quantities of the works / extension of the work completion period / allotment of additional works / revision of the rates of the work etc. if necessary, in the interest of GMDC.

26. Termination Of Contract

If at any time during the currency of this contract, if any breach occurs due to the reasons attributed to the Successful bidder, GMDC shall be at liberty to terminate this contract without assigning any reasons, whatsoever, for such termination and any losses and/or damages occurring due to such termination shall be borne by the Successful bidder. GMDC shall be entitled to forfeit Security deposits as Liquidated damages.

27. Governing Law

This Tender and subsequent Contract shall be construed and interpreted in accordance with and governed by the laws of India.

28. Jurisdiction

The matter related to any dispute or difference arising out of this Tender and subsequent contract shall be subject to the exclusive jurisdiction of Court at Ahmedabad only.

29. Arbitration

All questions, disputes, differences whatsoever which may at any time arises between the parties to this Tender and subsequent contract in connection with the Tender and subsequent contract or any matter arising out of or in relation thereto, shall be referred to Sole Arbitrator as per the provisions of Arbitration and Conciliation Act, 1996 and subsequent amendment thereto and the venue of



arbitration proceedings shall be at Ahmedabad only. The Language of the Arbitration shall be in English only.

30. Completion Of Work

- 30.1** Upon the Successful bidder fulfilling the entirety of its obligations under the Contract to the satisfaction of GMDC and subject to terms and conditions of the Contract, it shall become eligible to apply for a Completion Certificate. The Head (PP&A) or The General Manager (Plant) of the GMDC shall formally issue the Completion Certificate, after verifying from the completion documents and satisfying himself that the Works under the Contract have been completed in accordance with all the provisions of this Contract. The Successful bidder, after obtaining the Completion Certificate shall become eligible to present the final bill for the Works executed by it under the Contract.
- 30.2** Upon completion of Works under the Contract and before the application for the Completion Certificate, the Successful bidder shall clear the workplace of GMDC from all rubbish, dirt, structures, scrap, oily rags etc. Failure to clear the workplace may constrain GMDC to clear the said site at the risk and cost of the Successful bidder.
- 30.3** The Successful bidder shall provide GMDC with any and all documents/records/proofs that may be demanded before issuance of Completion Certificate.
- 30.4** As time is essence of this project, contractor should adhere to duration of contract, except for short fall of raw material in market or delay due to natural calamity. Extension if any may be considered for max 01 month only.

31. Accident and Responsibilities of Bidder

- 31.1** The entire responsibility on account of any accidents, damage or personal injury which may occurred to any of the Successful bidder's vehicles/ equipments or his/its employees or any outside party shall be exclusively that of the Successful bidder and no claim whatsoever shall be entertain by the GMDC on this account. The Successful bidder shall keep the GMDC indemnified from all the consequence.



31.2 In the event of any breakdown or accident during the course of any operation, the Successful bidder shall notify the facts to the GMDC Authority, or any other officer immediately present there of such incidence and shall simultaneously make adequate remedial arrangements on his/its own cost and risk and as per the instruction of the Corporate office Authority.

31.3 The Successful bidder shall pay all claims, damages and compensation with cost arising out of or resulting there from to the third party(s) and in case the GMDC would be required to face any proceedings all to pay any amount on the aforesaid account, it shall be deemed to have been discharge on behalf of the Successful bidder, the same amount shall be recovered half-an hour rest interval in between. The Successful bidder shall ensure that the attendance of all the supplied manpower shall be taken through biometric attendance machine.

32. Foreclosure

In case of any necessity arising due to local working conditions or any unforeseen reason not in the control of the GMDC or any reason what so ever GMDC shall be at liberty to Fore close the contract without assigning any reasons or notice there for.

33. Force Majeure

Force majeure is herein defined as any cause which is beyond the control of the Successful bidder or the GMDC as the case may be which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as:

33.1 Natural phenomena such as flood, draughts Cyclone, earthquake and epidemics, declaration of war.

33.2 Acts of any government, including but not limited to war, declared or undeclared priorities, quantities, embargoes, providing either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such cases.



- 33.3** The Successful bidder will advise, in the event of his having resort to this clause by a registered letter duly certified by the statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such Force Majeure condition. In the event of delay lasting over two months, if arising out of Force Majeure, the contract may be terminated at the discretion of the GMDC.
- 33.4** For delay arising out of Force Majeure, the Successful bidder will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of force Majeure and neither company nor the Successful bidder shall be liable to pay extra costs (like increase in rates, remobilization, advance, idle charges for labour and machinery etc.) provided it is mutually established that the Force Majeure conditions did actually exist.
- 33.5** If any of the Force Majeure conditions exists in the place of operation of the Successful bidder even at the time of submission of bid, he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.
- 33.6** The Successful bidder or the GMDC shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/ or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time.



Annexure-A

Instruction to Bidders for Online Tendering

1. All Bidders must submit their bid online through the website <https://gmdctender.nprocure.com>
2. Bidders who wish to participate in online tenders will have to procure / should have legally valid Digital Certificate (Class III) as per Information Technology Act-2000, using which they can sign their electronic bids. Bidders can procure the same from any of the license certifying Authority of India or can contact (n) code solutions- a division of GNFC Limited, who are licensed Certifying Authority by Government of India at address mentioned below at clause 5.
3. All bids should be digitally signed. For details regarding digital signature certificate and related training involved at the below mentioned address should be contacted:

Address:

(n)Procure Cell

(n)Code solutions A division of GNFC

403, GNFC Info-Tower, Bodakdev, Ahmedabad- 380 054 (India)

Tel +91 79- 4000 7300 Fax: +91 79 26857321, Toll Free: 7359021663

E-mail : nprocure@ncode.in

4. Kindly take note that, valid Digital Signature Certificates is a must for all the interested Bidders. Online tendering process is not possible without a valid digital signature certificate.
5. Interested Bidders are also requested to complete their procedure for taking digital signature certificate in respect to filling of application form, supporting documents with necessary fees at least 3 days before last date of tender submission.
6. (n) code solutions reserve the rights to issue digital signature certificate after verification of application forms / supporting documents submitted by Bidder. (n) code solutions is fully authorized to issue digital signature certificate to Bidders.
7. Bidders who have no facility to participate in on-line tenders are requested to contact (n) code solutions for the same.
8. Free vendor training camp will be organized every Saturday between 4.00 to 5.00 P.M. at (n) code solutions-A Division of GNFC Ltd. at address mentioned above. Bidders are requested to take benefit of the same.
9. All the correspondence in respect to training, support or digital signature certificate should be addressed to (n) code solutions directly on the above-mentioned address. In case the Bidders face any difficulty, they may contact the officials of the GMDC or GNFC on the below mentioned details:

a. GMDC:

Contact Person: **GENERAL MANAGER (POWER)**

Khanij Bhavan, 132' Ring Road, University Ground, Vastrapur, Ahmedabad 380 052

EPABX: 079-27913501, 27913200

E-mail: gm.power.co@gmdcltd.com, Website: www.gmdcltd.com

b. GNFC:

Contact Number: 079- 26857316/17/18

E-Mail: nprocure@gnfc.net



Annexure-B

Annexure I.

Finance Department, GR. No.: FD/MSM/e-file/4/2023/4020/D.M.O.

Date: 11/03/2024


(A) Guarantees issued by the following banks will be accepted as SD/EMD on permanent basis:

❖ **All Nationalized Banks**

(B) Guarantees issued by the following Banks will be accepted as SD/EMD for the period up to March 31, 2025. The validity cut-off date in the GR is with respect to the date of issue of Bank Guarantee irrespective of the date of termination of Bank Guarantee.

| Sr No | Name of Banks | Sr No | Name of Banks |
|-------|----------------------------|-------|-------------------------------------|
| 1 | AXIS Bank | 19 | Kotak Mahindra Bank |
| 2 | AU Small Finance Bank | 20 | South Indian Bank |
| 3 | Bandhan Bank | 21 | Tamilnadu Mercantile Bank |
| 4 | City Union Bank | 22 | Utkarsh Small Finance Bank |
| 5 | CSB Bank | 23 | Ahmedabad Mercantile CO-op. Bank |
| 6 | DBS Bank India Limited | 24 | Nutan Nagrik Sahkari Bank Ltd. |
| 7 | DCB Bank | 25 | Rajkot Nagarik Sahakari Bank Ltd. |
| 8 | Equitas Small Finance Bank | 26 | Saraswat Co-Operative Bank Ltd |
| 9 | FEDERAL Bank | 27 | SVC Co-Operative Bank Ltd. |
| 10 | HDFC Bank | 28 | The Cosmos Co-op Bank Ltd. |
| 11 | HSBC Bank | 29 | The Gujarat State Co-operative Bank |
| 12 | ICICI Bank | 30 | The Mehsana Urban Co-Op. Bank |
| 13 | IDBI Bank | 31 | The Surat District Co-op Bank |
| 14 | IDFC First Bank | 32 | The Surat People's Co. Op. Bank Ltd |
| 15 | IndusInd Bank | 33 | The Kalupur Commercial Co-op. Bank |
| 16 | Jana Small Finance Bank | 34 | Baroda Gujarat Gramin Bank |
| 17 | Karnataka Bank | 35 | Saurashtra Gramin Bank |
| 18 | Karur Vysya Bank | | |

All the eligible banks are instructed to collect the original documents/papers of guarantee from the concerned tendering authority.


(Bhavya Verma)
Deputy Secretary (Budget)
Finance Department

-----XXXXX-----



FORM-PA CHECK LIST OF DOCUMENTS ENCLOSED WITH TENDER

TECHNICAL BID

| Sr. No. | Document | Declaration (Strike out whichever is not applicable) |
|----------------|--|---|
| 1. | Tender Processing Fee | Yes/No |
| 2. | EMD | Yes / No |
| 3. | Form PA (check list of documents enclosed with tender) | Yes / No |
| 4. | Form PB (Status of the Bidder) | Yes / No |
| 5. | Form PC (CA Certification for Financial Details and work carried out during the last seven years of bidder) | Yes / No |
| 6. | Form PD (Declarations) | Yes / No |
| 7. | Form PE (Undertaking of Genuineness of Document) | Yes / No |
| 8. | Form PF (Undertaking of Indemnity) | Yes / No |
| 9. | Form PG (Site Visit) | Yes / No |
| 10. | Power of Authority to sign the documents (Duly Notarized on Stamp paper of Rs. 300) | Yes / No |

PRICE BID

| | | |
|----------|---|----------|
| 1 | Online Price bid submission in Form PP | Yes / No |
|----------|---|----------|



FORM-PB STATUS OF THE BIDDER

| Particulars | Details |
|--|----------------|
| Name of the Bidder: | |
| Address: | |
| Registered office: | |
| For correspondence: | |
| Telephone No. | |
| Fax No. | |
| E-mail Address | |
| Attested copies of Deeds, Articles of association to be enclosed | |
| Name & contact number of person holding power of attorney (Attested copy of power of attorney to be enclosed) | |
| Names of Partners with their Present and permanent address | |
| Name of Bankers with full address and Telephone No& Bank Account Details (Cancelled Cheque to be enclosed) | |
| PAN of Bidder | |
| GST Registration No. of Bidder | |
| PF Registration No. | |
| Whether enlisted in other dept., if yes, then furnish the details pertaining to class and the amount qualified to tender | |
| Was the applicant or its partners or Directors blacklisted in past by any Govt. or any other body. | |
| Details pertaining to the work incomplete if any | |
| Details of the litigation, court cases and arbitration either completed or under progress during last 10 years by the GMDC entity or any partner/proprietor of present entity GMDC was associated in any capacity. | |

Signature and Stamp of the Bidder



FORM-PC

1. Turnover and Net Worth

On the basis of the **audited books of accounts** produced before us by M/s. _____, we certify that as per the books of account Net worth and Turn Over of the firm M/s _____ are as under:

1.1 Net Worth= Rs. _____ for the Year ended on 31.03.2022.
Rs. _____ for the Year ended on 31.03.2023.
Rs. _____ for the Year ended on 31.03.2024.

Average Net Worth Rs. _____

1.2 Turn Over = Rs. _____ for the Year ended on 31.03.2022.
Rs. _____ for the Year ended on 31.03.2023.
Rs. _____ for the Year ended on 31.03.2024.

Average Turnover of Rs. _____

2. Details of Work Carried Out During the Last Seven Years by the Bidder (i.e. period from 01.09.2017 to 31.08.2024):

| Sr. No. | Description of work with Workplace | Name of client with postal address | Work Order number and date | Contract Period | | Actual Quantity worked | Amount without GST of work order | Work experience certificate attached |
|---------|------------------------------------|------------------------------------|----------------------------|-----------------|-----------|------------------------|----------------------------------|--------------------------------------|
| | | | | From (Date) | To (Date) | | | |
| | | | | | | | | Yes/No |
| | | | | | | | | Yes/No |
| | | | | | | | | Yes/No |
| | | | | | | | | Yes/No |

Signature and Stamp of the Bidder

Signature and Stamp of the CA



FORM-PD

Declaration

(On letter head of the Bidder)

DATE:

To,

GENERAL MANAGER (POWER)

**Khanij Bhavan,
132' Ring Road,
University Ground,
Vastrapur,
Ahmedabad 380 052**

Dear Sir,

I/we here by solemnly declare that

1. Any of our Directors or Partners, jointly or severally and/or individually or our firm/GMDC have not been black listed by the Central Govt. or the State Govt. or its undertakings.
2. We have not put any condition in our offer with respect to Tender No. _____,
3. We have accepted all the terms and conditions, including Annexure, Corrigendum if any, as specified in the Tender Document No. _____ unconditionally.

I/we here by further declare that, if the declaration is found untrue, the GMDC shall be entitled to take any action against us severally and/or individually or our firm/GMDC in this regard in any manner that may be deemed fit by GMDC.

Yours faithfully,

Signature and Stamp of the Bidder



FORM -PE

(Format for Affidavit)

A F F I D A V I T

**Undertaking Regarding Geniuses of Documents
(On Non-Judicial Stamp Paper Of Rs 300/-)**

I/We, _____, Partner/Director/Legal Attorney/Accredited Representative of M/s. _____ solemnly declare that:

1. I/We are submitting Tender for the work _____ against Tender No. _____
2. None of the Partners/Directors of our firm/GMDC is relative of employee of GMDC.
3. All information furnished by us in respect of fulfillment of eligibility criteria and qualification information of this Tender is complete, correct and true.
4. All documents/credentials submitted along with this Tender are genuine, authentic, true and valid.
5. If it is found at any point of time that our documents are not genuine then in that case our tender will be rejected, earnest money deposited by us will be forfeited and we will be debarred from participating in further/future GMDC tenders and/or any action as deemed fit by GMDC may be taken against us, including termination of the contract, forfeiture of all dues including Earnest Money / Security deposit and banning/delisting of our entity and all related persons etc.

**SIGNATURE OF THE BIDDER
WITH SEAL**

Dated



FORM-PF
Undertaking Of Indemnity
(On Letter head of the Bidder)

To,

GENERAL MANAGER (POWER)

**Khanij Bhavan,
132' Ring Road,
University Ground,
Vastrapur,
Ahmedabad 380 052**
Dear Sir,

We M/s. ----- hereby undertake that, we shall at all times, indemnify and keep indemnified that GMDC Limited from any and all liability for damages resulting from or arising out of or in any way connected with the operations covered by the Tender No. _____. We shall be responsible for all risk arising in connection with or on account of the operations covered by the contract covered by the above tender and shall make good all losses and damages arising there from. In case, the GMDC Limited shall incur any cost or expense or suffer any loss on account of any claim demand or course of action brought against us and arising out of the operations covered by the Bidder/tender, the GMDC Limited shall have the power (without being bound to do so) to define, contest or compromise any such claim demand or cause of action. Any amount that may become payable by GMDC Limited and any cost expense etc. that may be incurred by the GMDC Limited in this behalf, shall also be recoverable from us, without prejudice to your other rights.

Yours faithfully,

For -----

(Signature & Stamp of the Bidder)



FORM-PG

Declaration

(On letter head of the Bidder)

Site Visit

We _____ hereby certify that we have fully understood the site condition in respect of Tender No. _____ for all the works mentioned above at _____. We have obtained all relevant details, information, data, existing working conditions, existing industrial environment etc. We have also studied the working conditions as proposed in the tender and availability of power supply, water supply, manpower, machineries, transportation facility etc.

We hereby agree and undertake not to raise any dispute and/or objection at any stage on any ground whatsoever, during the currency of the contract if awarded to us.

SIGNATURE OF THE BIDDER WITH SEAL

Dated



**FORM-PP
PRICE BID FORM
(To be submitted online)**

Sub.: - Supply and Replacement of Spares for Boiler and ESP at ATPS.

| Plan | Sr. No. | Component/ Area | Item | Unit | Qty. | Unit Rate (Exc. GST) | Total Amount (Exc. GST) |
|---------------------|---------|------------------|--|------|------|----------------------|-------------------------|
| Auxiliary Boiler | 1 | Auxiliary Boiler | Supply and replacement of Bricks Fire Size 230x115x75mm, 400°C | Nos | 8000 | | |
| Ash handling system | 2 | Ash cooler | Supply and replacement of Ash rotary seal, 400x400mm with isolation gate and geared motor as per Drawing | Nos | 4 | | |
| | 3 | Ash cooler | Buffel plate assembly, SIZE: 3 X 1.5Mtr , Material - SS310 | Nos | 2 | | |
| Pressure Part | 4 | Soot blower | Supply and replacement of Soot blower MODEL NO.G9B, MAKE – ALSTOM for TAPH | Nos | 9 | | |
| | 5 | Soot blower | Supply and replacement of Soot blower, MODEL NO.IK 300, MAKE – ALSTOM, for HRSB | Nos | 5 | | |
| | 6 | Soot blower | Supply and replacement of LANCE TUBE, PART NO.35 50503444, MODEL NO.IK-300, MAKE:ALSTOM, FOR FULL TRAVEL SOOT BLOWER. | Nos | 4 | | |
| | 7 | Soot blower | Supply and replacement of LANCE TUBE, PART NO.35 50503821, MODEL NO.IK-300, MAKE:ALSTOM, FOR HALF TRAVEL SOOT BLOWER | Nos | 4 | | |
| | 8 | SWAS | Supply and replacement of Primary cooler Model No. SC-4-18-SS Sr. No J0518 Tube side Design Press-250 Kg/cm ² and Temperature- 580 °c , Shell side : Design temp : 350 deg, Hydro test press: 35 kg/cm ² Design pressure: 250 kg/cm ² , | Nos | 3 | | |



| | | | | | | | |
|---------|----|-----------------------|--|-----|-----|--|--|
| | | | Make- Steam Equipments | | | | |
| | 9 | Furnace & second pass | Fins | Mtr | 100 | | |
| | 10 | Furnace & second pass | Fins | Mtr | 100 | | |
| | 11 | Furnace & second pass | Fins | Mtr | 100 | | |
| | 12 | Furnace & second pass | Fins | Mtr | 100 | | |
| | 13 | Furnace & second pass | Fins | Mtr | 100 | | |
| Cyclone | 14 | Non- metallic bellow | Supply and replacement of NMEJ Duct Tag No. EJ-1 Type-KEI FF 25 F, 40XF2W , Size:4250mmX6800mm width: 650mm ,Suitable for degree C, temperature & lignite contain with sulphur drawing No. KE-EN 0209.01 with fastener | Nos | 4 | | |
| | 15 | Non- metallic bellow | Supply and replacement of NMEJ Cyclone outlet Tag No.EJ-2 Type : F-Fabric combination sulphur , Size:4600mmX4800mm width:550 mm with fasteners. | Nos | 4 | | |
| | 16 | Non- metallic bellow | Supply and replacement of TAG NO. EJ-04, type:40x-w, size: D-22506mm,D-2750mm,S-550MM, MEDIA: flue gass + ash , temp;1000deg., including fastener, make: keld for down comer | Nos | 4 | | |
| Fans | 17 | SA Fan | Supply and replacement of INLET SILENCER OF 2030MM DIA DLBAB-11 SECONDARY AIR FAN, DRAG NO. K-4765, PART NO. 19 | Nos | 3 | | |
| | 18 | PA Fan | Supply and replacement of INLET SILENCER FOR 2350 MM DIA DI-BAB-11, PART NO.19, DRAWING NO. K-4762 , MAKE: ANDREW YULE. APPLICATION- PA FAN | Nos | 4 | | |
| | 19 | PA Fan | Supply and replacement of LOCATING (DE), FOR SA FAN BEARING WITH HOUSING. FAN SIZE/TYPE:2030 MM DIA DIBAB-11 SA FAN, BEARING | Nos | 1 | | |



| | | | | | | | |
|--------|----|---|--|-----|----|--|--|
| | | | SIZE/TYPE: 4.1/2" DIA RI TYPE WATER COOL SHAFT DIA. AT BEARING:101.6MM, TYPE: JOURNAL, MATERIAL:CAST IRON, LINER MATERIAL:WHITE METAL. | | | | |
| | 20 | ID Fan | Supply and replacement of Angular contact ball bearing 7230 BMPUA make: SKF | Nos | 2 | | |
| | 21 | ID Fan | Supply and replacement of Angular contact ball bearing 7322 B TVP UA, B make: SKF | Nos | 2 | | |
| | 22 | ID Fan | Supply and replacement of Cylindrical roller bearing, NU230 MAC3 | Nos | 1 | | |
| | 23 | ID Fan | Supply and replacement of Cylindrical roller bearing, NU 1040 MAC3 | Nos | 1 | | |
| Valves | 24 | Eco and ring header drain valve Supply and replacement of | 80NB,1500 class,Butt Weld, Globe valve, Make- BHEL | Nos | 10 | | |
| | 25 | Start-up vent MOV Supply and replacement of | 100NB, 2500 class, Wedge Gate valve, Butt Weld, Make-BHEL, Motor Operated | Nos | 2 | | |
| | 26 | Startup vent control valve Supply and replacement of | 100NB, 2500#,Butt Weld,Make-BHEL, Pneumatic operated | Nos | 2 | | |
| | 27 | SH drain MOV Supply and replacement of | 80NB,2500#,Wedge gate valve, Make-BHEL, Motor operated | Nos | 2 | | |
| | 28 | Boiler fill Drain Line Supply and replacement of | 3",900 class,Butt Weld,WC6, Make-BHEL, Butt Weld, Manual operated | Nos | 16 | | |
| | 29 | Boiler fill Drain Line Supply and replacement of | 1.5",2500 class, Socket Weld, Globe valve, Make-BHEL | Nos | 10 | | |
| | 30 | Boiler fill Drain Line Supply and replacement of | wedge gate valve,80NB, 600class, Buttt weld, Make - BHEL, Motor operated | Nos | 4 | | |
| | 31 | IBD MOV Supply and replacement of | Globe valve, 150 NB, 1500 Class, Butt weld, Make- BHEL , Motor Operated | Nos | 2 | | |
| | 32 | L-valve Supply and replacement | Metallic Bellow for L-valve, Size:1000x580mm Length Type: | Nos | 2 | | |



| | | | | | | | |
|------------------------|----|--|---|-----|----|--|--|
| | | of | Double Universal, Design Temp (Skin/Flow): 250/1250°C, Pressure: 1.05 Kg/Cm ² , Media: Ash As Per Drg No.Sc-7236-4279, Rv-01, Make: Shivam Cast. | | | | |
| | 33 | L-valve Supply and replacement of | Hose Size: 1" Bsp & 1500 Mm, Class: 150 # Flanged At One Side & Other Side Female Fitting Long, Pcd-86Mm, Moc: SS 304 (For Fluidizing Hose) | Nos | 20 | | |
| | 34 | Boiler fill Drain Line Supply and replacement of | 150 NB, 1500 Class, Butt weld, Make- Fisher, Pneumatic Operated | Nos | 1 | | |
| Lignite Feeding system | 35 | Gravimetric feeder | Supply and replacement of RUBBER SIDE WALL BELT WITH BOTTOM PROFILES XE/504 BELT WIDTH: 1000 MM, THICKNESS: 12 MM, PLY: 4 PLY, TOP COVER: 6MM, BOTTOM COVER: 2 MM, BELT LENGTH: 60 MTRS, OPEN END SIDE WALL HEIGHT: 70 MM, BELT GROOVE AT THE BOTTOM: 30 MM AT THE TOP AND BOTTOM: 18MM, HEIGHT: 12 MM (TWO GROOVES AT THE BOTTOM OF THE END) | Nos | 2 | | |
| | 36 | Gravimetric feeder | Supply and replacement of Fastener Kit RAR5-SE-48-ACS-CS Kit For Belt Width-1200Mm Belt Thick-10-12Mm Make Flexco, Application-Gravimetric Feeder | Nos | 8 | | |
| | 37 | Gravimetric feeder | MSRT Machine, Size: 60", Make: Flexo, For Gravimetric Feeder Belt Riveting | Nos | 1 | | |
| | 38 | Gravimetric feeder | Supply and replacement of Rib For Feeder Belt As Per Drawing, Application: Gravimetric Feeder | Mtr | 50 | | |
| | 39 | Gravimetric feeder | Supply and replacement of BELT DRIVE REDUCER RATIO-100:1, PART NO. | Nos | 1 | | |



| | | | | | | |
|----|--------------------|--|-----|-----|--|--|
| | | C21968-1 G 01 AY 1953 DRAWING NO. A28420- REV-0 SHEET-1/6 MAKE: STOCK | | | | |
| 40 | Gravimetric feeder | Supply and replacement of Pulley head lagged material conveyor GRP LPG 30 Schenck process part No.AB16268-1, Application: Gravimetric feeder head end pulley | Nos | 2 | | |
| 41 | Gravimetric feeder | Supply and replacement of SELF CLEANING SCREW PULLEY, SIZE: CAGE OD-365 MM, CAGE THICKNESS-12 MM,CAGE LENGTH-1074 MM,MATERIAL-EN-8, SHAFT OD-72MM, LENGTH-1162 MM, MATERIAL-EN-19 AS PER DRAWING APPLICATION- GRAVIMETRIC FEEDER TAIL END SIDE | Nos | 1 | | |
| 42 | Gravimetric feeder | Supply and replacement of MS solid Roller, Length- 1236mm, dia-63.5mm, At bearing dia-19.05mm, AS per Drawing | Nos | 150 | | |
| 43 | Gravimetric feeder | Supply and replacement of Bearing FY 3/4" TF | Nos | 300 | | |
| 44 | Gravimetric feeder | Supply and replacement of MS hollow roller, Length- 1226mm, dia of rollar-203mm, Thickness-6mm of Pipe,At bearing area-25.5mm AS per Drawing | Nos | 30 | | |
| 45 | Gravimetric feeder | Supply and replacement of Bearing FY 1" TF | Nos | 60 | | |
| 46 | Gravimetric feeder | Supply and replacement of Modified Carrying Roller With Gland Stuffing Box And Pusher Application : Gravimetric Feeder | Nos | 15 | | |
| 47 | Gravimetric feeder | Supply and replacement of SYJ35 TF | Nos | 40 | | |
| 48 | Gravimetric feeder | Supply and replacement of Bearing 22217 EK C3 WITH SLEEVE H- 317 | Nos | 2 | | |
| 49 | Gravimetric feeder | Supply and replacement of AS per sample , MOC-MS 20mm plate and 3mm liner plate, Rack | Nos | 1 | | |



| | | | | | | | |
|--|----|----------------------------|---|-----|-----|--|--|
| | | | angle 75mm with slot 50nOs. As per drawing | | | | |
| | 50 | Gravimetric feeder | Supply and replacement of ROLLER, PART NO.W-1864-1, MAKE: LINK BELT, FOR GRAVIMETRIC FEEDER | set | 4 | | |
| | 51 | Gravimetric feeder | Supply and replacement of RACK ANGLE , SIZE: 75MM X 75MM X 12MM, MOC: SS310, LENGTH: 1765MM WITH SLOTTING AS PER DRAWING | Nos | 2 | | |
| | 52 | Gravimetric feeder | Supply and replacement of Bearing ,Part No.B 114, Make: Link Belt For Gravimetric Feeder | Nos | 8 | | |
| | 53 | Gravimetric feeder | Supply and replacement of CHAIN LINK ASSEMBLY AS PER DRG NO-1.47740/00885-0207 WITHOUT FLIGHT | Nos | 756 | | |
| | 54 | Gravimetric feeder | Supply and replacement of CHAIN LINK ASSEMBLY AS PER DRG NO-1.47740/00885-0207 | Nos | 84 | | |
| | 55 | Gravimetric feeder | Supply and replacement of SPROCKETS FOR 142 MM FORGED CHAIN LINKS, APPLICATION: CLEAN OUT CONVEYOR (COC) AS PER DRAWING | Nos | 4 | | |
| | 56 | Gravimetric feeder | Supply and replacement of (SYJ 70 TF/ UCP 214) and (SYJ 60 TF) | Nos | 7 | | |
| | 57 | Lignite drag link Conveyor | Supply and replacement of LIGNITE DRAGLINK CHAIN LINK ASSEMBLY INCLUDING CIRCLIP, PIN, SS BOLTS & NUTS ETC. AS PER DRAWING ATTACHED | Nos | 66 | | |
| | 58 | Lignite drag link Conveyor | Supply and replacement of GEAR-MOTOR MECHANISM, MODEL NO. R97DV132M4/TF- RATED POWER 7.5 KW, GEAR RATIO: 59.92, MAKE: SEW-EURO DRIVE, FOR LIGNITE | Nos | 1 | | |



| | | | | | | | |
|----|----------------------------|--|---|-----|-----|--|--|
| | | | DRAGLINK CONVEYOR | | | | |
| 59 | Lignite drag link Conveyor | | Supply and replacement of 1. MS GUIDE RAIL, SIZE : 55X12X1500 MM 2. MS GUIDE RAIL, SIZE : 50X08X1500 MM | Nos | 372 | | |
| 60 | Lignite drag link Conveyor | | Supply and replacement of Used Model: Type 7000, 130/180, Fabr. Maschinenlager | Nos | 4 | | |
| 61 | Lignite drag link Conveyor | | Supply and replacement of Forkey Sprocket,Od-480Mm,Pcd-265Mm,Id-235Mm,Thickness-20Mm,Moc-En-19,Teeth Surface Hard 45Hrc, For Lignite Draglink As Per Drawing(1 Set=02 Disc), Make-Rolcon, Application-Lignite Draglink Conveyor | Nos | 2 | | |
| 62 | Lignite drag link Conveyor | | Supply and replacement of 1. Head end shaft MS SLEEVE, SIZE: 160X170X271 MM 2. TAIL END SHAFT MS SLEEVE,SIZE:85X95X150 MM, APPLICATION- LIGNITE DRAG LINK CONVEYOR | Nos | 2 | | |
| 63 | Lignite drag link Conveyor | | Supply and replacement of 22230 Ek/C3 , Make: Skf | Nos | 2 | | |
| 64 | Lignite drag link Conveyor | | Supply and replacement of Size: H-3130, Make: Skf | Nos | 1 | | |
| 65 | Lignite drag link Conveyor | | Supply and replacement of 22219 Ek , Make: Skf | Nos | 2 | | |
| 66 | Lignite drag link Conveyor | | Supply and replacement of SLIDING 5MANUAL GATE FOR LIGNITE DRAG LINK, EFFECTIVESIZE-1200X1020MM,EFFECTIVE TEMP-500°C, PRESSURE-0.7 BAR, MEDIA-LIGNITE AND AIR AS PER DRAWING 1.47740/00300-0083 | Nos | 2 | | |
| 67 | Lignite drag link Conveyor | | Supply and replacement of GLAND SIZE: 14 MM STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER | Nos | 5 | | |



| | | | | | | |
|----|--------------------------------|---|-----|---|--|--|
| 68 | Lignite rotary air lock feeder | Supply and replacement of GEAR-MOTOR MECHANISM, MODEL NO. R97DV132M4/TF- RATED POWER 7.5 KW, GEAR RATIO: 59.92, MAKE: SEW-EURO DRIVE, FOR LIGNITE DRAGLINK CONVEYOR | KG | 1 | | |
| 69 | Lignite rotary air lock feeder | Supply and replacement of W BASF55x72x10/7-NBR | Nos | 5 | | |
| 70 | Lignite rotary air lock feeder | Supply and replacement of W4087 M12x1,5-CuZn-HEI | Nos | 5 | | |
| 71 | Lignite rotary air lock feeder | Supply and replacement of bearing 30212 | Nos | 4 | | |
| 72 | Lignite rotary air lock feeder | Supply and replacement of bearing 32306 | Nos | 6 | | |
| 73 | Lignite rotary air lock feeder | Supply and replacement of bearing 32206 | Nos | 6 | | |
| 74 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-110x12 | Nos | 5 | | |
| 75 | Lignite rotary air lock feeder | Supply and replacement of K/S77 R87 | Nos | 3 | | |
| 76 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-72x9 | Nos | 4 | | |
| 77 | Lignite rotary air lock feeder | Supply and replacement of W4300 1-72x9 | Nos | 4 | | |
| 78 | Lignite rotary air lock feeder | Supply and replacement of METALLIC EXPANSION JOINT, TYPE : RECTANGULAR, TAG NO : EJ-01, RECTANGULAR METTALIC EXPANSION BELLOW, SIZE- 950X450MM, HEIGHT- 475MM, APPLICATION- LIGNITE RALF, TAG NO. EJ-01, DESIGN TEMPERATURE- 250 DEGREE CENT., DESIGN PRESSURE- 0.5KG/CM2, AXIAL MOVEMENT/COMPRESSION- 50/50MM, INSTALLED LENGTH-475MM, NO. OF CONVOLUTION-04 NOS, DUCT ID- 964MMX464MM, INNER SLEEVE MOC-SS304(3 MM THICK), AS PER DRAWING | Nos | 2 | | |



| | | | | | | | |
|----|--------------------------------|--|---|-----|----|--|--|
| | | | NO, SC-3563-216-REV-01 | | | | |
| 79 | Lignite rotary air lock feeder | | Supply and replacement of SLIDING PLATE MOC-SS310, Thickness - 12mm. SLIDING MANUAL GATE FOR RALF, EFFECTIVESIZE-1000*500MM,EFFECTIVE TEMP-500°C, PRESSURE-0.7 BAR, MEDIA-LIGNITE AND AIR AS PER DRAWING 1.47740/00300-0092(GATE SHOULD BE SINGLE OPERATED SPINDLE) | Nos | 10 | | |
| 80 | Lignite rotary air lock feeder | | Supply and replacement of 625 NB SS PIPE, THICKNESS-10MM,MOC-SS 310 | Nos | 3 | | |
| 81 | Lignite rotary air lock feeder | | Supply and replacement of HOUSING FOR BEARING 22222 AS PER DRAWING, APPLICATION LIGNITE ROTARY FEEDER | Nos | 4 | | |
| 82 | Lignite rotary air lock feeder | | Supply and replacement of BEARING 22222 EK/C3, WITH SLEEVE H-322, MAKE: SKF, FOR ROTARY FEEDER NDE | Nos | 4 | | |
| 83 | Lignite rotary air lock feeder | | Supply and replacement of HOUSING FOR BEARING 22218 AS PER DRAWING | Nos | 4 | | |
| 84 | Lignite rotary air lock feeder | | Supply and replacement of BEARING 22218 EK/C3 , WITH SLEEVE H- 318, MAKE: SKF, FOR LIGNITE ROTARY FEEDER | Nos | 4 | | |
| 85 | Lignite rotary air lock feeder | | Supply and replacement of TIMING GEAR, ID-70 MM, OD: 172 MM, WIDTH: 120 MM KEY WAY WIDTH -20 MM, NO. OF TEETH-21, MOC-EN353, TOOTH HARDNESS-45 TO 50 HRC AS PER DRAWING | Nos | 1 | | |
| 86 | Lignite rotary air lock feeder | | Supply and replacement of TIMING GEAR, ID-100 MM, OD: 642 MM, WIDTH: 140MM KEY WAY WIDTH -28 MM, NO. OF TEETH-84, MOC-EN8, TOOTH HARDNESS-45 TO 50 | Nos | 1 | | |



| | | | | | | | |
|--|----|-----------------------------------|--|-----|--|----|--|
| | | | HRC AS PER DRAWING | | | | |
| | 87 | Lignite rotary air lock feeder | Supply and replacement of GLAND-10 MM, STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER AND 2. GLAND-12 MM,STYLE-8 SYR(MADE FROM EPTFE/GRAPHITE YARD,RAINFORCED WITH SYNTHETIC CERAMIC YARN AT CORNER | Nos | | 25 | |

Note:

1. **Quoted Price shall be inclusive of all other Taxes and exclusive of GST.**
2. **Bidders are requested to quote the rates strictly as per the terms and conditions mentioned in the Tender Document. Rate quoted by the bidder should be firm and no price increase will be allowed to the successful bidder during the supply period.**
3. **The bidder should quote price only on free delivery at our Project basis. The rates other than (FOR project basis) (our project basis) will not be considered.**
4. **Supply of all the other necessary material required for servicing of items or required during Overhauling activities which is not specifically mentioned (including but not limited to consumables, counter flanges, nuts, bolts, fasteners, gaskets, gland packings, gland rope, support items, fitment items, grease, etc) for items listed in BOQ of this tender to complete the job will be under Bidder's scope. These materials shall be supplied by Bidder at their own cost with no additional cost/ Time implication on GMDC**



Please note the following details for Compulsory e-confirmation for Bank Guarantee through ICICI Bank through SFMS under our:

Gujarat Mineral Development Corporation Limited (GMDC)
132 Ft Ring Road, Near University Ground Vastrapur, Ahmedabad.
Bank Name: ICICI Bank Ltd
IFS Code: ICIC0000024
UIC GMDC530265584 for Field 7037 MT760

FORMAT OF BANK GUARANTEE FOR SECURITY DEPOSITE (SD)

(On Non-judicial Stamp paper to be submitted along with submission of bids)

..... (Name of the Bank)
Address.....
Guarantee No.....
A/C Messrs..... (Name of Bidder)
Date of Expiry.....
Limit to liability (currency & amount)

Invitation for Tender No..... Dated..... (Bidding document)
For..... (Name of Facilities)

Subject: Security Deposit Bank Guarantee.

Date.....20

To,
General Manger (____),
Gujarat Mineral Development Corporation Ltd.
132 Ft Ring Road,
Near University Ground
Vastrapur,
Ahmedabad.

Dear Sir,

In consideration of Gujarat Mineral Development Corporation (hereinafter called “GMDC”) which expression shall unless repugnant to the subject of context include his successors and assigns having agreed to exempt M/s..... (herein after called “Bidder”) from demand under the terms and conditions of “Technical Bid Document” (hereinafter called the said “Bidding Document”) issued by the GMDC vide Tender No._____for the work_____



(Name of the facilities) from Security Deposit (SD) of Bid for the due fulfillment by the Bidder of the terms and conditions contained in the said Bidding Document on production of Bank Guarantee for INR

(_____ only) (figure in words).

- 1** We the _____ (Name of Bank) hereinafter referred to as “Bank” having our registered office at _____ (address of Bank) do hereby undertake and agree to indemnify and keep indemnified GMDC to extent of INR _____ (_____ only) (figures in words) against any losses, damage cost, charges and expenses caused to or suffered by or that may be caused or suffered by GMDC by reason of any breach or breaches by the Bidder of any of the terms and conditions contained in the said Bidding Document and unconditionally pay the amount claimed by GMDC on demand and without demur to the extent aforesaid.
- 2** We _____ (Name of Bank) do hereby undertake to pay the amounts due and payable under the guarantee without any demur merely on a demand by you stating that the amount claimed is due by way of loss or damage caused to or would be caused or suffered by you by reason of any breach by the said Bidder of any of the terms or conditions contained in the said Bidding Document by reason of the Bidder’s failure to fulfill the conditions of said Bidding Document. Any such demand on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding INR _____.
- 3** We _____ (Name of Bank) further agree that GMDC shall be the sole judge of and as to whether the Bidder has committed any breach or breaches of terms and conditions of the said Bidding Document and the extent of loss, damages, costs, charges and expenses caused to or suffered by or that may caused to or suffered by GMDC on account hereof to the extent of the Bid Security required to be deposited by the Bidder in respect of the said document and the decision of GMDC that the Bidder has committed such breach or breaches and as to the amount or amounts of loss, damages, costs, charges, and expenses caused to or suffered by or that may be caused to or suffered by GMDC shall be final and binding on us.
- 4** We _____ (Name of Bank) further agree that guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance on the said Bidding Document and that it shall continue to be enforceable till you certify that terms and conditions of the said Bidding Document have been fully and properly carried out by the said Bidder and accordingly discharge the guarantee. Unless a demand or claim under this guaranteed is made on us in writing on or before the (date) _____ we shall be discharged from all liability under this guarantee.
- 5** We _____ (Name of Bank) further agree with you that you have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bidding Document or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bidding Document and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Bidder or for any forbearance act or omission on your part or any indulgence by you to the said Bidder or any such matter or thing



whatsoever under the law relating to sureties would but for this provision have effect of so relieving us.

- 6** It shall not be necessary for GMDC to proceed against the Bidder before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank, notwithstanding any security which GMDC may have obtained from the Bidder at this time when proceeding are taken against Bank hereunder be outstanding or unrealized.
- 7** We _____ (Name of Bank) further undertake to unconditionally pay the amount claimed by GMDC merely on demand and without demur to the extent aforesaid.
- 8** We, the said Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of GMDC in writing.
- 9** This Guarantee will not be discharged due to the change in the constitution of the Bank or the said bidder.
- 10** The Bank has under its constitution power to give this guarantee _____ and _____ Mr. _____ who has signed it on behalf of the Bank have authority to do so.

Yours faithfully

For.....

(Name of the Bank)

Notwithstanding anything contained hereinabove

(I) Our liability under this Bank Guarantee shall not exceed **Rs _____/- (Rupees _____ only)**

(II) This Bank Guarantee is valid up to _____ (Date).

(III) We are liable to pay the guarantee amount or any part thereof under this bank Guarantee only and only if you serve upon us a written claim or a demand on or before _____ (date).

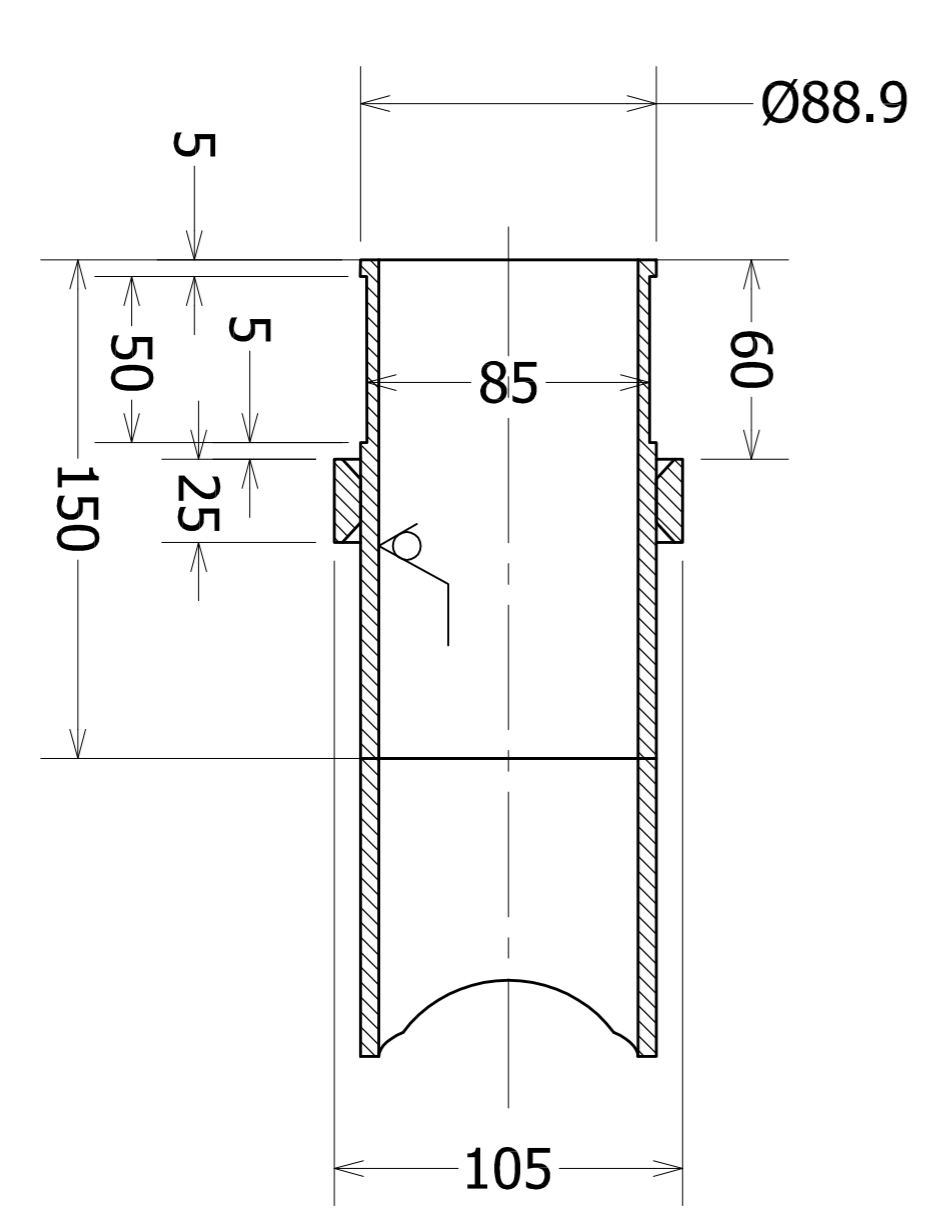
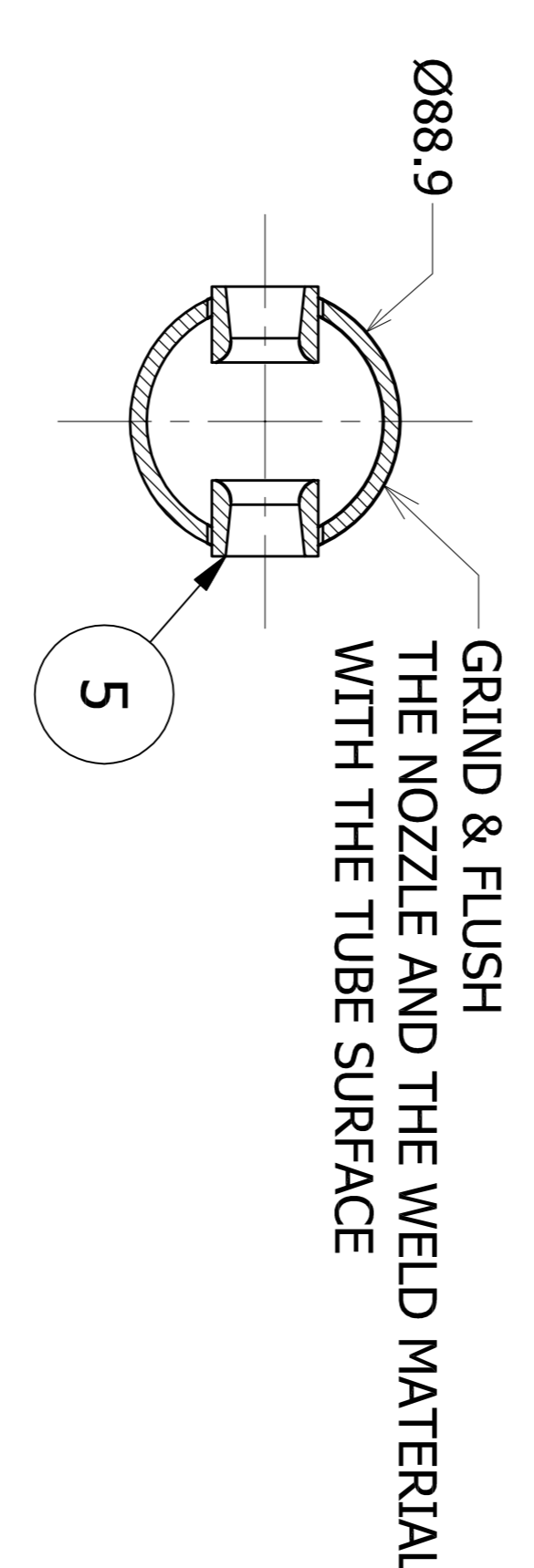
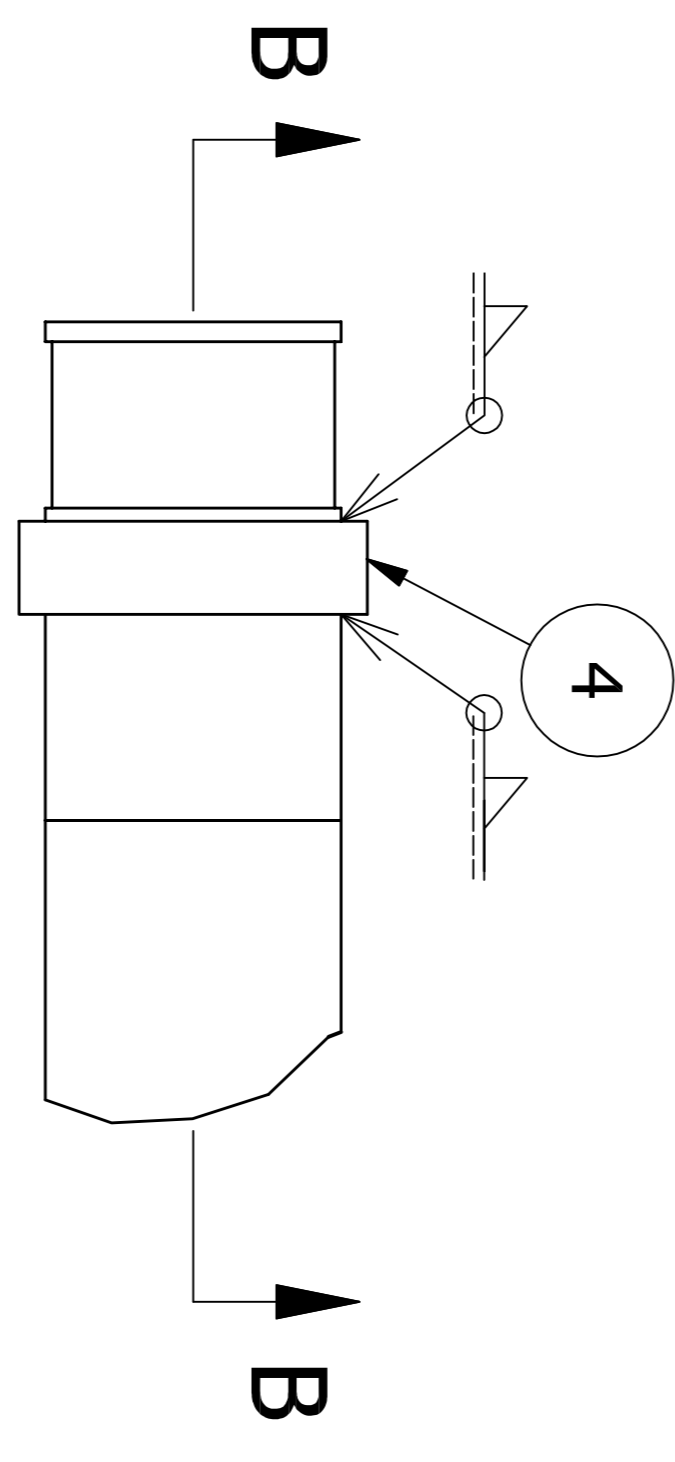
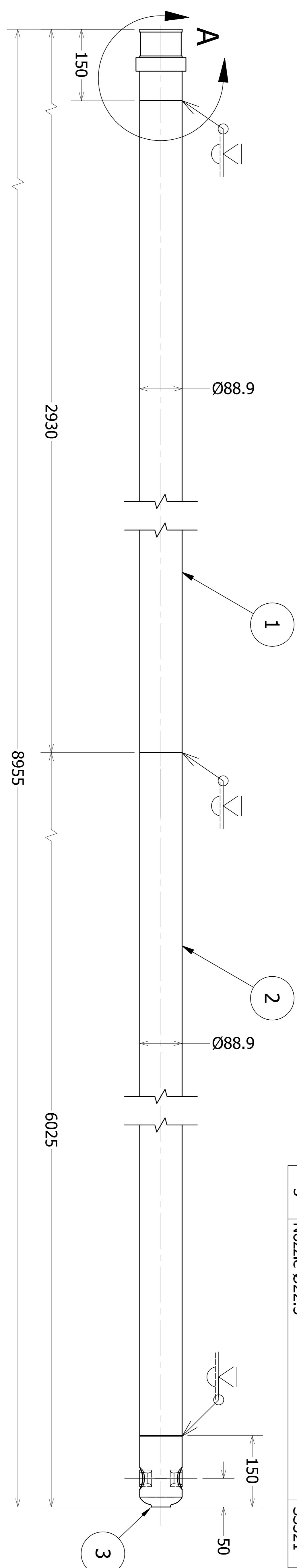
(IV) This bank guarantee is operative only when accompanied with SFMS advice from us.

Yours faithfully

For.....

(Name of the Bank)

| BILL OF MATERIAL | | | |
|------------------|-------------------|---------|-----|
| SR. NO | DESCRIPTION | Matl. | QTY |
| 1 | Tube Ø88.9 Sch 80 | T11/P11 | 1 |
| 2 | Tube Ø88.9 Sch 40 | T11/P11 | 1 |
| 3 | Nozzle Head | 1.4825 | 1 |
| 4 | Flange | CS | 1 |
| 5 | Nozzle Ø22.5 | SS321 | 2 |



NOTE:-
1. CUSTOMER TO CONFIRM ALL THE INTERFACE DIMENSIONS OF THE FLANGE.

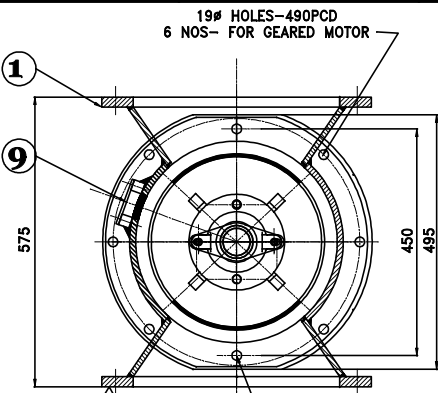
| | |
|------------------|-------------------------------|
| CUSTOMER NAME | KEPCO, Akrimola Power Station |
| PRIME CONTRACTOR | |
| CONSULTANT | |



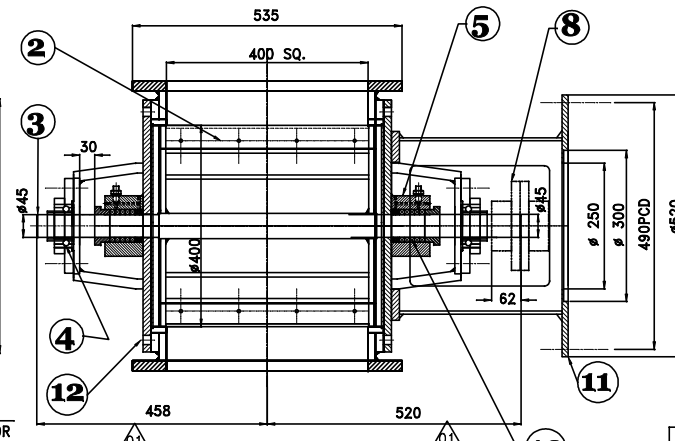
CLYDE BERGEMANN INDIA PVT. LTD.
C7 PHUL, NITDA, DISTT. GAURAH, BIHAR
MAGAR, UTTAR PRADESH, INDIA 801305

PO SL NO: 01
GENERAL ARRANGEMENT FOR
01 NO. LANCE TUBE ASSLY

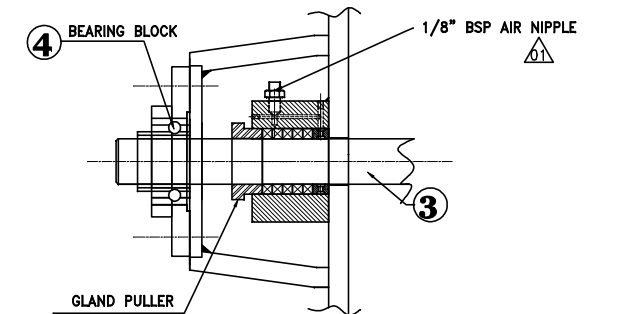
| REV. | DESCRIPTION | PREP'D BY | APP'D BY | DATE | REV. | INITIAL | ISSUE |
|------|-------------|-----------|----------|------|------|---------|---------------|
| 5 | | | | | A | | INITIAL ISSUE |
| 4 | | | | | | | |
| 3 | | | | | | | |
| 2 | | | | | | | |



ELEVATION



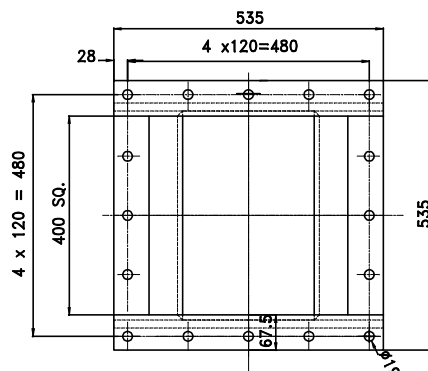
END VIEW



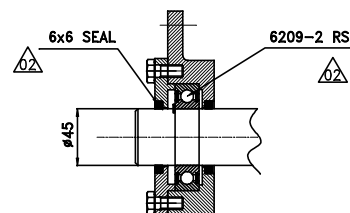
ENLARGED DETAIL FOR SEALING/GLAND

SPECIFICATIONS

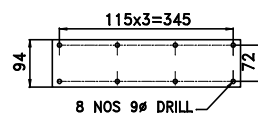
| OPERATING PARAMETERS: | | |
|-----------------------|---------|--------------|
| MATERIAL HANDLE: | | LIGNITE ASH |
| BULK DENSITY: | Gram/cm | 0.58 |
| MATERIAL TEMP | °C | 200 |
| VOLUMN EFFICIENCY | % | 90% |
| CAPACITY | TPH | 1 T/Hr |
| MODEL NO | | URAV-400x400 |
| ROTAR R.P.M. | | 25 RPM |
| NO. OF VANES | | 6 SIX |



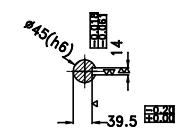
PLAN



ENLARGED DETAIL FOR BEARING BLOCK



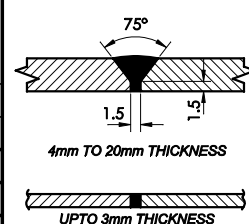
INSPECTION DOOR



ROTOR END SHAFT DETAILS

| ITEM | DESCRIPTION | MATERIAL | QTY. | REMARKS |
|------|------------------------------------|------------------------------------|------|---------|
| 12 | END CLOSING PLATE | IS:2062, Gr. B / ASTM-A,36 / EQUI. | 2 | |
| 11 | GEARED MOTOR SUPPORTING HOUSING | IS:2062, Gr. B / ASTM-A,36 / EQUI. | 1 | |
| 10 | LANTERN RING | GLAND | 2 | |
| 9 | INSPECTION DOOR | IS:2062, Gr. B / ASTM-A,36 / EQUI. | 1 | |
| 8 | FLEXIBLE COUPLING | STANDARD (BY CLIENT) | 1 | |
| 7 | GEAR BOX | AS PER SPEC. (BY CLIENT) | 1 | |
| 6 | ELECTRIC MOTOR | AS PER SPEC. (BY CLIENT) | 1 | |
| 5 | GLAND HOUSING | IS:2062, Gr. B / ASTM-A,36 / EQUI. | 2 | |
| 4 | FLANGED BEARING HOUSING Fabricated | 6209-2RS With Gland seal | 2 | |
| 3 | SHAFT | SA 240 TP 304. | 1 | |
| 2 | ROTOR BLADE | SA 240 TP 304. | 6 | |
| 1 | CASING FABRICATED | IS:2062, Gr. B / ASTM-A,36 / EQUI. | 1 | |

- NOTE :-**
- 1) ALL DIMENSIONS ARE IN MM.
 - 2) ALL WELDS ARE 4mm THK FILLET U.O.S.
 - 3) ALL SHARP EDGES ARE TO BE ROUNDED OFF.
 - 4) GEARED MOTOR IS IN CLIENT SCOPE OF SUPPLY.
 - 5) FLEXIBLE COUPLING IN CLIENT SCOPE OF SUPPLY.



BUTT WELD DETAILS

THIS DRAWING IS THE PROPERTY OF SHIVAM CAST PRODUCTS AND SHALL NOT BE COPIED, REPRODUCED IN ANY FORM OR DISCLOSED TO ANY FIRM, THIRD PARTY OR PERSON WITHOUT WRITTEN PERMISSION.

| TOLERANCE | | mm |
|----------------------|----------------|-------|
| LINEAR | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER OVALITY | UPTO 600Ø | ± 2 |
| | 601Ø TO 1000Ø | ± 5 |
| | 1001Ø TO 1800Ø | ± 10 |
| FLANGE PCD THICKNESS | ABOVE 1800Ø | ± 20 |
| | | ± 0.5 |
| | | ± 10% |



Shivam Cast Products

139, GIDC, V.U. Nagar - 388 121, Anand, Gujarat, India
Ph: +91 2692 232299/231195 Fax: +91 2692 233390

| | | | | |
|---|----------|------------|-----------------------|----------|
| TITLE : GEN. ARRANGEMENT OF ROTARY AIR LOCK VALVE(400Ø) | | DRN. | R.S.Jajal | 11-07-15 |
| CLIENT : KEPCO PLANT SERVICES & ENGG. CO. | | CHD. | D.M | 11-07-15 |
| ENQ. No.: By E-Mail | | APPD. | | |
| 23-05-15 | | NAME | INITIAL | DATE |
| NTS | APPROVAL | 11-07-15 | DRG. No. RV-4514-0002 | |
| SCALE | STATUS | ISSUE DATE | SHT. 1 OF 1 | REV. 02 |

| REV. | DESCRIPTION | DATE | BY |
|------|--|----------|-----|
| 02 | Bearing block sealing revised | 07-08-15 | RSJ |
| 01 | As per client's requirements air sealing and gland maintenance revised-Re draw | 30-07-15 | RSJ |

REF. DRG. No. SKETCH

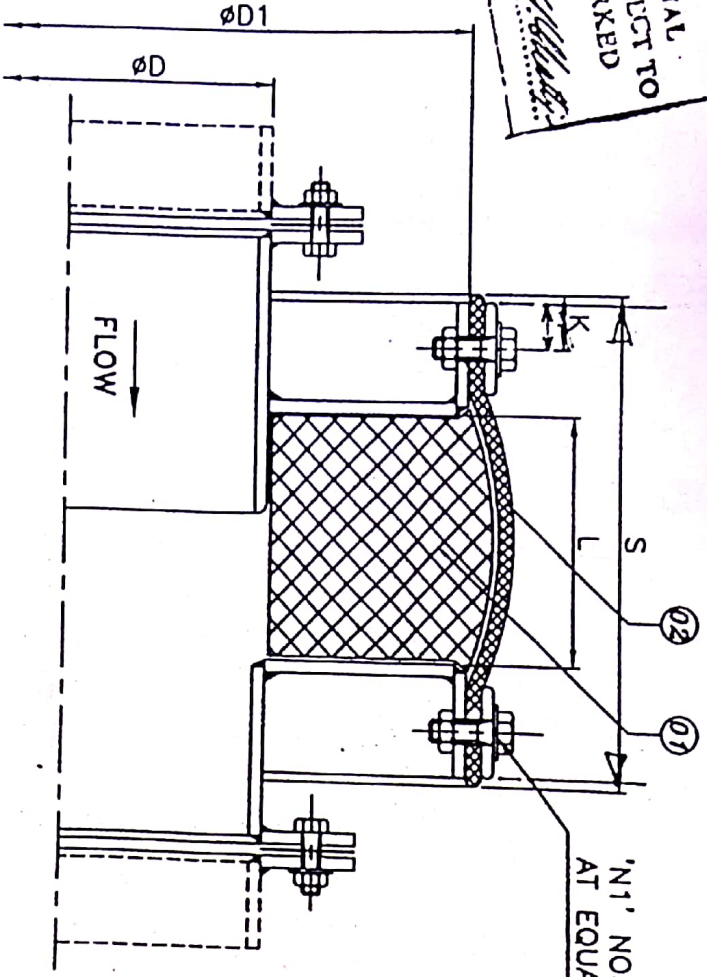
REF. DESIGN No.: 0002

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| S.No | TAG NO | TYPE | QTY | ØD | ØD1 | L | S | K | N1 | LOCATION |
|------|--------|-------|-----|------|------|-----|-----|-----|-----|-------------------|
| 02 | EJ-2 | 40X-W | 02 | 4406 | 4606 | 230 | 430 | 35* | 144 | CYCLONE O/L DU |
| 04 | EJ-4 | 40X-W | 02 | 2136 | 2536 | 230 | 430 | | 80 | CYCLONE DRYNCOMER |

EJ-2 550mm = S
EJ-4 500mm = S

ALSTOM Power Boilers
APPROVED
 IN RESPECT OF TERMINAL
 DIMENSION ONLY SUBJECT TO
 MODIFICATION AS MARKED
 IN RED.
 DATE: 6/5/2002



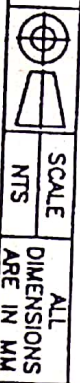
AS SPECIFIED BY CUSTOMER

Refer Alstom Boy
 A 0009887-2513 and
 A 0009887-2517

1. KEI SCOPE : ONLY FABRIC AND BOLSTER IN OPEN BELT CONDITION WITH HOLES PUNCHING CONDITION.
2. ONLY DIMENSIONAL AND VISUAL CHECK APPLICABLE ON FINISHED MATERIAL

| | |
|----------|------------------|
| CHD | 6.10.2002 |
| APPD | S. A. M. 25-4-02 |
| KEI REF. | 4502/2002 |

G. A. OF NON-METALLIC
 EXPANSION JOINTS



SCALE NTS
 ALL DIMENSIONS ARE IN MM

| S.No | DESCRIPTION | REF. TYP | SS W/M+G.F. MATERI. |
|------|-------------|----------|---------------------|
| 02 | FABRIC | | |
| 01 | BOLSTER | | |

CLIENT: ALSTOM POWER BOILERS
 PROJECT: AKRIMOTA

(((KEI)))
 Keld Ellentoft India Pvt. Ltd.
 I-5 Vyasarpadi Indl. Estate
 CHENNAI-600039.

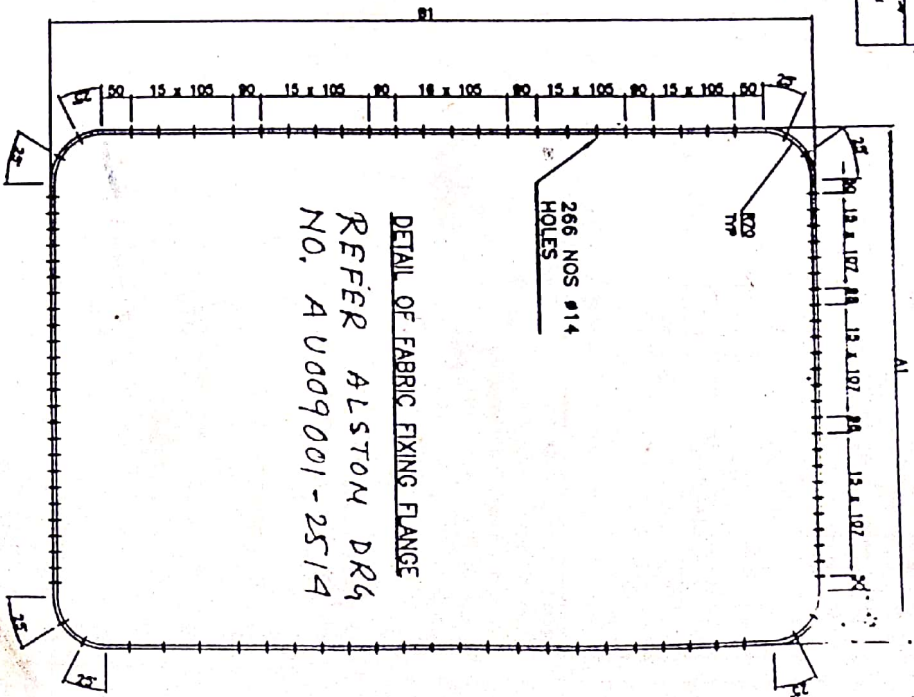
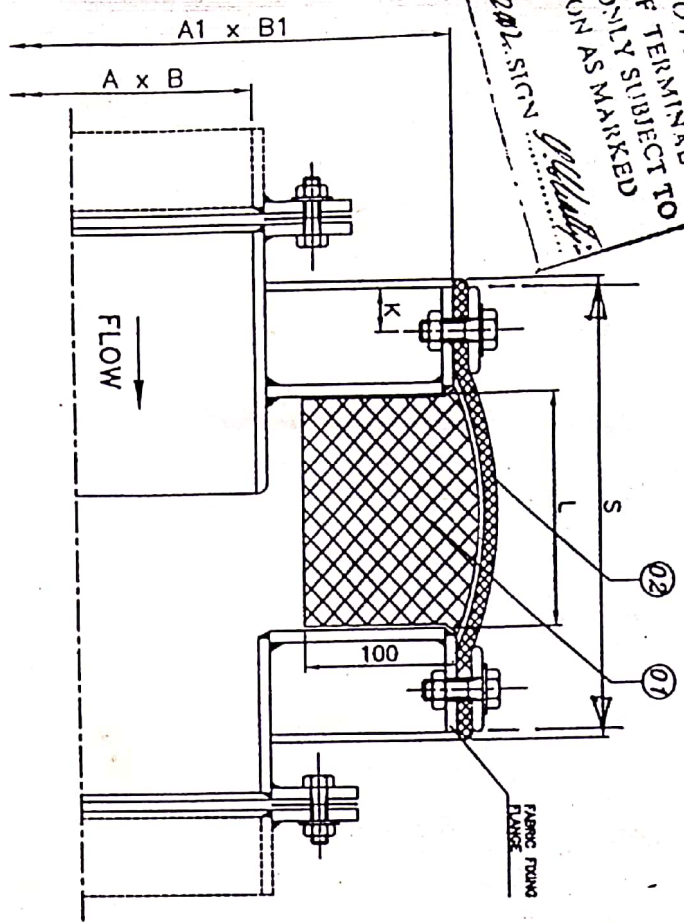
CUST. REF: KE.EN0209.02
 DRG. No: KE.EN0209.02

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| S.No | TAG.NO | TYPE | QTY | A | B | '1 | B1 | L | S | LOCATION | K |
|------|--------|-------|-----|------|------|------|------|-----|-----|------------------|-----|
| 03 | EJ-3 | 40X-W | 01 | 4765 | 8312 | 5271 | 8600 | 200 | 400 | CYCLONE O/L DUCT | 35* |

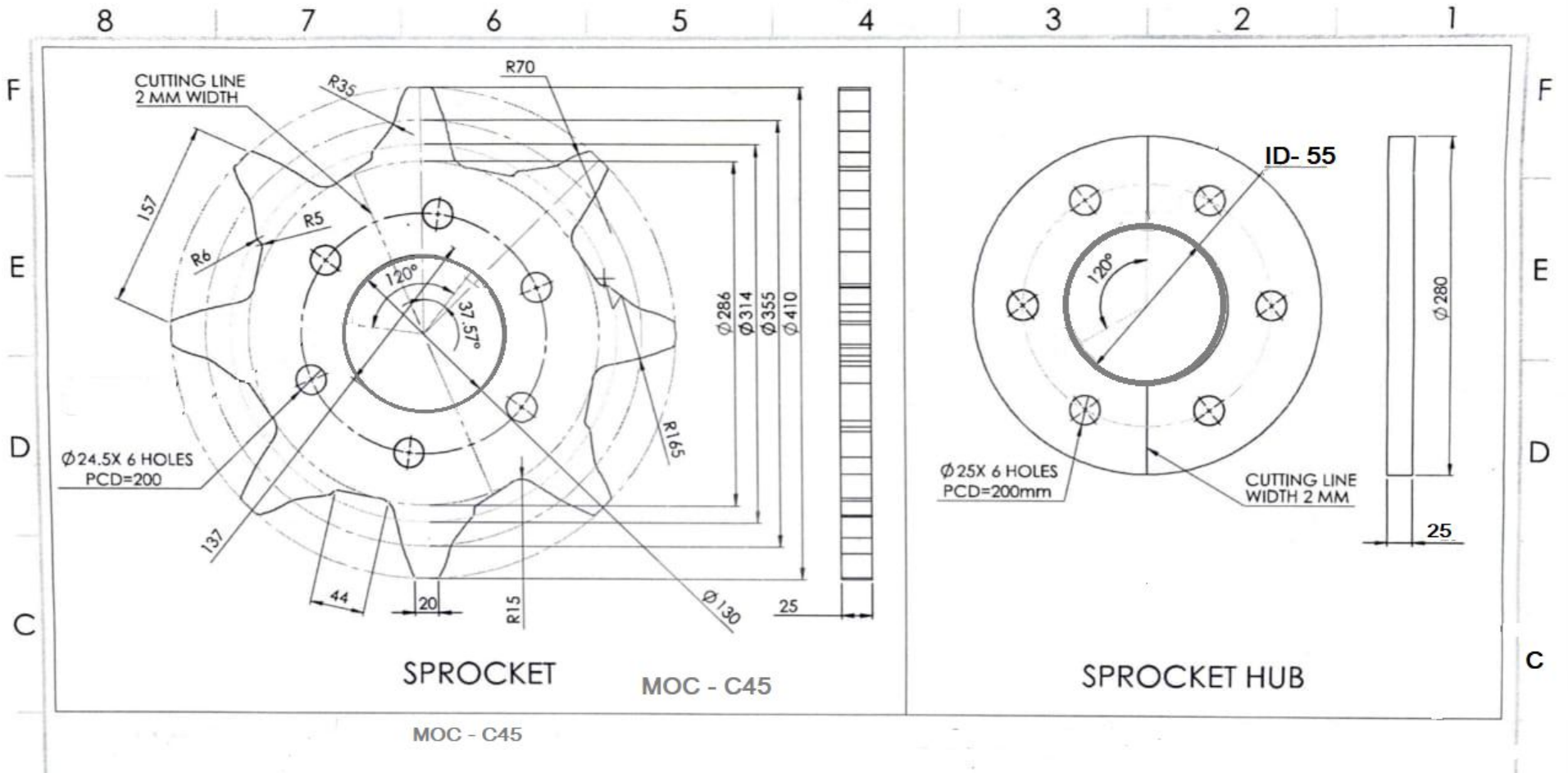
* TO BE SPECIFIED BY CUSTOMER

ALSTOM POWER BOILERS Ltd.
 ENGINEERING DIVISION
 APPROVED
 IN RESPECT OF TERMINAL TO
 DIMENSION ONLY SUBJECT TO
 MODIFICATION AS MARKED
 IN RED.
 DATE: 6/5/2002. SIGN: *[Signature]*

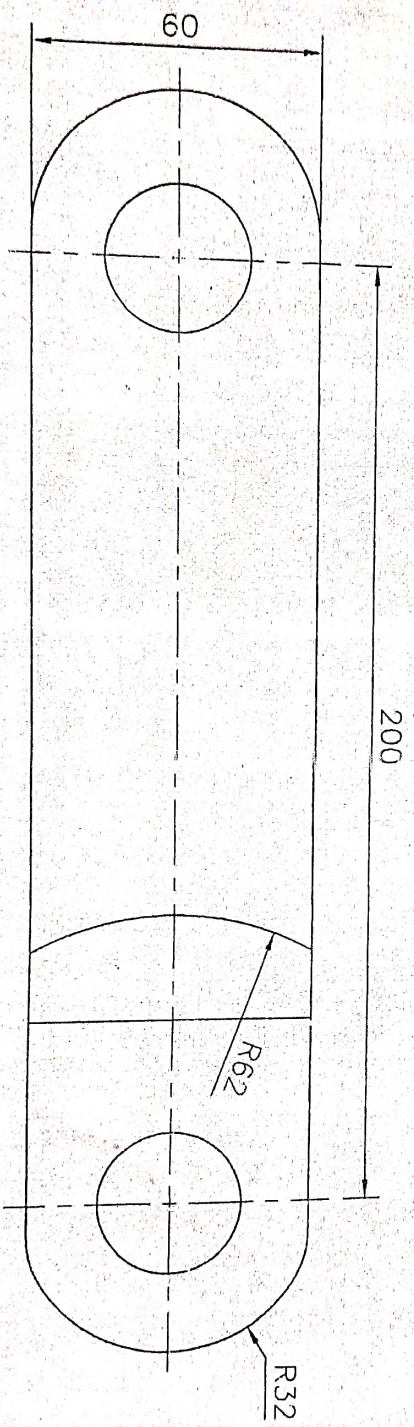
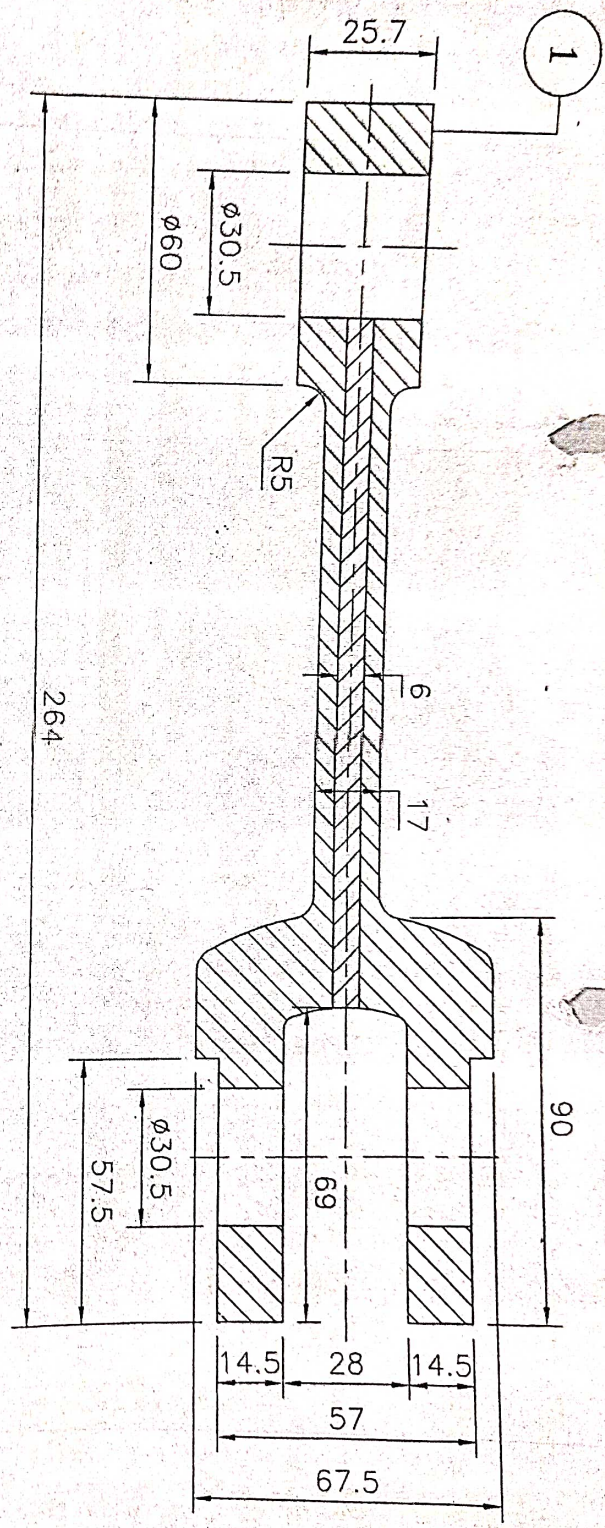


1. KEI SCOPE : ONLY FABRIC AND BOLSTER IN OPEN BELT CONDITION WITH HOLES PUNCHING CONDITION.
2. ONLY DIMENSIONAL AND VISUAL CHECK APPLICABLE ON FINISHED MATERIAL

| | | | | | |
|---|--------------------|--|---------------------------|------------|--------------------------|
| CHD | <i>[Signature]</i> | G. A. OF NON-METALLIC EXPANSION JOINTS | | SCALE | ALL DIMENSIONS ARE IN MM |
| APPD | <i>[Signature]</i> | | | NTS | |
| KEI REF. | 4502/2002 | | | | |
| (((KEI))) Keld Ellentoff India Pvt. Ltd. 1-51, Vyasaripudi Indl. Estate CHENNAI-600039. | | PROJECT: | AKRIMOTA | CUST. REF: | DRG. No: KE.EN0209.01A |
| | | CLIENT: | ALSTOM POWER BOILERS LTD. | REF: | RE: OC |
| 02 | FABRIC | REF. TYP | | | |
| 01 | BOLSTER | SS W/A+G.FAB+G.FE | | | |
| S.No | DESCRIPTION | MATERIAL | | | |



Link of overhead line



G.M.D.C. LTD.

Akri Mota Thermal Power Project

Verified/Inspected By *[Signature]* 20/10/09
 Dept. Head *[Signature]* 20/10/09

Sr. Manager (P&A) Asst. Manager (Fin.)

| DGN. | DRN. | CHD. | TRD. | APP. | SIGN. | DATE |
|------|------|------|------|------|-------|------------|
| | HCC | | | | | 27.02.2009 |

SCALE : N.T.S.

ALL DIMENSIONS ARE IN M.M.

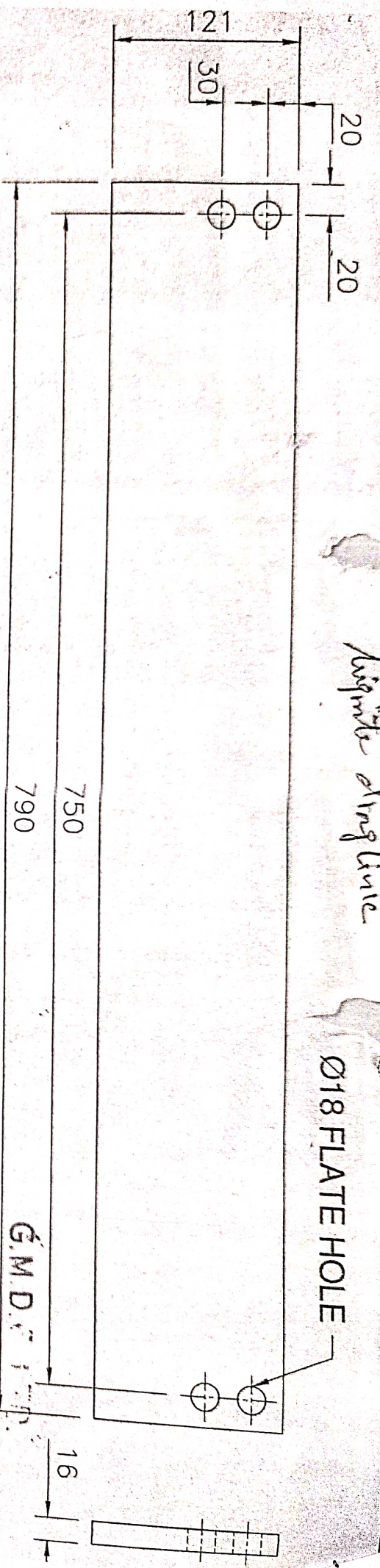
MATERIAL : **LINK FOR LIG. CONV. CHAIN**

QTY. : 1 NOS.

DRG. NO. / AMI-HCC-PART NO.

As per drawing

Ø18 FLATE HOLE



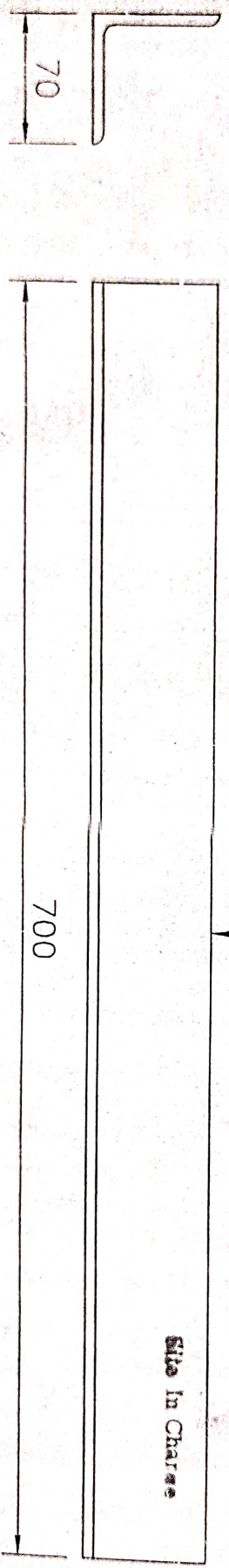
FLIGHT BAR

70X70X6 ANGLE

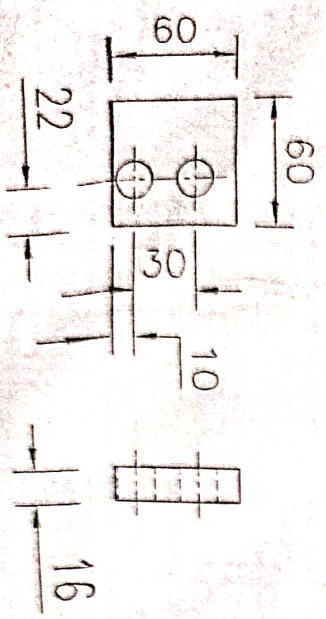
Site In Charge

Sr. Manager / Asst. Manager

Akri Moha
Verified by
: 201 Head



FLIGHT ANGLE



FLIGHT

| DCGN. | DCGN. | DATE | FLIGHT ANGLE PARTS FOR IIG. CONV. CHAIN | |
|-------------------------------|-------|------------|--|--|
| DRN. | HCC | 27.02.2009 | MATERIAL : | |
| CHD. | | | | |
| TRD. | | | | |
| APP. | | | QTY. : 1 NOS. | |
| SCALE : N.T.S. | | | DRG. NO. / AMI-HCC-4 | |
| ALL DIMENSIONS ARE IN M.M. | | | PART NO. | |

Lignite Draglines

G. M. D. C. LTD.

Thermal Power Project

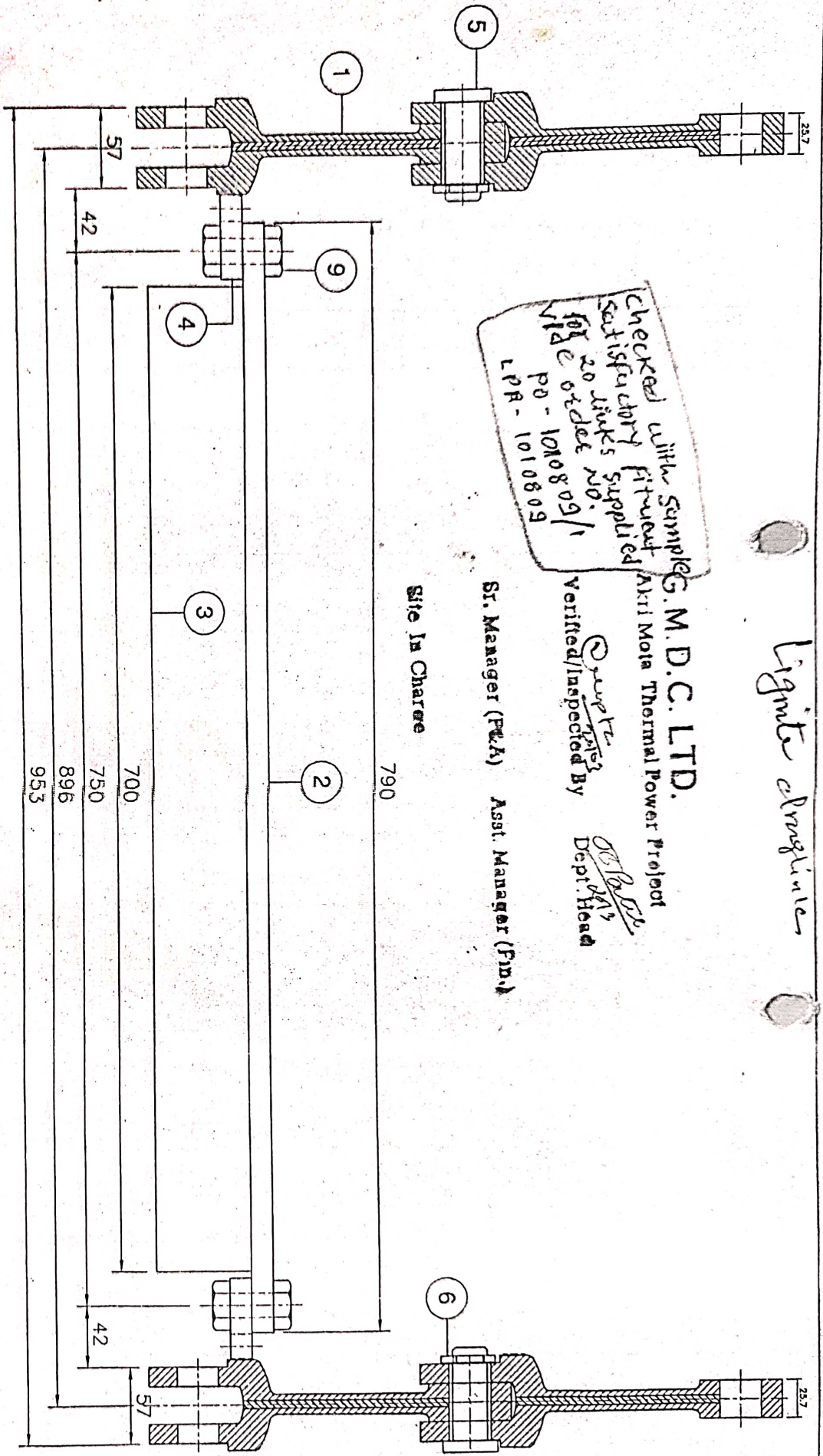
Checked with Sample
Satisfactory fitment
for 20 links supplied
Vid e order no.
PO - 1010809/1
LPR - 1010809

Verified/Inspected By

Dept. Head

Sr. Manager (P&A) Asst. Manager (P&A)

Site In Charge



| | | | |
|----------|--|-----------|----------|
| 9. | BOLT & NUT LOCK NUT WITH WASHER M16X70 | 04 | S.S. 304 |
| 6. | CIRCLIP | 04 | S.S. 304 |
| 5. | PIN | 04 | S.S. 410 |
| 4. | FLIGHT | 02 | C-45 |
| 3. | FLIGHT ANGLE | 01 | IS-2062 |
| 2. | FLIGHT BAR | 01 | C-45 |
| 1. | CHAIN LINK | 04 | 42C/M04 |
| PART NO. | ITEM | QTY./LINK | REMARKS |

| | | |
|------|-----|------------|
| DGN. | HCC | 27.02.2009 |
| DRN. | | |
| CHD. | | |
| TRD. | | |
| APP. | | |

SCALE : N.T.S.

ALL DIMENSIONS ARE IN M.M.

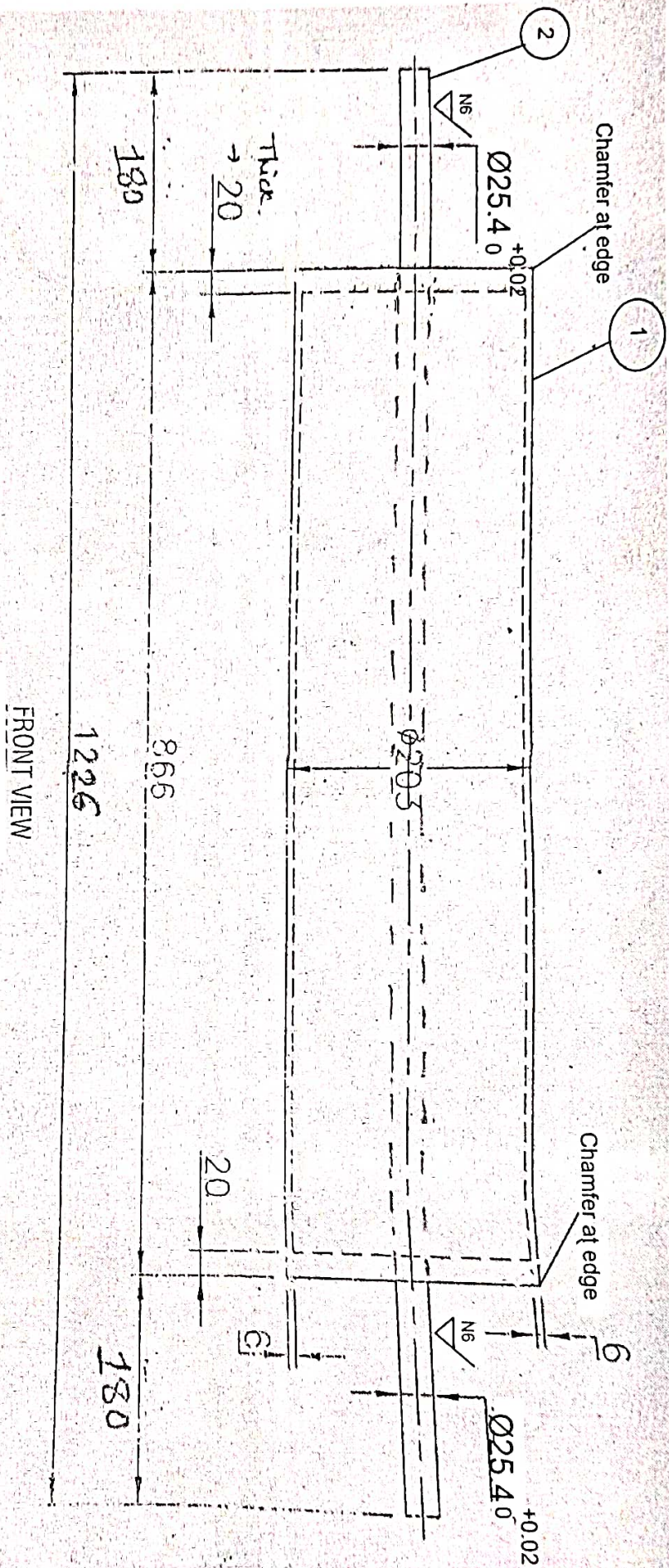
CONVEYOR CHAIN
LINK ASSEMBLY FOR
LIGNITE CONVEYOR

MATERIAL :

QTY. : 1 NOS.

DRG. NO. /
PART NO.

RETURN ROLLER OF GRAVIMETRIC FEEDER



- 1.MOC-P265GH PIPE
- 2.MOC-EN-8 ROD
- ECCENTRICITY:NON

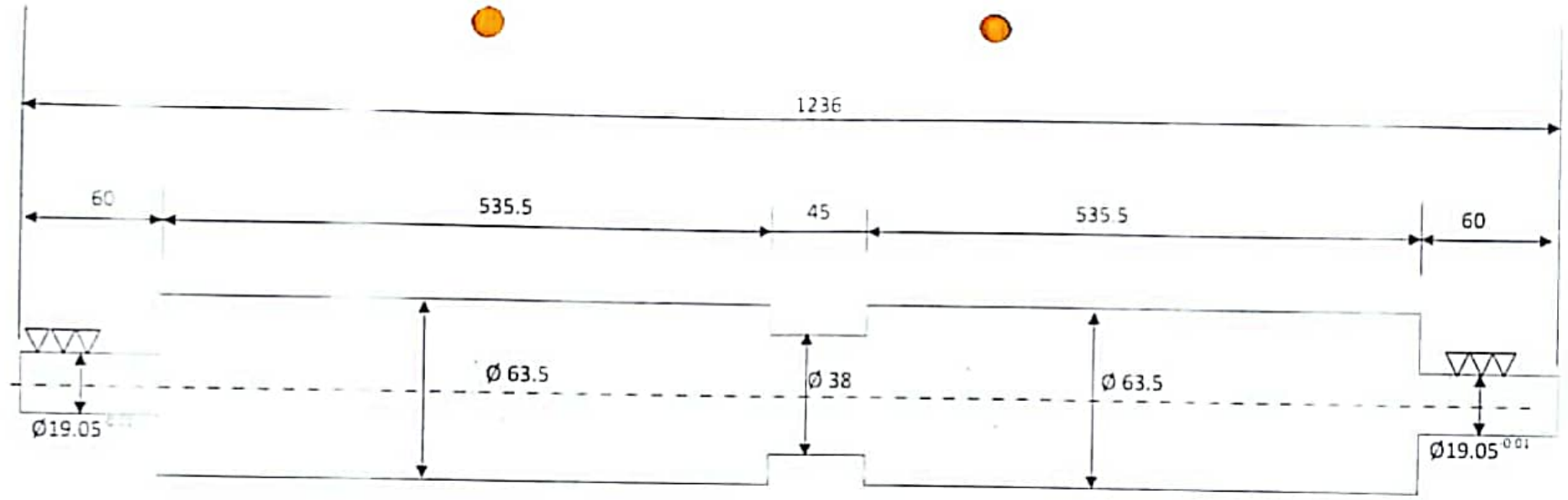
| OGN. | SIGN. | DATE |
|------|--------|------------|
| DRN. | HONEST | 03.05.2010 |
| CHL. | | |
| TRD. | | |
| APP. | | |

SCALE : N.T.S.

ALL DIMENSIONS
ARI M.M.

ROLLER FOR GRAVIMETRIC
FEEDER RETURN BELT

DRG. NO. :- A/HCC/11



SOLID ROLLER WITH MOC-EN8

Note:

1. Roller should straight in length
2. All Dimension in MM
3. Scale: NTS
4. Edge Chamfer

| Prepared By | HOD-BMD | DGM(POWER) |
|--------------------|--------------------|------------|
| <i>[Signature]</i> | <i>[Signature]</i> | |

| REDUCER PARTS LIST | | |
|--------------------|---------------------------------------|-----|
| PART NO. | DESCRIPTION | QTY |
| 001 | HOUSING | 1 |
| 005 | ENDSHIELD, OUTPUT SIDE | 1 |
| 006 | ENDSHIELD, OPPOSITE SIDE | 1 |
| 014 | COVER | 1 |
| 025 | SPACER, AXIS 2 | 1 |
| 031 | OUTPUT SHAFT | 1 |
| 041 | PINION AXIS 3 | 1 |
| 042 | PINION AXIS 1, MOTOR SHAFT | 1 |
| 043 | BEVEL PINION, AXIS 2 | 1 |
| 044 | PINION SHAFT AXIS 2 | 1 |
| 051 | WHEEL AXIS 4 | 1 |
| 052 | WHEEL AXIS 2 | 1 |
| 053 | WHEEL AXIS 3 | 1 |
| 061 | BEARING AXIS 4, LEFT 6026 | 1 |
| 062 | BEARING AXIS 4, RIGHT 6026 | 1 |
| 063 | BEARING AXIS 2, FRONT 32311B | 1 |
| 064 | BEARING AXIS 2, REAR 32311B | 1 |
| 065 | BEARING AXIS 3, RIGHT 32312B | 1 |
| 066 | BEARING AXIS 3, LEFT 32312 | 1 |
| 078 | KEY FOR HOLLOW SHAFT WHEEL | 1 |
| 080 | KEY, AXIS 2 | 1 |
| 081 | KEY, AXIS 3 | 1 |
| 090 | SEAL, OUTPUT SIDE 130X160X15AS | 1 |
| 091 | SEAL, OPPOSITE SIDE 130X160X15AS | 1 |
| 092 | O-RING SEAL 470X4 | 2 |
| 095 | PLUG SEALS | 3 |
| 100 | RETAINING RING, HOLLOW SHAFT (AXIS 4) | 1 |
| 101 | RETAINING RING, AXIS 2 | 2 |
| 102 | RETAINING RING, MOTOR SHAFT | 1 |
| 110 | SHIMS, AXIS 3 | 1 |
| 111 | SHIMS, AXIS 2 | 1 |
| 112 | SPACER, HOLLOW SHAFT (AXIS 4) | 1 |
| 117 | SPACER, AXIS 2 | 2 |
| 118 | SPACER, AXIS 3 | 2 |
| 140 | CUP PLUG, AXIS 2 | 1 |
| 150 | NUT | 1 |
| 151 | WASHER | 1 |

| REDUCER PARTS LIST (CONT.) | | |
|----------------------------|------------------------------|-----|
| PART NO. | DESCRIPTION | QTY |
| 153 | SCREW (WHEEL) | 1 |
| 154 | WASHER, IN/OUT WHEEL | 1 |
| 155 | PIN, SHAFT PINION | 1 |
| 156 | BOLTS, JOURNAL SECURING | 12 |
| 191 | FILLING PLUG | 1 |
| 192 | LEVEL PLUG | 1 |
| 193 | MAGNETIC DRAIN PLUG | 1 |
| 200 | LIFTING PLUG | 1 |
| 205 | HOLLOW SHAFT THREADED WASHER | 1 |
| 206 | EXTRACTOR RETAINING RING | 2 |

| INPUT SHAFT PARTS LIST | | |
|------------------------|-----------------------|-----|
| PART NO. | DESCRIPTION | QTY |
| 7 | "AP" INPUT FLANGE | 1 |
| 8 | C-FACE | 1 |
| 32 | INPUT SHAFT | 1 |
| 67 | BEARING (PINION SIDE) | 1 |
| 68 | BEARING (SHAFT SIDE) | 1 |
| 84 | SHAFT KEY | 1 |
| 85 | PINION KEY | 1 |
| 96 | OIL SEAL | 1 |
| 102 | PINION RETAINING RING | 1 |
| 108A | RETAINING RING | 1 |
| 109 | RETAINING RING | 1 |
| 120 | RING | 1 |
| 121 | RING | 1 |
| 122 | SPACER | 1 |
| 157 | SCREWS | 4 |
| 203 | COUPLING (MOTOR HALF) | 1 |
| 204 | BEARING RING | 1 |
| 208 | OIL DEFLECTOR | 1 |
| 209 | NILOS BEARING SHIELD | 1 |



WARNING DISCONNECT ALL POWER WHILE SERVICING UNITS

STOCK
Stock Equipment Company
Chagrin Falls • Ohio • 44023-4398
SPX CORPORATION

SCALE: _____
DWN WILTSHIRE DATE 6-21-01
CHK _____ DATE _____
APVD _____ DATE _____
CAD FILE# a2842004.dwg

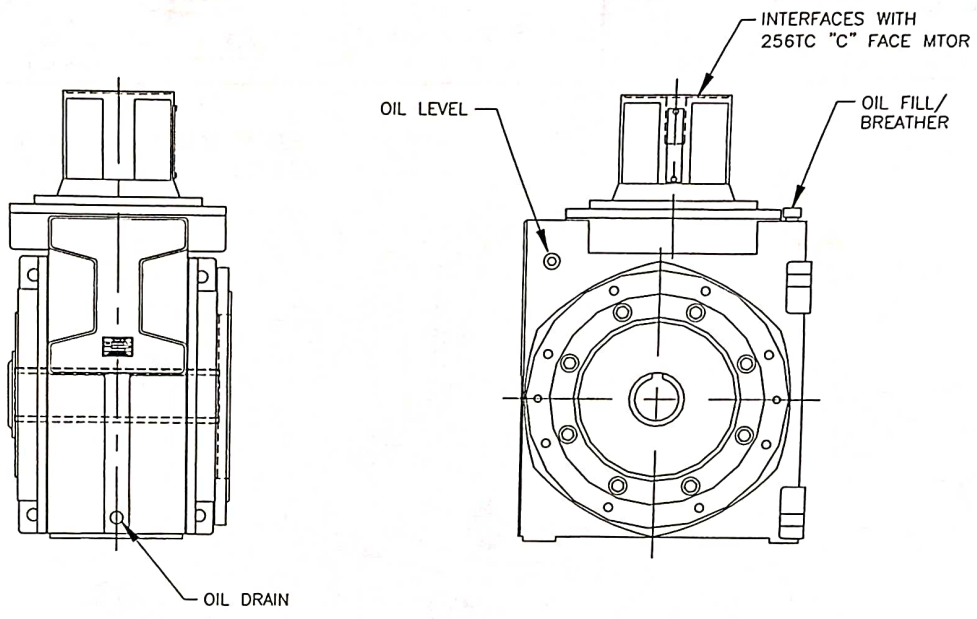
BELT DRIVE REDUCER
PARTS LIST-LUBE & MAINT
100 : 1 RATIO
PART NO. C21968-1

INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY

SHEET
4 OF 6

A28420

REV
0



WARNING

DISCONNECT ALL POWER WHILE SERVICING UNITS

APPROX. UNIT WEIGHT = 1,150 LBS.

| REVISION | PREPARED BY | DATE |
|----------|-------------|------|
| | | |

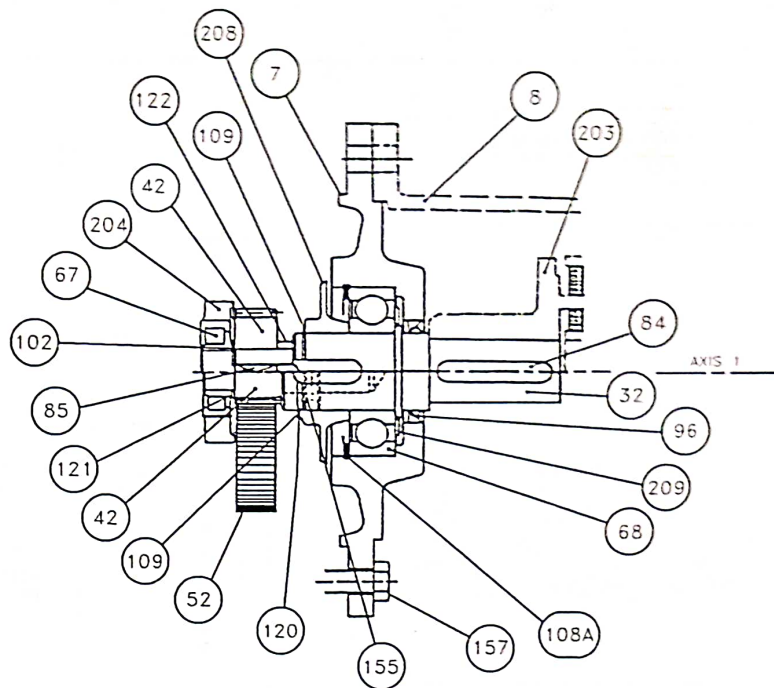
STOCK
 Stock Equipment Company
 Chagrin Falls • Ohio • 44023-4398
 SPX CORPORATION

SCALE: NONE
 DWN WILTSHIRE DATE 6-21-01
 CHK _____ DATE _____
 APVD _____ DATE _____
 CAD FILE# a2842001.dwg

BELT DRIVE REDUCER
 PARTS LIST-LUBE & MAINT
 100 : 1 RATIO
 PART NO. C21968-1

INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY

| | | |
|--------|--------|-----|
| SHEET | A28420 | REV |
| 1 OF 6 | | 0 |



WARNING

DISCONNECT ALL POWER
WHILE SERVICING UNITS

STOCK
Stock Equipment Company
Chagrin Falls • Ohio • 44023-4398
SPX CORPORATION

SCALE: _____
DWN WILTSHIRE DATE 6-21-01
CHK _____ DATE _____
APVD _____ DATE _____
CAD FILE# a2842003.tif

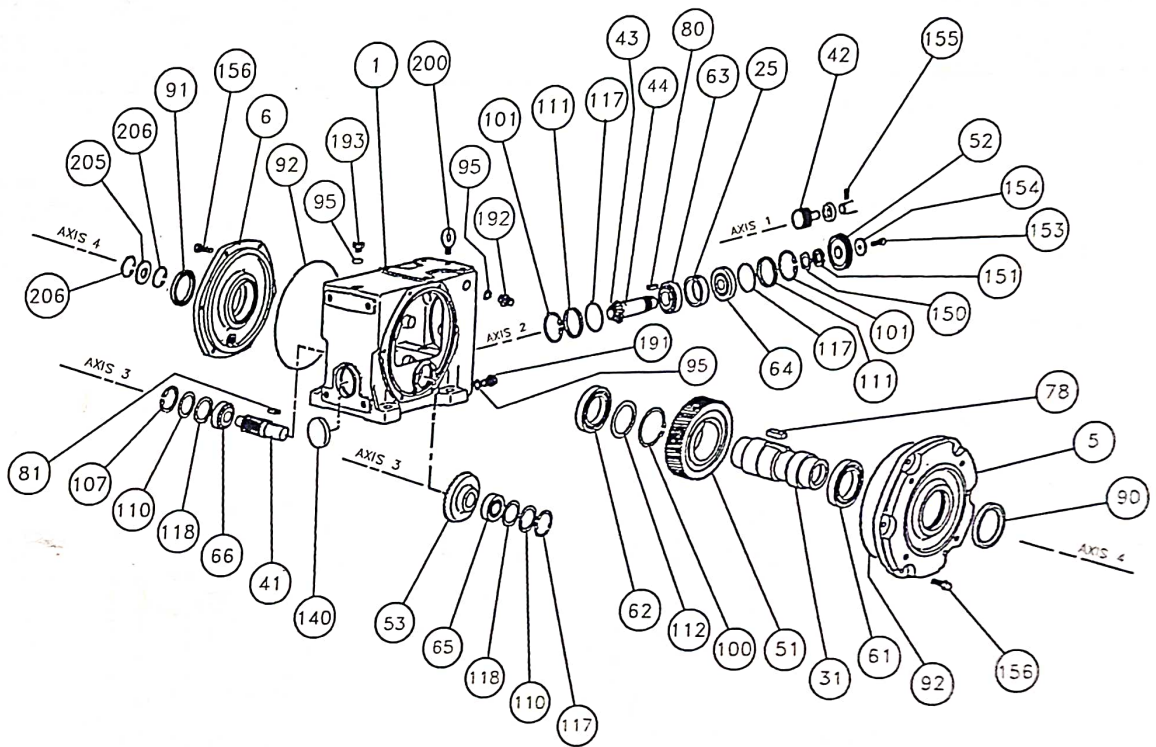
BELT DRIVE REDUCER
PARTS LIST-LUBE & MAINT
100 : 1 RATIO
PART NO. C21968-1

INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY

SHEET
3 OF 6

A28420

REV
0



WARNING

DISCONNECT ALL POWER
WHILE SERVICING UNITS

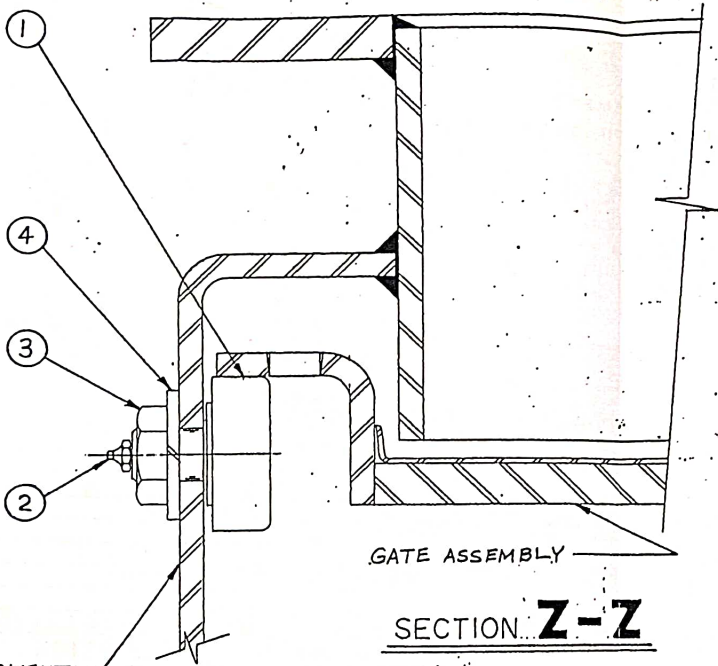
STOCK
Stock Equipment Company
Chopin Falls • Ohio • 44023-4398
SPX CORPORATION

SCALE: _____
DWN WILTSHIRE DATE 6-21-01
CHK _____ DATE _____
APVD _____ DATE _____
CAD FILE# a2842002.tif

BELT DRIVE REDUCER
PARTS LIST-LUBE & MAINT
100 : 1 RATIO
PART NO. C2196S-1

INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY

| | | |
|--------|--------|-----|
| SHEET | A28420 | REV |
| 2 OF 6 | | 0 |



GATE ASSEMBLY

SECTION **Z-Z**

BODY WELDMENT

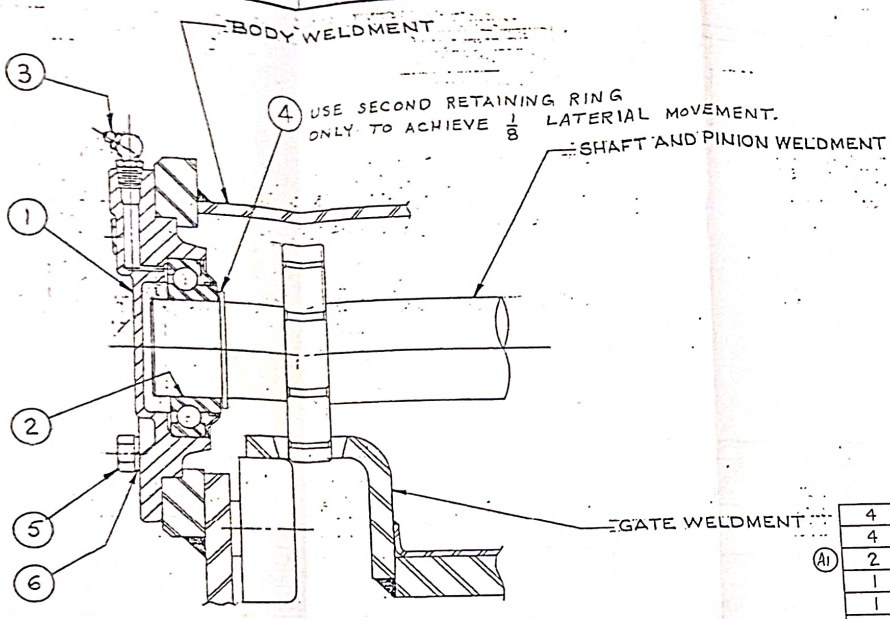
| | | | | |
|-----|-----|----------|----------------------|------|
| 1 | 1 | WLP 18 | LOCKWASHER | 4 |
| 1 | 1 | NHJP 18 | NUT-JAMMING | 3 |
| 1 | - | FG 43 | GREASE FITTING-ANGLE | 2 |
| - | 1 | FG 42 | GREASE FITTING-STR | |
| 1 | 1 | W1864-1 | ROLLER | 1 |
| QTY | QTY | PART NO. | DESCRIPTION | ITEM |
| -2 | -1 | | GROUP B14144 | |

| | | | | |
|---|-------|-----|-----|------|
| REV | DRAWN | CHK | APP | DATE |
| | | | | |
| REVISED PART IS INTERCHANGEABLE WITH ORIGINAL | | | | |
| UNLESS OTHERWISE SPECIFIED | | | | |
| DECIMAL DIMENSIONS $\pm .005$ | | | | |
| FRACTIONAL DIMENSIONS $\pm 1/8$ | | | | |
| ANGLES $\pm 1/2^\circ$ | | | | |
| MAX SURFACE ROUGHNESS TO BE FOR MACHINED SURFACES $125 \sqrt{\text{ }}$ | | | | |
| REBURR AND BREAK ALL SHARP EDGES AND CORNERS | | | | |
| GEOMETRIC TOLERANCE PER ANSI Y14.5 | | | | |
| SCALE: 1/2 | | | | |
| DWN DUSCHEN DATE 5-9-94 | | | | |
| CHK DUSCHEN DATE 6-11-94 | | | | |
| APV DUSCHEN DATE 6-11-94 | | | | |

| | | |
|--------------------|---|--------------|
| REF.DWG X4262 | NEXT ASSY. | S.O.NO. 6984 |
| PART NO. SEE CHART | INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY | |
| MATL N/A | ROLLER GROUP FOR 42"-48" COAL VALVES | |
| QTY. N/A | SHEET | REV |
| | OF | 0 |

STOCK
Stock Equipment Company
Chagrin Falls • Ohio • 44022
A Unit of General Signal

B14144



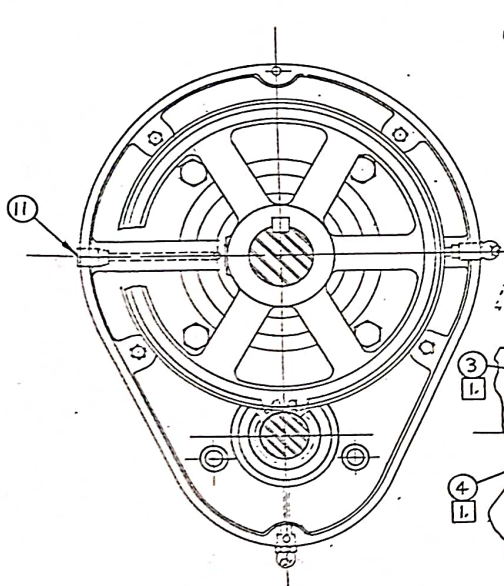
SECTION **Y-Y**

| QTY | PART NO. | DESCRIPTION | ITEM |
|-----|-----------|--------------------------|------|
| 4 | WLP 08 | LOCKWASHER | 6 |
| 4 | SCP 08-10 | SCREW | 5 |
| 2 | RR 16 | RETAINING RING | 4 |
| 1 | FG 43 | GREASE FITTING | 3 |
| 1 | B 89 | BEARING | 2 |
| 1 | Y303-1 | BEARING HOUSING (CLOSED) | 1 |

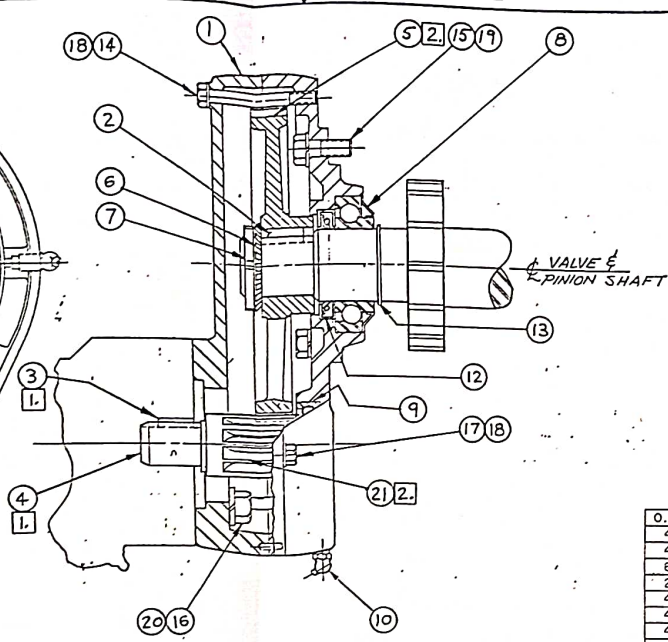
GROUP B14224-1 S.O.NO. 7106

| | |
|--|--|
| UNLESS OTHERWISE SPECIFIED | REF.DWG X4455 |
| DECIMAL DIMENSIONS .001 | PART NO. SEE CHART |
| FRACTIONAL DIMENSIONS 1/8 | MATL N/A |
| ANGLES 1/2° | QTY. N/A |
| SEE SURFACE REQUIREMENTS TO BE FOR MACHINED SURFACES | Stock Equipment Company Chagrin Falls, Ohio 44022 A Unit of General Signal |
| REMOVE AND BREAK ALL SHARP EDGES AND CORNERS | |
| GEOMETRIC TOLERANCE PER ANSI Y14.5 | |
| REVISED PART IS INTERCHANGEABLE WITH ORIGINAL | |
| SCALE: 1/2 | DATE 1-16-94 |
| DWIN DUSCHEN | DATE 2-25-94 |
| CHK DUSCHEN | DATE 2-25-94 |
| APVD [Signature] | DATE 2-25-94 |

| | |
|--|--------|
| INFORMATION CONTAINED ON THIS DRAWING IS CONFIDENTIAL AND PROPRIETARY TO STOCK EQUIPMENT COMPANY AND MAY NOT BE REPRODUCED OR USED WITHOUT THE EXPRESS WRITTEN CONSENT OF STOCK EQUIPMENT COMPANY. | REV |
| END BEARING GROUP FOR 42"-48" COAL VALVES | A |
| SHEET 1 OF 1 | B14224 |



REDUCER WITH COVER
CASTING REMOVED



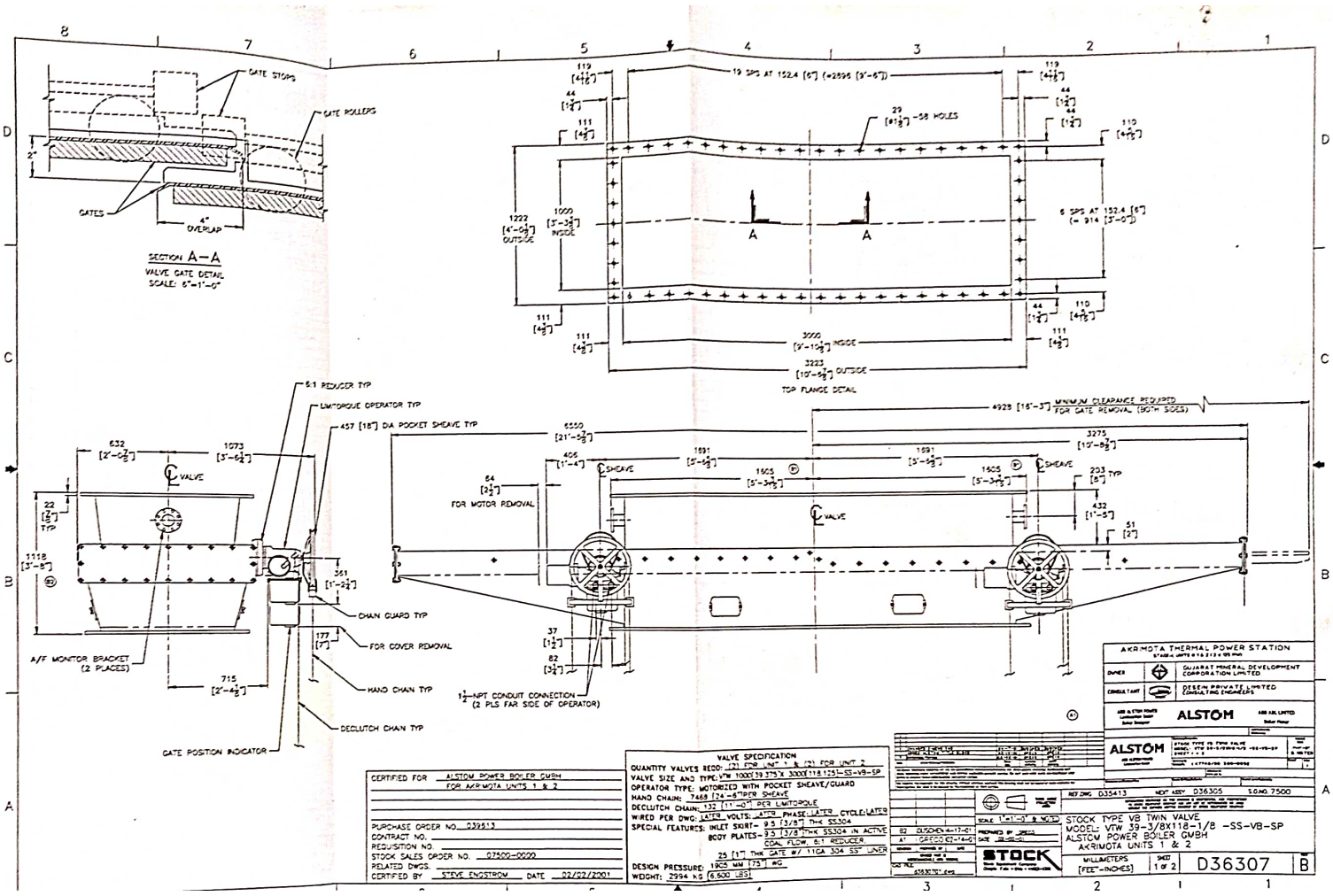
SECTION W-W

| QTY | PART NO. | DESCRIPTION | ITEM |
|------|-----------|--------------------|------|
| 0.5* | GO 15 | GREASE | 21 |
| 4 | WLP 10 | LOCKWASHER | 20 |
| 4 | WLP 08 | LOCKWASHER | 19 |
| 6 | WLP 06 | LOCKWASHER | 18 |
| 2 | SSP 06-08 | SCREW | 17 |
| 4 | SCP 10-16 | ISCREW | 16 |
| 4 | SCP 08-10 | ISCREW | 15 |
| 4 | SCP 06-24 | ISCREW | 14 |
| 1 | RR 16 | RETAINING RING | 13 |
| 1 | RG 26 | SEAL-GREASE | 12 |
| 1 | FP 59 | PLUG-PIPE | 11 |
| 2 | FG 43 | GREASE FITTING | 10 |
| 1 | B 114 | BEARING | 9 |
| 1 | B 89 | BEARING | 8 |
| 1 | B 42 | BEARING-LOCKNUT | 7 |
| 1 | B 41 | BEARING-LOCKWASHER | 6 |
| 1 | Y426-1 | GEAR-SPUR | 5 |
| 1 | X1330-1 | GEAR-PINION | 4 |
| 1 | W129-50 | KEY | 3 |
| 1 | W38-20 | KEY | 2 |
| 1 | C3041-1 | GEAR HOUSING 6:1 | 1 |

- NOTES:
- 1. PINION (X1330-1) AND KEY (W129-50) TO BE PRESSED INTO LIMITORQUE.
 - 2. COAT GEAR (Y426-1) AND PINION (X1330-1) TEETH WITH OPEN GREASE GEAREP (GO 15 OR EQUAL).

| | | |
|--------------------|--|----------------|
| REF. DWG Y3177 | NEXT ASSY. | S.O. NO. 6984 |
| PART NO. SEE CHART | GEAR REDUCER 6:1 TO LIMITORQUE GROUP FOR 42"-48" COAL VALVES | |
| MATL N/A | QTY. N/A | GROUP C19148-1 |
| SCALE: 1/2 | DATE: 11-11-52 | DATE: 11-11-52 |
| DATE: 11-11-52 | DATE: 11-11-52 | DATE: 11-11-52 |

C19148 10



SECTION A-A
VALVE GATE DETAIL
SCALE: 6"=1'-0"

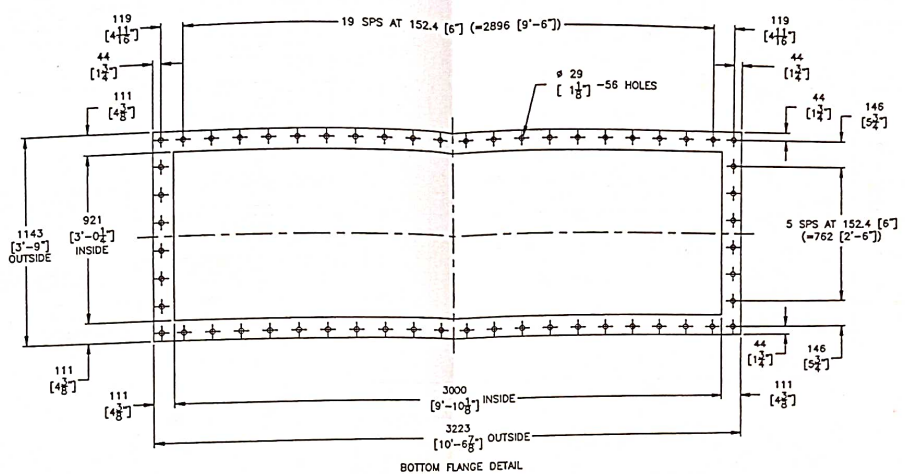
TOP FLANGE DETAIL

| | |
|--------------------------------|--|
| AKR MOTA THERMAL POWER STATION | |
| OWNER | GOVERNMENT GENERAL DEVELOPMENT CORPORATION LIMITED |
| DESIGNER | DESIGN PRIVATE LIMITED CONSULTING ENGINEERS |
| AKR MOTA THERMAL POWER STATION | |
| ALSTOM | |
| AKR MOTA THERMAL POWER STATION | |

| | |
|-----------------------|-------------------------------|
| CERTIFIED FOR | ALSTOM POWER BOILER DIVISION |
| CONTRACT NO. | FOR AKR MOTA UNITS 1 & 2 |
| PURCHASE ORDER NO. | 023213 |
| REDUCTION NO. | |
| STOCK SALES ORDER NO. | 07300-0000 |
| RELATED DWGS. | |
| CERTIFIED BY | SURE INGSTROM DATE 22/02/2001 |

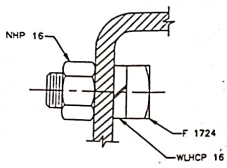
VALVE SPECIFICATION
 QUANTITY VALVES REQD: 21 FOR UNIT 1 & 21 FOR UNIT 2
 VALVE SIZE AND TYPE: VM 100X39 373 X 333X112 1/2 SS-VB-SP
 OPERATOR TYPE: MOTORISED WITH POCKET SHEAVE/GUARD
 HAND CHAIN: 1468 1/4-6" TAPER SHEAVE
 DECLUTCH CHAIN: 132 1/2-1" DIAM LIMB HOLE
 WIRED PER DWG. 125V VOLTS 3 PHASE 4 WIRE CYCLE/60 HZ
 SPECIAL FEATURES: INLET SKIRT - 0.5 (3/8)" THICK SS304
 BODY PLATES - 0.5 (3/8)" THICK SS304 IN ACTIVE
 COOL FLOW 6.1 REDUCER
 25 (1") THICK GATE W/ 11GA 304 SS LINER
 DESIGN PRESSURE: 1800 MM WG
 WEIGHT: 2994 KG (6600 LBS)

| | |
|------------------------------|--------------------------------------|
| STOCK TYPE | VB THIN VALVE |
| MODEL | VM 100X39 373 X 333X112 1/2 SS-VB-SP |
| ALSTOM POWER BOILER DIVISION | AKR MOTA UNITS 1 & 2 |
| WILLMETERS | 1 OF 2 |
| SHEET | D36307 |

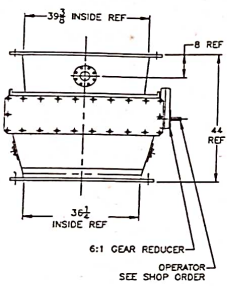


BOTTOM FLANGE DETAIL

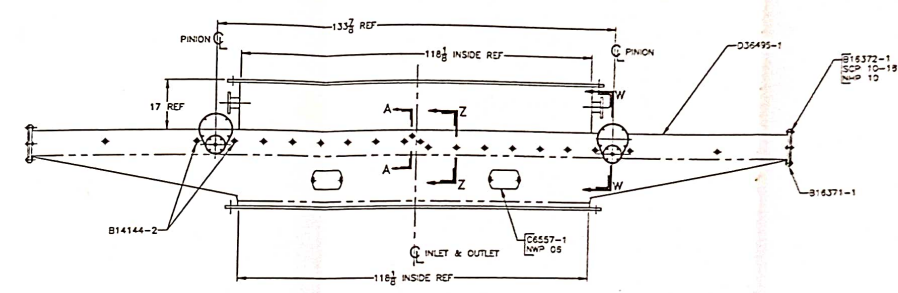
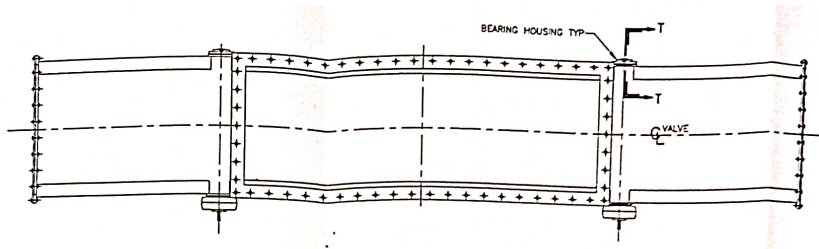
| | | |
|-------------------------------------|-------------------|---------------|
| REF: D35413 | NEXT ASSY: D36305 | S.O. NO. 7500 |
| STOCK TYPE VB TWIN VALVE | | |
| MODEL: VTW 39-3/8X118-1/8 -SS-VB-SP | | |
| ALSTOM POWER BOILER GMBH | | |
| AKRIMOTA UNITS 1 & 2 | | |
| MILLIMETERS | SHEET | D36307 |
| [FEET-INCHES] | 2 of 2 | B |



SECTION A-A
(TYP 4 PLS)
SCALE: ENLARGED



6:1 GEAR REDUCER
OPERATOR
SEE SHOP ORDER



NOTES:
FOR SECTION W-W SEE DWG C19148
FOR SECTION Y-Y SEE DWG B14224
FOR SECTION Z-Z SEE DWG B14144

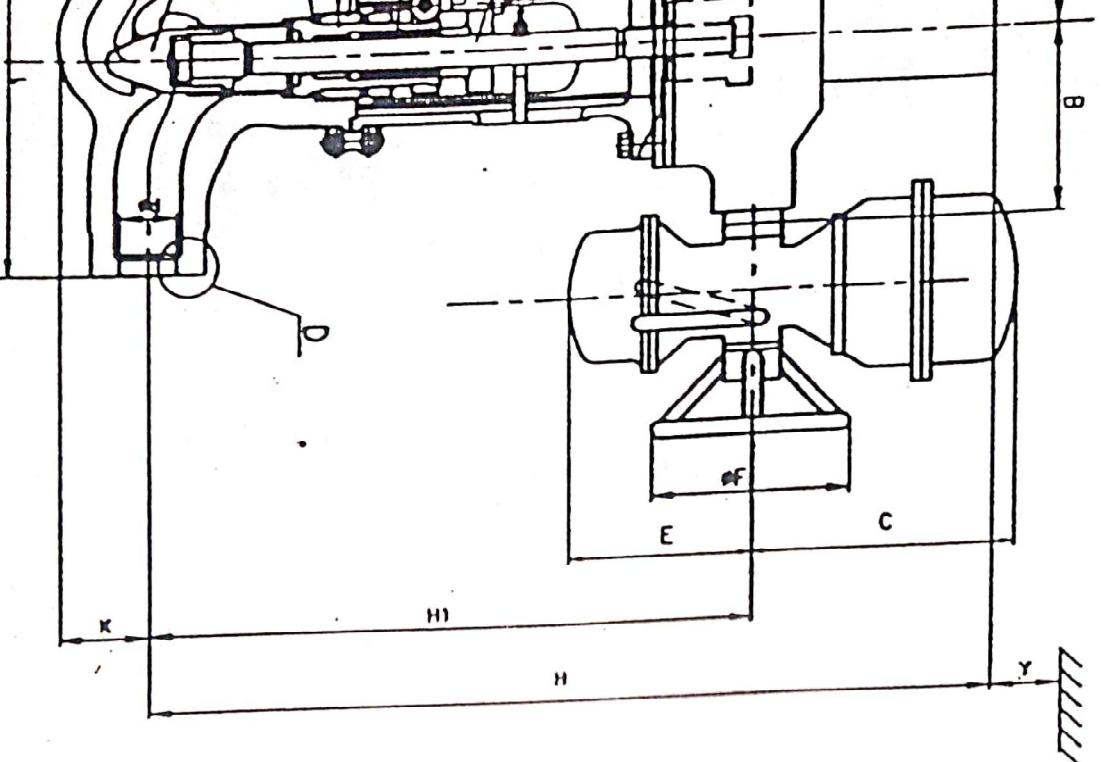
| QTY | PART NO. | DESCRIPTION |
|-----|----------|---------------|
| 1 | D36495-1 | BODY WELDMENT |
| 1 | A28474-1 | GL-FINAL ASSY |

| | | | | | |
|-----|------|----|------|-------|-------------|
| REV | DATE | BY | CHKD | APP'D | DESCRIPTION |
| 1 | | | | | |

| | | | | | |
|----------|----------|-----|----------|------|---|
| REF DWG | D36495 | REV | 03/23/57 | QTY | 1 |
| PART NO. | D36495-1 | REV | | QTY | 1 |
| MAT. | SEE DWG | REV | | QTY | 1 |
| SY | SEE DWG | REV | | QTY | 1 |
| DATE | 11/1/57 | BY | | CHKD | |

| | | | |
|-------|-------|--------|---|
| STOCK | 1 X 1 | D36496 | A |
|-------|-------|--------|---|

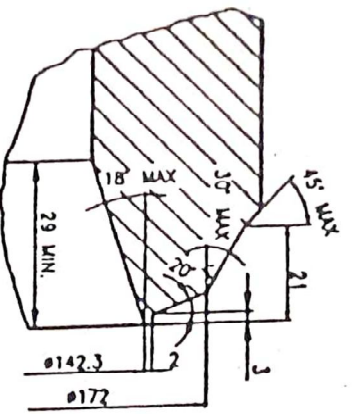
14/02/2011
 DRAWING AS MARKED



| QA S.No. | S.No. | SIZE (MM) | QTY./UNIT | UNIT | TAG NUMBERS |
|----------|-------|-----------|-----------|------|-------------|
| 8 | 8 | 150 | 1 | No.1 | 1LC110AA501 |
| | | | | No.2 | 2LC110AA501 |

WORKING PR.: - 162 Bar, WORKING TEMP.: - 147C

DESIGN STANDARD: ANSI B16.34
 RATING: CLASS 2500 AS PER ANSI B16.34
 DETAIL LENGTH: MANUFACTURER'S STANDARD
 ENDS: BUTT WELDED AS PER ANSI B16.25
 TESTING STANDARD: ANSI B16.34



ASME - B16.25 - FIG.5G
 (PIPE SIZE: Ø168.3x14.3)

| ITEM NO. | COM'NT |
|----------|---------------|
| 01 | BODY |
| 02 | BONNET |
| 03 | ORX |
| 04 | STV |
| 18 | WCL |
| 24 | ATTACHING ARM |
| 28 | OTC BOLT |
| 28000 | NUT |
| 29 | GASKET |
| 30 | PACKING |
| 80 | BOLT |
| 90 | ACTUATOR |

HYDRAULIC
 FOR SHELL :
 FOR SEAT :

| REV. | DATE | CHG | APPD | DESCRIPTION |
|------|---------|-----|------|-------------------------------|
| 02 | 23.2.02 | | | ISSUE REVISED PARTS INCLUDED. |
| 01 | 23.1.02 | | | EP DETAIL & TAG No. INCLUDED. |

365-131

BHARAT HEAVY ENGINEERING

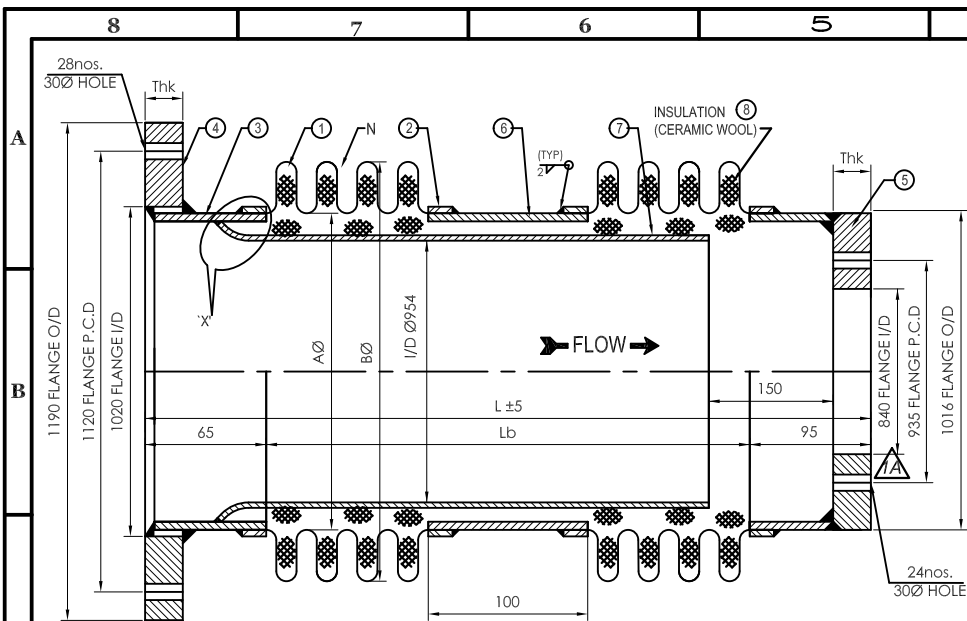
DATE: 11/2/2001

DRAWING NO: 97

CON: 97

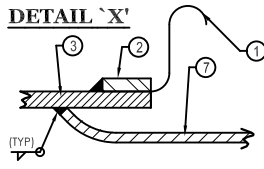
SALE ORDER NO: 97

| REV. | DATE | CHG | APPD | DESCRIPTION |
|------|------|-----|------|-------------|
| 64 | 000 | | | 640 |
| Y | A | B | C | 640 |
| X | | | | |



BELLOWS DIMENSIONS

| | | | |
|----|---------------------------|-----|-----------------|
| AØ | ID | mm | 1016 |
| BØ | OD AT CONVOLUTION | mm | 1113 |
| Lb | ACTIVE LENGTH OVER CONV. | mm | 420 = 320 + 100 |
| N | TOTAL NOS. OF CONVOLUTION | Nos | 8 = 4 + 4 |
| L | MFG.FREE LENGTH | mm | 580 |
| | INSTALLED LENGTH | mm | 580 |



- NOTE :-**
- 1) ALL DIMENSIONS ARE IN MM.
 - 2) ALL L.S JOINTS SHALL BE D.P. TESTED.
 - 3) SHIPPING BRACKET PAINTED YELLOW TO BE REMOVE AFTER INSTALLATION.
 - 4) FLOW DIRECTION TO BE MARKED ON BELLOWS.
 - 5) LEAKAGE TEST WILL BE CARRIED OUT BY AIR JET BUBBLE TEST AT 2Kg/Cm²
 - 6) TOLERANCE AS PER E.J.M.A / ASME.
 - 7) ALL WELDING AS PER ASME SECTION IX.
 - 8) ALL EXTERIOR C.S SURFACE TO BE PAINTED WITH ALUMINIUM HEAT RESISTANT PAINT SUITABLE 600°C, APPLY 2 COTS
 - 9) DESIGN PARAMETER ARE FOR REFERENCE ONLY. INSPECTION & TESTING WILL BE AS PER QAP.

SPECIFICATIONS

| | | | |
|-------------------------------|--------------------------|---------------------|--|
| DESIGN CODE | EJMA 2003+8th EDITION | | |
| EXPANSION JOINT SR/TAG NUMBER | 01 | | |
| TYPE | DOUBLE UNIVERSAL BELLOWS | | |
| SIZE (DUCT O/D) | mm | 1000 mm | |
| QUANTITY | No. | 1 | |
| DESIGN TEMP. (SKIN / FLOW) | °C | 250 / 1250 | |
| DESIGN PRESSURE | Kg/cm ² g | 1.02 | |
| TEST PRESSURE | Kg/cm ² g | SEE NOTE No. 9 | |
| AXIAL MOVEMENT EXTN/COMP | mm | 110 / 110 | |
| LATERAL MOVEMENT | mm | ±15 | |
| ANGULAR ROTATION | deg | 0 | |
| AXIAL SPRINGRATE | Kg/mm | 10 | |
| LATERAL SPRINGRATE | Kg/mm | 130 | |
| RATED CYCLE LIFE | Cycles | Above 10,000 Cycles | |

FLOW MEDIUM : BED ASH

| | | | | |
|---|-----------------|------------------------|-------------------|-----|
| 8 | Insulation | ~ 600° C (Loose Matl.) | CERAMIC WOOL | AR |
| 7 | Internal Sleeve | 5 THK | SA240 TP304 | 2 |
| 6 | Spool Piece | 10 THK | SA516 GR 70 | 1 |
| 5 | Flange - 2 | 20 THK (SOFF) | SA516 GR 70 | 1 |
| 4 | Flange - 1 | 20 THK (SOFF) | SA516 GR 70 | 1 |
| 3 | Weld End | 10 THK | SA516 GR 70 | 1+1 |
| 2 | Collar | 1.5 THK | SA240 TP304 / 321 | 4 |
| 1 | Bellows | 0.5 THK x 3PLY | SA240 TP310 | 2 |

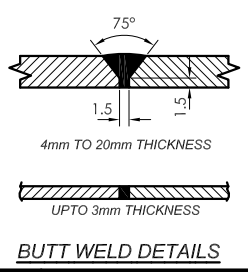
| ITEM NO | DESCRIPTION | SIZE | MATERIAL | QTY |
|---------|-------------|------|----------|-----|
|---------|-------------|------|----------|-----|



Shivam Cast Products

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 Ph: +91 2692 232299/231195 Fax: +91 2692 233390

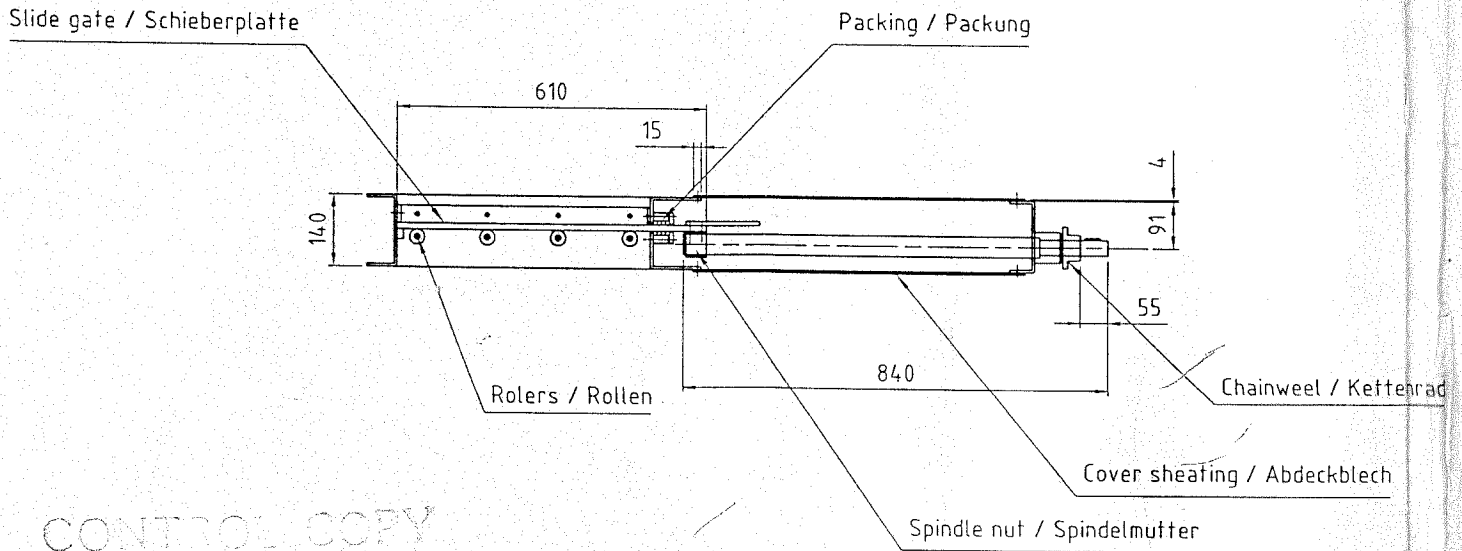
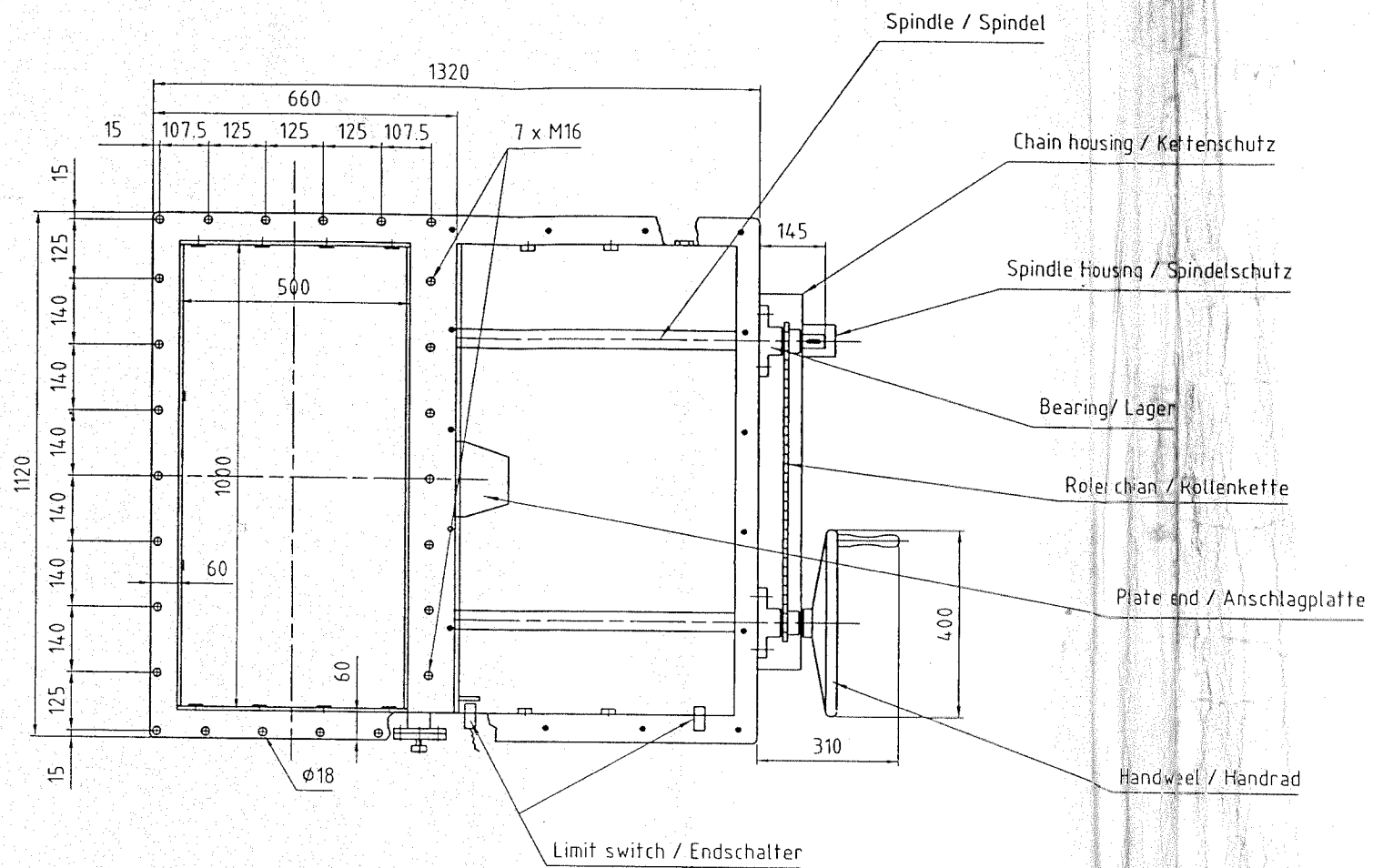
| | | | |
|-----------------------|----------------------|----------|-----|
| 1-A | AS PER CLIENT'S NOTE | 22.11.18 | SPP |
| REV. | DESCRIPTION | DATE | BY |
| REVISIONS | | | |
| REF. DRG. No. — | | | |
| REF. DESIGN No.: 4279 | | | |



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| TOLERANCE | | mm |
|------------------|----------------|-------|
| LINEAR | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER OVALITY | UPTO 600Ø | ± 2 |
| | 601Ø TO 1000Ø | ± 5 |
| | 1001Ø TO 1800Ø | ± 10 |
| | ABOVE 1800Ø | ± 20 |
| FLANGE PCD | | ± 0.5 |
| THICKNESS | | ± 10% |

| | | |
|---------------------------------|-------------|-----------------------|
| TITLE: CIRCULAR EXPANSION JOINT | DRN. S P P | 06.11.2017 |
| CLIENT: . | CHD. Ankit | 06.11.2017 |
| | APPD. D M P | 06.11.2017 |
| ENQ. No.: By E-Mail | 30.10.2017 | NAME INITIAL DATE |
| NTS | QUOTATION | DRG. No. SC-7236-4279 |
| SCALE | STATUS | ISSUE DATE |
| SHT. 1 OF 1 | | REV. 1-A |



| | |
|-----------|-------------------------|
| position | 1 |
| reference | gate valve manual drive |
| piece | 1 |
| Unit 1 | 1HHE11AA501 |
| | 1HHE12AA501 |
| | 1HHE21AA501 |
| | 1HHE22AA501 |
| Unit 2 | 2HHE11AA501 |
| | 2HHE12AA501 |
| | 2HHE21AA501 |
| | 2HHE22AA501 |



| | | | | | |
|--|--|---|---------------------------------------|--|--|
| Technische Änderungen vorbehalten Die Zeichnung ist unser Eigentum Jede Vervielfältigung, Vervielfältigung oder Mitteilung an dritte Personen ist strafbar und wird gerichtlich verfolgt (Urheberrechtsgesetz, Gesetz gegen unehrenhaften Wettbewerb BGG). Alle Rechte für den Fall der Patenterteilung § 13 Abs. 1 S. 1 PatG oder GfL-Entscheidungen § 15 Abs. 1 S. 1 GfL vorbehalten. | | Freimaßtoleranz DIN ISO 2768 mittel | Oberfläche DIN ISO 1302 Reihe 2 | Werkstückkanten L=0.5 L=0.3 außen innen | Maßstab 1:10 Menge - Baugr.: - Position - Kostentr.: 70156 |
| Zust. Änderungen | | Datum | Name | Spare parts plan / Ersatzteilplan Slide gate (Flachschieber) FS140-H 1000x500 | |
| | | Bearb. 01-07-24 | Kutzer M. | 7032.01.36/ 2A3 | |
| | | Gepr. | | Revision 0 | |
| | | Norm | | BI | |
| | | http://www.iem-kastl.de Telefon (0 96 421) 34 77 Telefax (0 96 421) 80-0 Industriegebiet Fördertechnik GmbH D 95506 Kastl (Kernath) | | | |
| | | Datum | Name | Jahresnr. 300-0092 | |

| | | |
|--|--|--|
| AKRIMOTA THERMAL POWER STATION STAGE-I, UNITS # 1 & 2 (2 x 125 MW) | | |
| OWNER | | GUJARAT MINERAL DEVELOPMENT CORPORATION LIMITED |
| CONSULTANT | | DESEIN PRIVATE LIMITED CONSULTING ENGINEERS |
| ABB ALSTOM POWER Combustion GmbH Boiler Designer | | ALSTOM ABB ABL LIMITED Boiler Maker |

| | | | |
|---|--|---|---------------------------|
| ALSTOM ABB ALSTOM POWER Combustion GmbH | | Benennung/Designation Spare parts plan / Ersatzteilplan Slide gate (Flachschieber) FS140-H 1000x500 | Maßstab Scale 1:10 |
| Zust. Fachbereich Division resp. | | T6 | |
| Zeichnung Nr. Drawing No. | | 1.47740 / 00 300 -0092 | Format Index 3 0 |
| Entstanden aus/Developed from | | Ersatz für/Substitution for | Ersetzt durch/Replaced by |

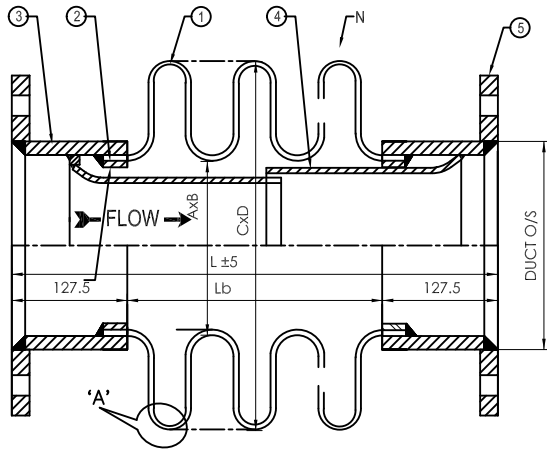
CONTROL COPY

ALSTOM POWER BOILERS SERVICES LTD
AKRIMOTA POWER PROJECT
RECEIVED 01/10/04

DATE: 24/12/04
SIGNATURE: *[Signature]*
MEMO REF NO: *[Handwritten]*
MEMO DATE: *[Handwritten]*

| | | | | | |
|---|---------------------------------|---------------|--------------------------|-----------------------|--|
| 5 | | | | | |
| 4 | | | | | |
| 3 | | | | | |
| 2 | | | | | |
| 1 | | | | | |
| 0 | Erst Erstellung / first issue | 01-07-24 | Kun | Gebhardt | |
| | Art der Änderung / Modification | Datum Date | gearbeitet drafted by | geprüft checked by | |

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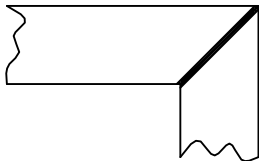
SPECIFICATIONS

| | | | |
|-------------------------------|------------------------|------------------------------|--|
| DESIGN CODE | EJMA 2003, 8th Edition | | |
| EXPANSION JOINT SR/TAG NUMBER | 01 | | |
| TYPE | SINGLE AXIAL BELLOWS | | |
| SIZE (NB) | mm | 950 X 450 | |
| QUANTITY | No. | 1 | |
| DESIGN TEMP. (SKIN/FLOW) | °C | 250 | |
| DESIGN PRESSURE | Kg/cm ² g | 0.5 | |
| TEST PRESSURE | Kg/cm ² g | 0.75 (2Kg AIR JET LEAK TEST) | |
| AXIAL MOVEMENT EXTN/COMP | mm | 50 / 50 | |
| LATERAL MOVEMENT PRIN/TRAN | mm | 0 / 0 | |
| ANGULAR ROTATION | deg. | 0 | |
| AXIAL SPRINGRATE | Kg/mm | 70.26 | |
| LATERAL SPRINGRATE | Kg/mm | 0 | |
| RATED CYCLE LIFE | Cycles | Above 10,000 Cycles | |
| MEDIUM : COAL DUST | | | |

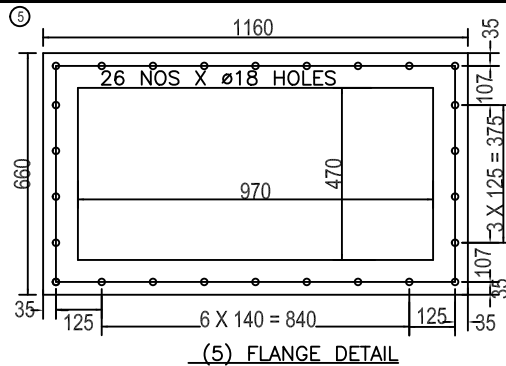
BELLOWS DIMENSIONS CONV. DEPTH=58mm, PITCH=55mm

| | | | |
|-----|---------------------------|-----|------------|
| AxB | ID | mm | 951 X 451 |
| CxD | OD AT CONVOLUTION | mm | 1070 X 570 |
| Lb | ACTIVE LENGTH OVER CONV. | mm | 220 |
| N | TOTAL NOS. OF CONVOLUTION | Nos | 4 |
| L | MFG.FREE LENGTH | mm | 475 |
| | INSTALLED LENGTH | mm | 475 |

DETAILS "A"



WELD DETAILS BELLOWS CORNER



(5) FLANGE DETAIL

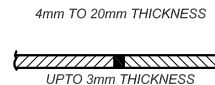
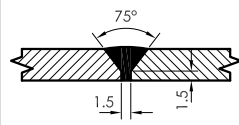
| 5 | Flanges | 12THK | M.S. | 2 |
|---------|-----------------|----------------|-------------|-----|
| 4 | Internal Sleeve | 3 THK | SA240 TP304 | 2 |
| 3 | Weld end | 8 THK | IS2062 GR A | 2 |
| 2 | Collar | 1.5 THK | SA240 TP304 | 2 |
| 1 | Bellows | 1.5 THK x 1PLY | SA240 TP304 | 1 |
| ITEM NO | DESCRIPTION | SIZE | MATERIAL | QTY |

NOTE :- 1) ALL DIMENSIONS ARE IN MM.
2) SHIPPING BRACKET PAINTED YELLOW TO BE REMOVE AFTER INSTALLATION.



Shivam Cast Products

139, GIDC, V.U. Nagar - 388 121, Anand, Gujarat, India
Ph: +91 2692 232299/231195 Telefax : +91 2692 233396



BUTT WELD DETAILS

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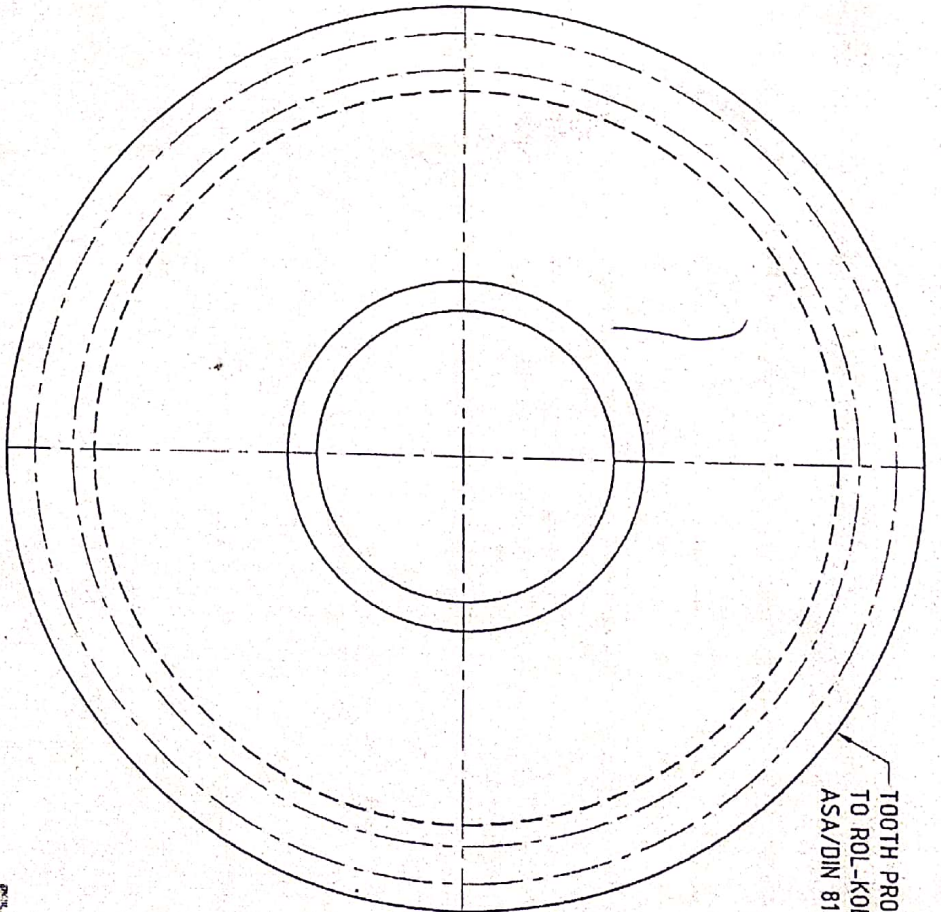
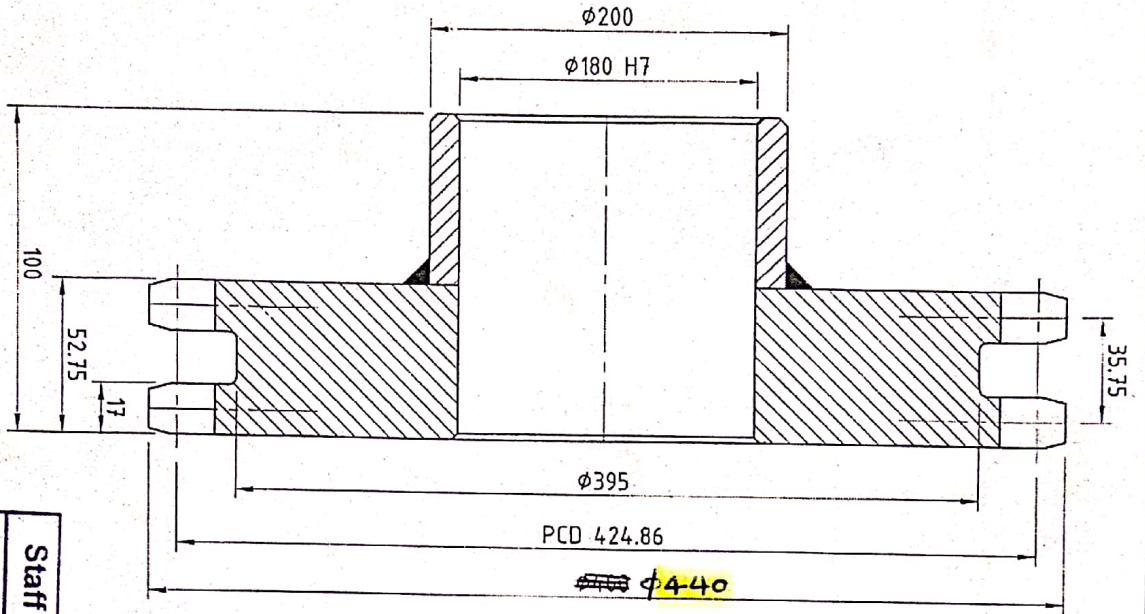
| TOLERANCE | | mm |
|----------------------|----------------|-------|
| LINEAR | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER | UPTO 600mm | ± 2 |
| | ABOVE 600mm | ± 3 |
| DIAMETER OVALITY | UPTO 600Ø | ± 2 |
| | 601Ø TO 1000Ø | ± 5 |
| | 1001Ø TO 1800Ø | ± 10 |
| FLANGE PCD THICKNESS | UPTO 1800Ø | ± 0.5 |
| | ABOVE 1800Ø | ± 10% |

| | | | |
|---|-----------|----------------------|-------------|
| TITLE : RECTANGULAR EXPANSION JOINT | DRN. | SPP | 07.09.12 |
| CLIENT : KEPCO PLANT SERVICES & ENGG. CO. | CHD. | JAYESH | 07.09.12 |
| | APPD. | DMP | 07.09.12 |
| ENQ. No. : BY E-Mail | 05.09.12 | NAME | INITIAL |
| NTS | QUOTATION | DRG. No. SC-3563-216 | |
| SCALE | STATUS | ISSUE DATE | SHT. 1 OF 1 |
| | | | REV. 02 |

| REV. | DESCRIPTION | DATE | BY |
|------|----------------------|----------|-----|
| 02 | Dimension Corrected | 30.10.17 | SPP |
| 01 | AS PER CLIENT'S NOTE | 30.10.17 | SPP |

REF. DRG. No.

REF. DESIGN No. : 216

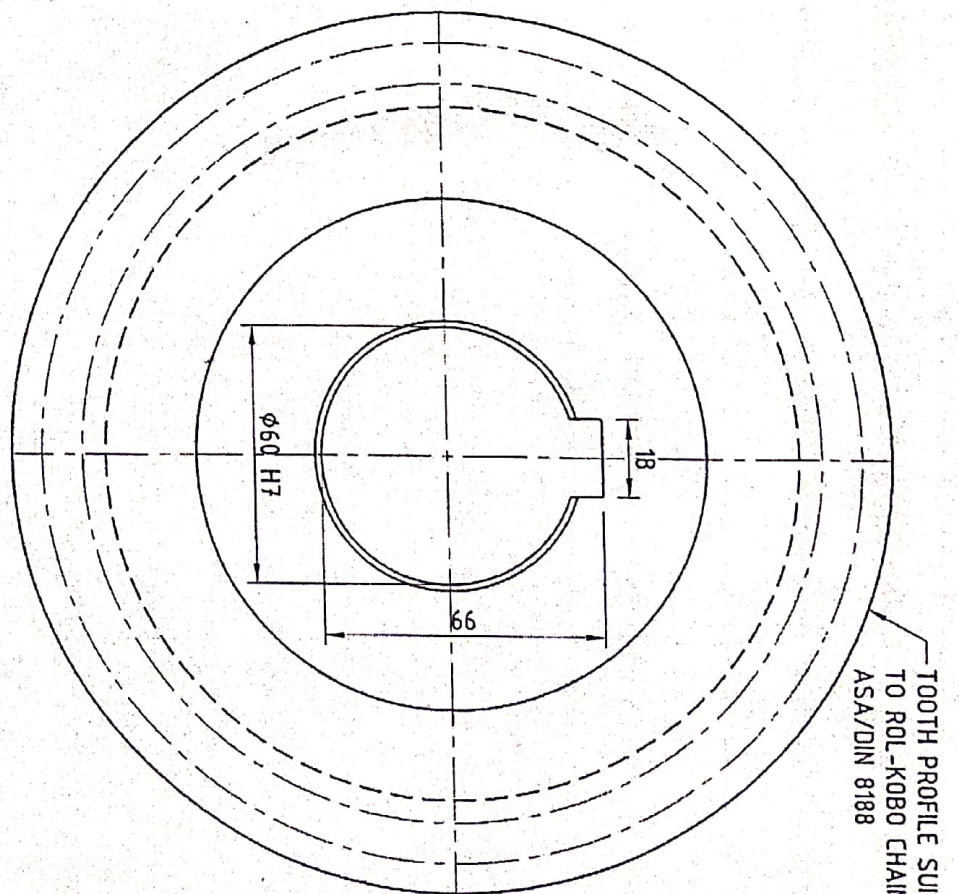
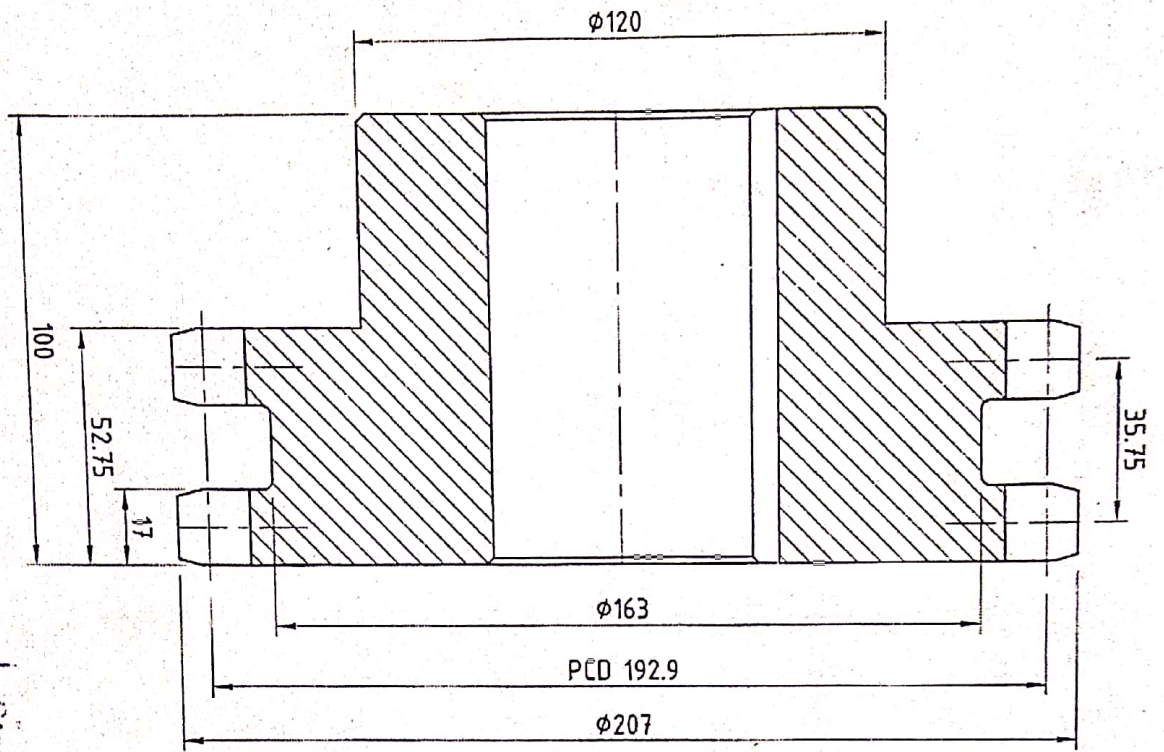


TOOTH PROFILE SUITABLE TO ROL-KOBO CHAIN 100-2 ASA/DIN 8188

| | |
|--|-------------------|
| | Staff |
| | Asst. Mgr. |
| | HOD |

REF. : KEP.PLA.SER.ENG.CO.LTD. (ASA/DIN 8188)

| | | | |
|--|-----------------------|----------|----------|
| ROLCON ENGINEERING CO. LTD. | | | |
| (SPROCKET DIVISION) | | | |
| Vallabh Vidyanagar Gujarat | | | |
| 1.1/4" (31.75 MM) PITCH 42 TEETH DRIVEN DUPLEX SPROCKET - ASA | | Drawn | KIRAN |
| Material | | Checked | |
| C-45/EN-8 | Treatment | Approved | |
| TEETH SURFACE HARD, TO MIN. 300 BHN. | DRG. NO.- | Date | 23/07/18 |
| | RS-4014-C-1.1/4"-D-42 | Scale | N.T.S. |



TOOTH PROFILE SUITABLE
TO ROL-K080 CHAIN 100-2
ASA/DIN 8188

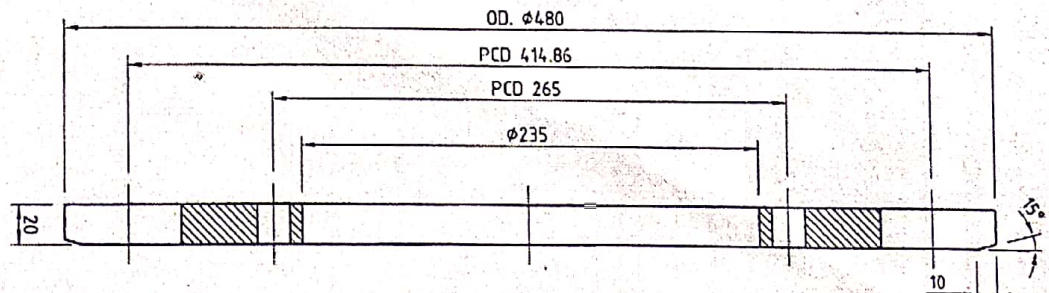
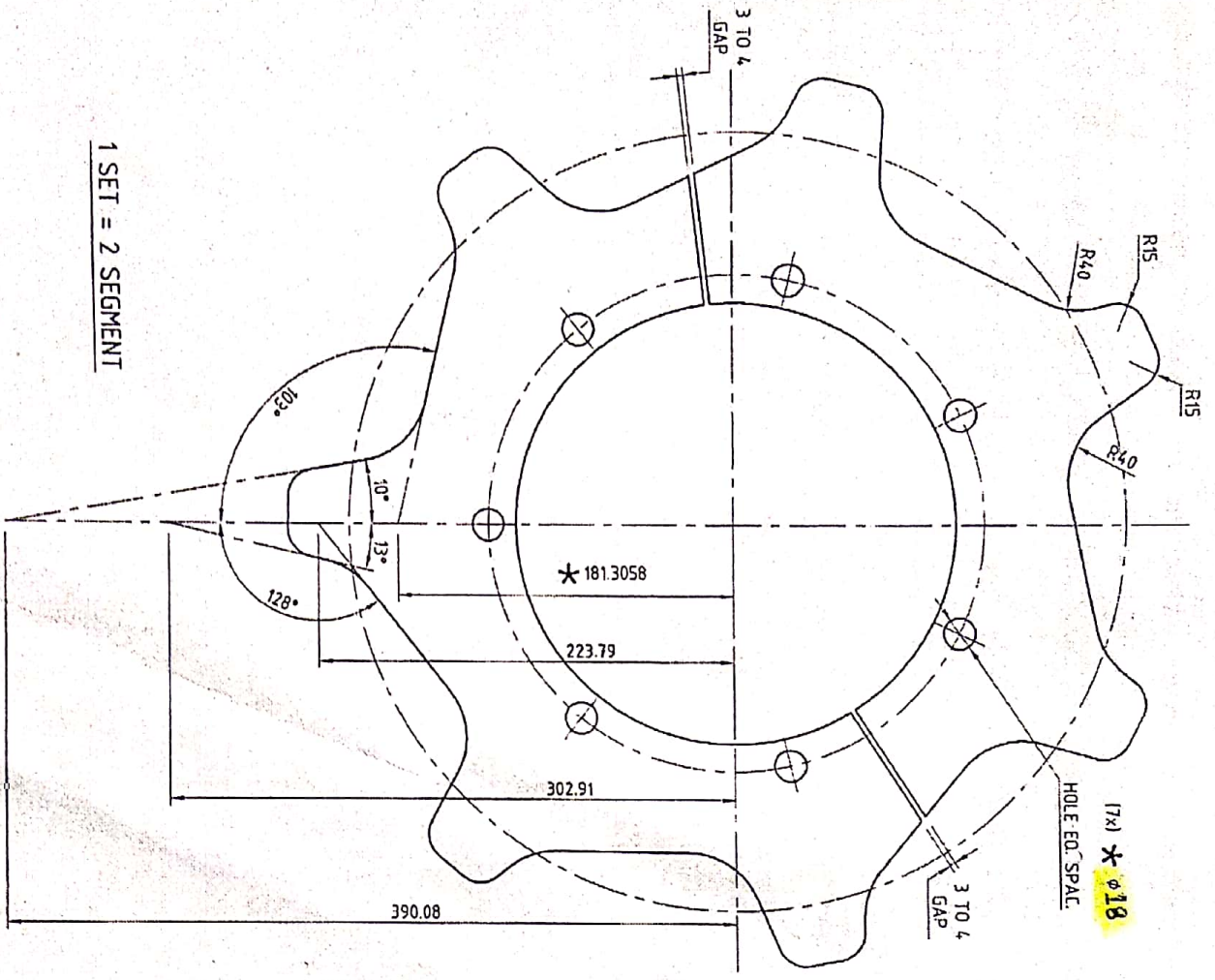
| | |
|--|------------|
| | Staff |
| | Asst. Mgr. |
| | HOD |

REF : KEP.PLA.SER.ENG.CO.LTD., (ASA/DIN 8188)

ROLCON ENGINEERING CO. LTD.
(SPROCKET DIVISION)
Vallabh Vidyanagar
Gujarat

| | | |
|-----------|---|-----------------------|
| Material | Treatment | DRG. NO.- |
| C-45/EN-8 | TEETH SURFACE HARD. TO MIN. 300 BHN. | RS-4013-C-1.1/4"-D-19 |

| | | |
|---|----------|----------|
| 1.1/4" (31.75 MM) PITCH 19 TEETH DRIVE DUPLEX SPROCKET - ASA | Drawn | KIRAN |
| | Checked | |
| | Approved | |
| | Date | 23/07/18 |
| | Scale | N.T.S. |



| | | |
|--------------------|--------------------|--------------------|
| Staff | Asst. Mgr. | HOD |
| <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |

REF. : KEP, PLASER, ENG. CO. LTD. (SKETCH)

ROLCON ENGINEERING CO. LTD.
(SPROCKET DIVISION)
Vallabh, Vidyanagar
Gujarat

180 MM PITCH 7 TEETH
FORKEY RIM TYPE SPROCKET

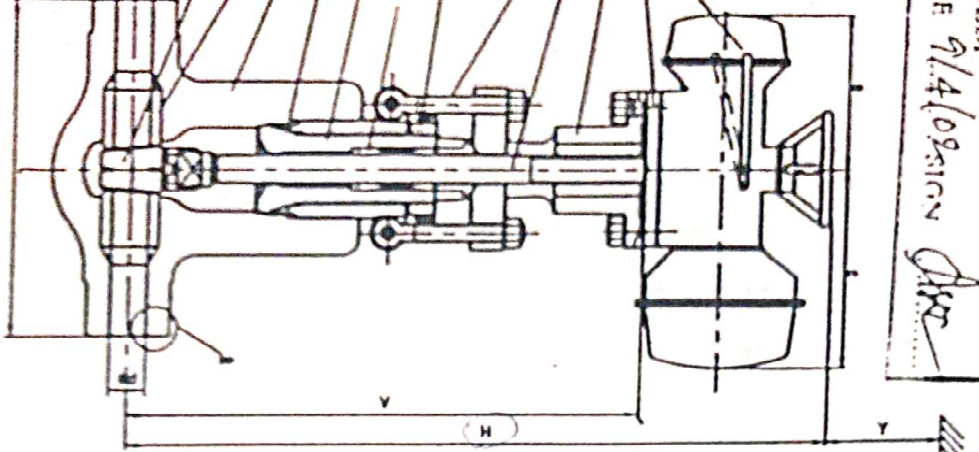
| | | |
|----------|--|-------------------|
| Material | Treatment | DRG. NO. - |
| EN-19 | TEETH SURFACE HARD. TO MIN. 45 HRC. | RS-4015-C-180-S-7 |
| Drawn | Checked | Scale |
| KIRAN | <i>[Signature]</i> | N.T.S. |
| Date | Approved | |
| 23/07/18 | <i>[Signature]</i> | |

SH/D/Design

OM Power Parts Ltd.
DESIGN DIVISION

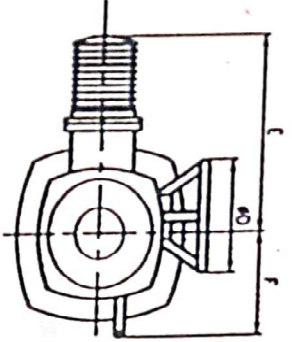
IMPROVED
EFFECT OF TERMINAL
ENSION ONLY SUBJECT TO
IFICATION AS MARKED

ED.
E 9/4/09 sign *Ar*



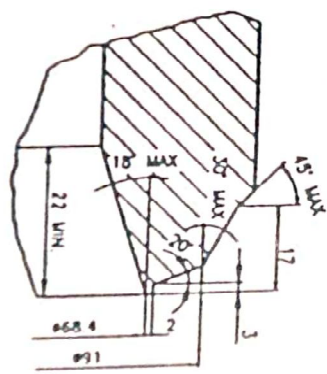
| QA S.No. | S.No. | SIZE (MM) | QTY / UNIT | UNIT | TAG NUMBERS |
|----------|-------|-----------|------------|------|-------------|
| 15 | 15 | 60 | 1 | No.1 | 1HANJ0A101 |
| | | | | No.2 | 2HANJ0A1101 |

WORKING PR:- 162 Bar, WORKING TEMP:- 200C



DESIGN STANDARD: AISI B16.33
RAING: CLASS 1500 AS PER AISI B16.33
ORIPAL LENGTH: SHORT PATTERN AS PER AISI B16.33
ENDS: BUTT WELDED AS PER AISI B16.25
TESTING STANDARD: AISI B16.33

DETAIL-D



ASME -B16.25 -FIG.5a
(PIPE SIZE: Ø88.9x11.13)

| ITEM NO. | COMPONENT | MA |
|----------|----------------|------|
| 01 | BODY | ASTM |
| 02 | BONNET | ASTM |
| 03 | DISK | ASTM |
| 04 | SEARING | ASTM |
| 05 | STEM | ASTM |
| 06 | RETAINING RING | ASTM |
| 18 | YOKE | ASTM |
| 26 | EYEBOLT | ASTM |
| 26000 | NUT | ASTM |
| 29 | GASKET | SO |
| 30 | PACKING | GR |
| 48 | BOLT | AS |
| 50 | ACTUATOR | RE |

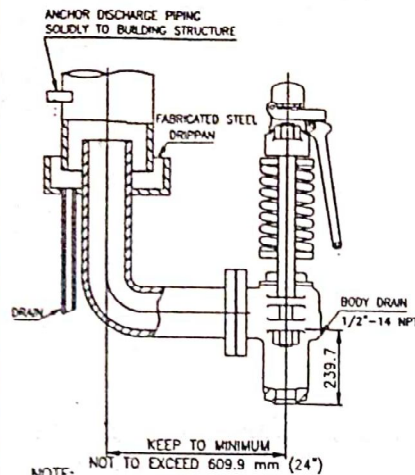
HYDRAULIC TEST

FOR SHELL : 391.0 N
FOR SEAT : 182.0 N
(W.P. 1)

| Q06 | 10/75 | 885 | 840 | 245 | 282 | 450 | 240 | 600 |
|--|---|--|---|--|---|--------------------------------|-------------------|-----|
| Q05 <td>885 <td>600 <td>840 <td>245 <td>282 <td>450 <td>210 <td>500 </td></td></td></td></td></td></td></td> | 885 <td>600 <td>840 <td>245 <td>282 <td>450 <td>210 <td>500 </td></td></td></td></td></td></td> | 600 <td>840 <td>245 <td>282 <td>450 <td>210 <td>500 </td></td></td></td></td></td> | 840 <td>245 <td>282 <td>450 <td>210 <td>500 </td></td></td></td></td> | 245 <td>282 <td>450 <td>210 <td>500 </td></td></td></td> | 282 <td>450 <td>210 <td>500 </td></td></td> | 450 <td>210 <td>500 </td></td> | 210 <td>500 </td> | 500 |
| | N | V | NO | B | 0 | E | F | Y |

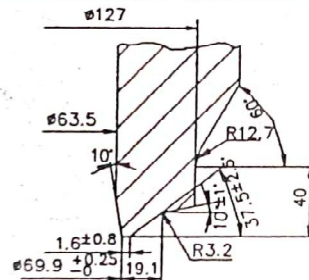
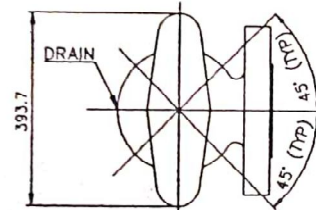
BHARAT HEAVY ELECTRICALS LTD.
 UNIT: HEAVY ELECTRICALS
 P.O. BOX NO. 131
 BHARAT HEAVY ELECTRICALS LTD.
 GATEWAY INDUSTRIAL AREA
 RAJIV GANDHI SQUARE
 CHENNAI - 600 020
 TEL: 044-26101111
 FAX: 044-26101111
 E-MAIL: info@bhel.com
 WEBSITE: www.bhel.com

CONTRACT NO. 9/442

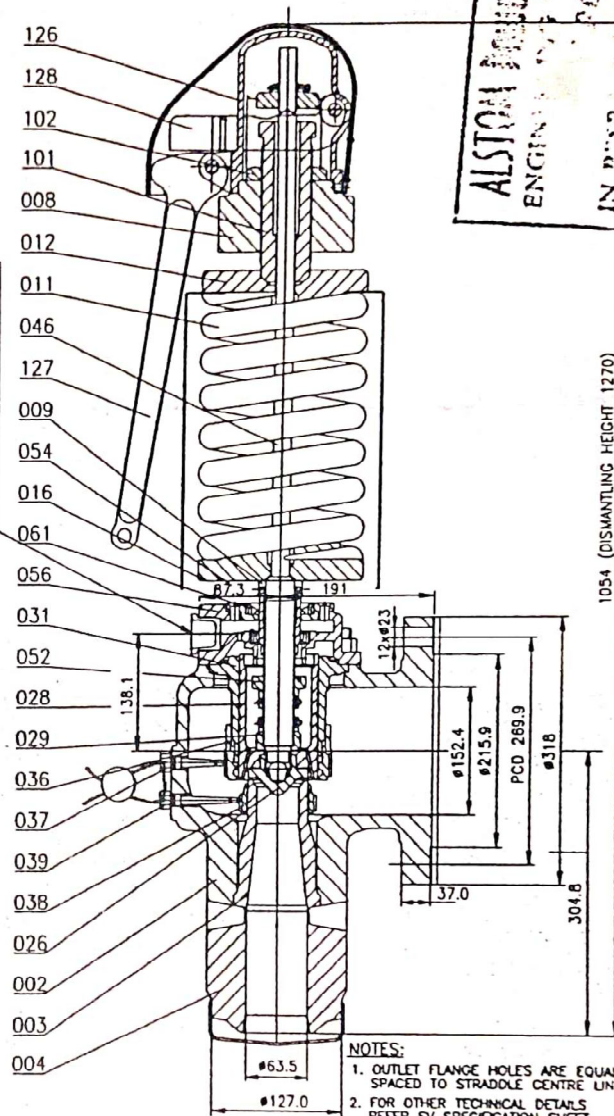


NOTE: APPROPRIATE CONSIDERATIONS SHOULD BE MADE FOR DRAINING ANY CONDENSATE WHICH MAY ACCUMULATE IN THE COVER PLATE VENT PIPING.

CAP AND LEVER MAY BE ROTATED HORIZONTALLY 45 DEGREES TO EITHER SIDE OF CENTER LINE



1.5" NPT PIPE TO SAFE LOCATION



NOTES:
1. OUTLET FLANGE HOLES ARE EQUALLY SPACED TO STRADDLE CENTRE LINE.
2. FOR OTHER TECHNICAL DETAILS REFER SV SPECIFICATION SHEET.

ALSTOM BHEL BO
ENGINEERING MECH
IN P...
DATE 28/3/07

| COMP NO. | PARTS | MATERIALS | COMP NO. | PARTS | MATERIALS |
|----------|---------------------|-----------------|----------|--------------------|---------------------|
| 002 | BASE | ALLOY STEEL | 038 | LOWER ADJ RING | STAINLESS STEEL |
| 003 | SEAT BUSHING | STAINLESS STEEL | 039 | LOWER ADJ RING PIN | STAINLESS STEEL |
| 004 | INLET WECK | ALLOY STEEL | 046 | SPINDLE | STAINLESS STEEL |
| 008 | YOKE | CARBON STEEL | 052 | LIFT STOP | STAINLESS STEEL |
| 009 | YOKE ROD | ALLOY STEEL | 054 | OVERLAP COLLAR | STAINLESS STEEL |
| 011 | SPRING | ALLOY ST. | 056 | COVER PLATE | ALLOY STEEL |
| 012 | TOP SPG WSHR ASSY | CARBON STEEL | 061 | TOP PLATE | ALLOY STEEL |
| 016 | BOTTOM SPG WSHR | CARBON STEEL | 101 | SPRING ADJUSTER | COPPER NICKEL ALLOY |
| 026 | DISC | STAINLESS STEEL | 102 | SPG ADJ LOCK NUT | COPPER NICKEL ALLOY |
| 028 | DISC HOLDER | MONEL ALLOY 505 | 128 | CAP | CARBON STEEL |
| 029 | DISC COLLAR | STAINLESS STEEL | 127 | DROP LEVER | CARBON STEEL |
| 031 | GUIDE | MONEL ALLOY 505 | 128 | TOP LEVER | CARBON STEEL |
| 036 | UPPER ADJ. RING | STAINLESS STEEL | | | |
| 037 | UPPER ADJ. RING PIN | STAINLESS STEEL | | | |

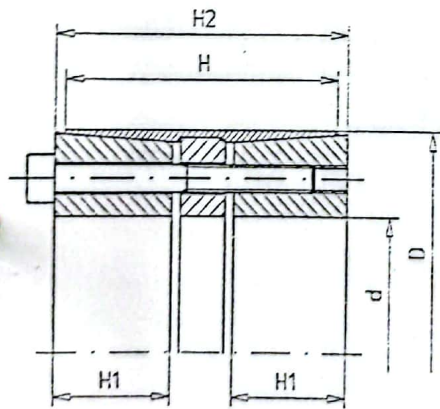
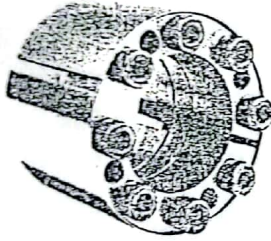
| | |
|--------------|-----------------------------|
| ORIFICE | 3 |
| AREA | 16.41 sq.cm. |
| LIFT | 11.43 mm. |
| APP. WEIGHT | 200 kg. |
| INLET | 2.5"-2500# BUTT WELDED |
| OUTLET | 6"-300# ANSI B16.5, RF SWF. |
| SPECIALITIES | NIL |

Spannsatz - Type 7000

Sehr hoch belastbare Typenreihe, vergleichbar der Type 4000, aber für einen kleineren Durchmesserbereich und für geringere Einbaulänge besonders geeignet. Die Durchmesserabstufungen sind gleich.

Diese Spannsätze sind selbstzentrierend und selbsthemmend mit sehr guten Rund- und Planlaufeigenschaften auch gegenüber resultierenden Momenten. Wegen der sehr kleinen Kegelwinkel sind die Spannwege entsprechend groß. Der innere Spannring benötigt zum Entspannen einen größeren Freiraum nach Tabelle Seite 20.

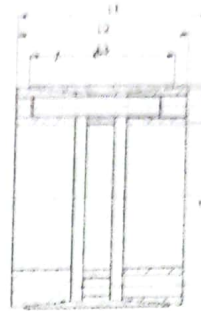
| d x D mm | H mm | H ₁ mm | H ₂ mm | Anzahl Z | Schrauben DIN 912-12.9 | M _s Nm | M _i Nm | F _{ax} kN | P _N N/mm ² |
|-------------|---------|----------------------|----------------------|-------------|---------------------------|----------------------|----------------------|-----------------------|-------------------------------------|
| 20 x 47 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 612 | 61,2 | 84 |
| 22 x 47 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 673 | 61,2 | 84 |
| 24 x 50 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 734 | 61,2 | 79 |
| 25 x 50 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 765 | 61,2 | 79 |
| 28 x 55 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 1142 | 81,6 | 96 |
| 30 x 55 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 1224 | 81,6 | 96 |
| 35 x 60 | 41 | 19,5 | 45 | 8 | M 6 | 17 | 1428 | 81,6 | 88 |
| 38 x 65 | 41 | 19,5 | 45 | 10 | M 6 | 17 | 1938 | 102,0 | 102 |
| 40 x 65 | 41 | 19,5 | 45 | 10 | M 6 | 17 | 2040 | 102,0 | 102 |
| 45 x 75 | 41 | 19,5 | 45 | 8 | M 8 | 41 | 3396 | 150,9 | 130 |
| 50 x 80 | 58 | 23 | 62 | 8 | M 8 | 41 | 3774 | 150,9 | 81 |
| 55 x 85 | 58 | 23 | 62 | 8 | M 8 | 41 | 4151 | 150,9 | 76 |
| 60 x 90 | 58 | 23 | 62 | 10 | M 8 | 41 | 5660 | 188,7 | 90 |
| 65 x 95 | 58 | 23 | 62 | 10 | M 8 | 41 | 6132 | 188,7 | 85 |
| 70 x 110 | 70 | 28 | 76 | 10 | M 10 | 83 | 10892 | 311,2 | 99 |
| 75 x 115 | 70 | 28 | 76 | 10 | M 10 | 83 | 11670 | 311,2 | 94 |
| 80 x 120 | 70 | 28 | 76 | 12 | M 10 | 83 | 14937 | 373,4 | 109 |
| 85 x 125 | 70 | 28 | 76 | 12 | M 10 | 83 | 15871 | 373,4 | 104 |
| 90 x 130 | 70 | 28 | 76 | 12 | M 10 | 83 | 16804 | 373,4 | 100 |
| 95 x 135 | 70 | 28 | 76 | 12 | M 10 | 83 | 17738 | 373,4 | 97 |
| 100 x 145 | 92 | 35 | 98 | 12 | M 12 | 145 | 27592 | 551,8 | 110 |
| 110 x 155 | 92 | 35 | 98 | 12 | M 12 | 145 | 30351 | 551,8 | 103 |
| 120 x 165 | 92 | 35 | 98 | 14 | M 12 | 145 | 38629 | 643,8 | 113 |
| 130 x 180 | 108 | 41 | 114 | 12 | M 14 | 230 | 48139 | 740,6 | 101 |
| 140 x 190 | 108 | 41 | 114 | 14 | M 14 | 230 | 60482 | 864,0 | 112 |
| 150 x 200 | 108 | 41 | 114 | 15 | M 14 | 230 | 74060 | 987,5 | 121 |
| 160 x 210 | 108 | 41 | 114 | 16 | M 14 | 230 | 78997 | 987,5 | 115 |
| 170 x 225 | 136 | 52 | 146 | 14 | M 16 | 355 | 100806 | 1185,9 | 103 |
| 180 x 235 | 136 | 52 | 146 | 15 | M 16 | 355 | 121983 | 1355,4 | 112 |
| 190 x 250 | 136 | 52 | 146 | 16 | M 16 | 355 | 128760 | 1355,4 | 106 |
| 200 x 260 | 136 | 52 | 146 | 16 | M 16 | 355 | 135537 | 1355,4 | 102 |



Spannsatz
 Locking Assembly

Abmessungen / Dimensions

- OD - Außendurchmesser / Outside diameter
- Ød - Bohrungsdurchmesser / Bore diameter
- L1 - Gesamtlänge / Overall length
- L2 - Grundabmessung / Reference dimension
- L3 - Grundabmessung / Reference dimension
- S - Spannschrauben / Clamping screw size



Technische Daten / Technical Data

- TKN - Drehmoment / Max. transmitted torque
- PW - Flächenpressung Welle / Surface pressure shaft
- PN - Flächenpressung Nabe / Surface pressure hub
- SA - Anzahl der Spannschrauben / # of screws
- TA - Anziehmoment Spannschraube / Installation torque per screw
- M - Masse / Weight

Bestellbeispiel / Ordering Example:

| | | | |
|------------|----|---|----|
| WSR 240 | 65 | x | 95 |
| Typ / Type | Ød | | ØD |

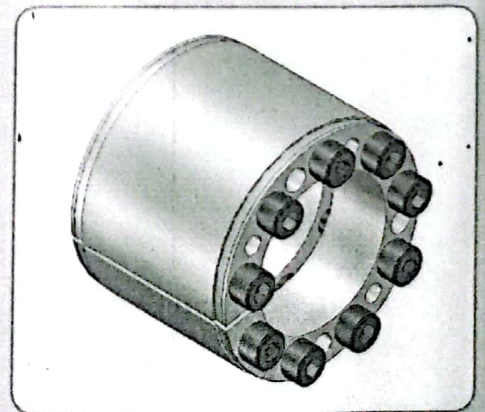
| Typ / Type | TKN | Abmessungen / Dimensions | | | Flächenpressung / Surface Pressure | | Spannschrauben / Locking Screws ISO 4762 | | | |
|------------|--------|--------------------------|-----|-----|------------------------------------|----------------|---|----|-----|------|
| | | L1 | L2 | L3 | P ₁ | P ₂ | S | SA | TA | M |
| WSR 240 | Nm | | | | N/mm² | | | | mm | kg |
| Ød | | | | | | | | | | |
| 25x55 | 800 | 46 | 40 | 32 | 314 | 107 | M6 | 6 | 18 | 0,5 |
| 28x55 | 895 | 46 | 40 | 32 | 281 | 107 | M6 | 6 | 18 | 0,5 |
| 30x55 | 960 | 46 | 40 | 32 | 262 | 107 | M6 | 6 | 18 | 0,5 |
| 35x80 | 1300 | 60 | 54 | 44 | 185 | 83 | M6 | 7 | 18 | 0,6 |
| 38x65 | 1600 | 62 | 54 | 44 | 165 | 95 | M6 | 7 | 18 | 0,7 |
| 38x75 | 2500 | 62 | 54 | 44 | 308 | 121 | M8 | 7 | 41 | 1 |
| 40x65 | 1680 | 60 | 54 | 44 | 155 | 95 | M6 | 7 | 18 | 1,2 |
| 40x75 | 2700 | 62 | 54 | 44 | 293 | 121 | M8 | 7 | 41 | 1,4 |
| 42x75 | 2800 | 62 | 54 | 44 | 279 | 121 | M8 | 7 | 41 | 1,4 |
| 45x75 | 3100 | 62 | 54 | 44 | 260 | 121 | M8 | 7 | 41 | 1,2 |
| 48x80 | 3800 | 72 | 64 | 56 | 216 | 102 | M8 | 8 | 41 | 1,5 |
| 50x80 | 3900 | 72 | 64 | 56 | 207 | 102 | M8 | 8 | 41 | 1,4 |
| 55x85 | 4800 | 72 | 64 | 56 | 212 | 108 | M8 | 9 | 41 | 1,5 |
| 60x90 | 5800 | 72 | 64 | 56 | 216 | 113 | M8 | 10 | 41 | 1,55 |
| 65x95 | 6300 | 72 | 64 | 56 | 200 | 107 | M8 | 10 | 41 | 1,65 |
| 70x110 | 11000 | 88 | 78 | 70 | 235 | 120 | M10 | 10 | 83 | 3,1 |
| 75x115 | 11800 | 88 | 78 | 70 | 220 | 115 | M10 | 10 | 83 | 3,3 |
| 80x120 | 13800 | 88 | 78 | 70 | 227 | 121 | M10 | 11 | 83 | 3,5 |
| 85x125 | 16000 | 88 | 78 | 70 | 233 | 12 | M10 | 12 | 83 | 3,6 |
| 90x130 | 16900 | 88 | 78 | 70 | 220 | 122 | M10 | 12 | 83 | 3,8 |
| 95x135 | 18000 | 88 | 78 | 70 | 208 | 117 | M10 | 12 | 83 | 4 |
| 100x145 | 25000 | 112 | 100 | 90 | 211 | 113 | M12 | 11 | 145 | 6,1 |
| 110x155 | 30000 | 112 | 100 | 90 | 209 | 115 | M12 | 12 | 145 | 6,6 |
| 120x165 | 38300 | 112 | 100 | 90 | 224 | 127 | M12 | 14 | 145 | 7,1 |
| 130x180 | 48300 | 130 | 116 | 104 | 201 | 117 | M14 | 12 | 230 | 10 |
| 140x190 | 60700 | 130 | 116 | 104 | 217 | 129 | M14 | 14 | 230 | 10,6 |
| 150x200 | 70000 | 130 | 116 | 104 | 217 | 132 | M14 | 15 | 230 | 11,3 |
| 160x210 | 80000 | 130 | 116 | 104 | 217 | 134 | M14 | 16 | 230 | 12 |
| 170x225 | 101000 | 164 | 148 | 134 | 206 | 116 | M16 | 14 | 360 | 11,7 |
| 180x235 | 115000 | 164 | 148 | 134 | 208 | 119 | M16 | 15 | 360 | 18,5 |
| 190x250 | 129000 | 164 | 148 | 134 | 210 | 119 | M16 | 16 | 360 | 21,4 |
| 200x260 | 136000 | 164 | 148 | 134 | 200 | 115 | M16 | 16 | 360 | 22,4 |
| 220x285 | 168000 | 164 | 148 | 134 | 204 | 118 | M16 | 18 | 360 | 26,6 |
| 240x305 | 195000 | 164 | 148 | 134 | 182 | 131 | M16 | 20 | 360 | 28,7 |

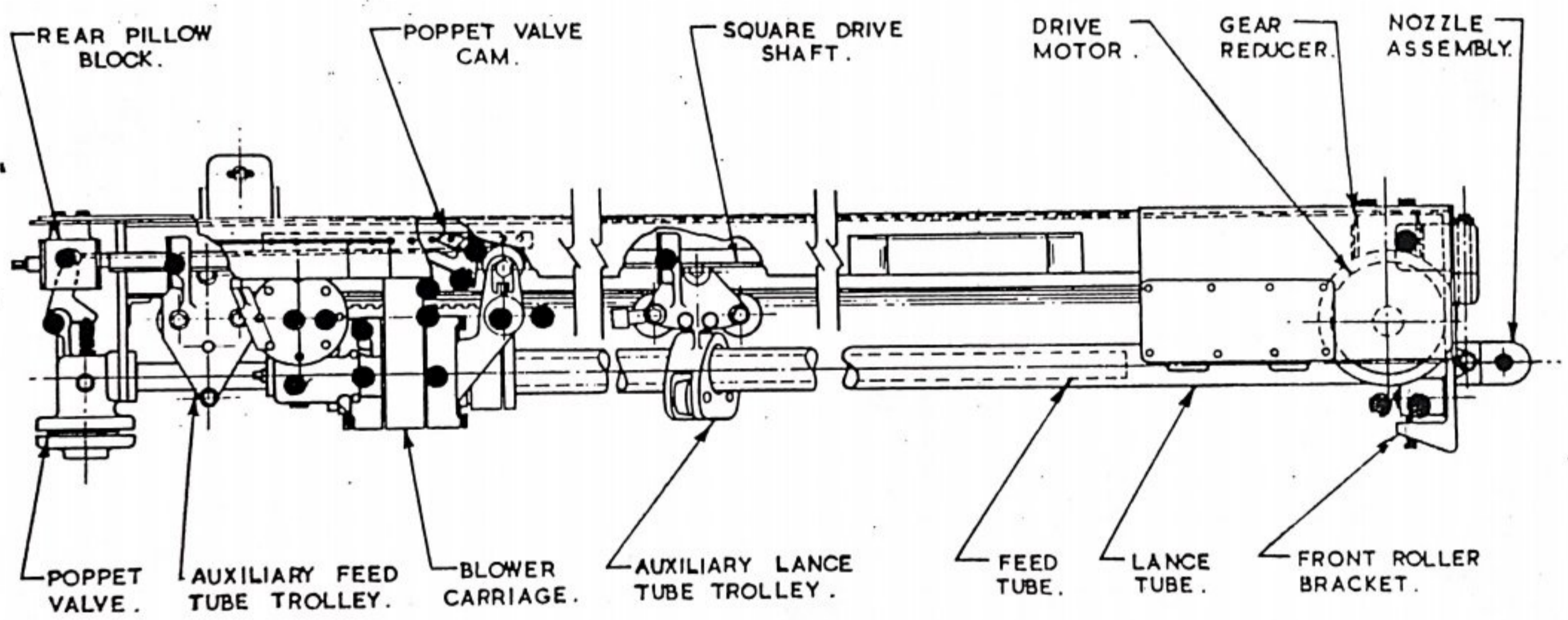
Eigenschaften / Optionen:

- Material: Stahl
- die Wellentoleranz sollte innerhalb der Passungstoleranz g6 oder h7 liegen
- Sonderausführung in Edelstahl wahlweise
- leichte Montage
- einfache Demontage
- große Dauerdrehwechselfestigkeit
- spielfrei
- wartungsfrei
- selbstzentrierend
- geeignet für höchste Biege- und Drehmomente
- vorderer und hinterer Druckring werden separat mittels der Abdruckgewinde gelöst

Characteristics / Options:

- Material: steel
- shaft tolerance should be within the fitting tolerance g6 or h7
- special design in stainless steel optional
- easy mounting
- easy demounting
- large constant reverse-torsion fatigue strength
- backlash-free
- maintenance-free
- self-centering
- suitable for highest bending moments and torques
- front and back clamping rings get disconnected separate using the pressure-crest threading



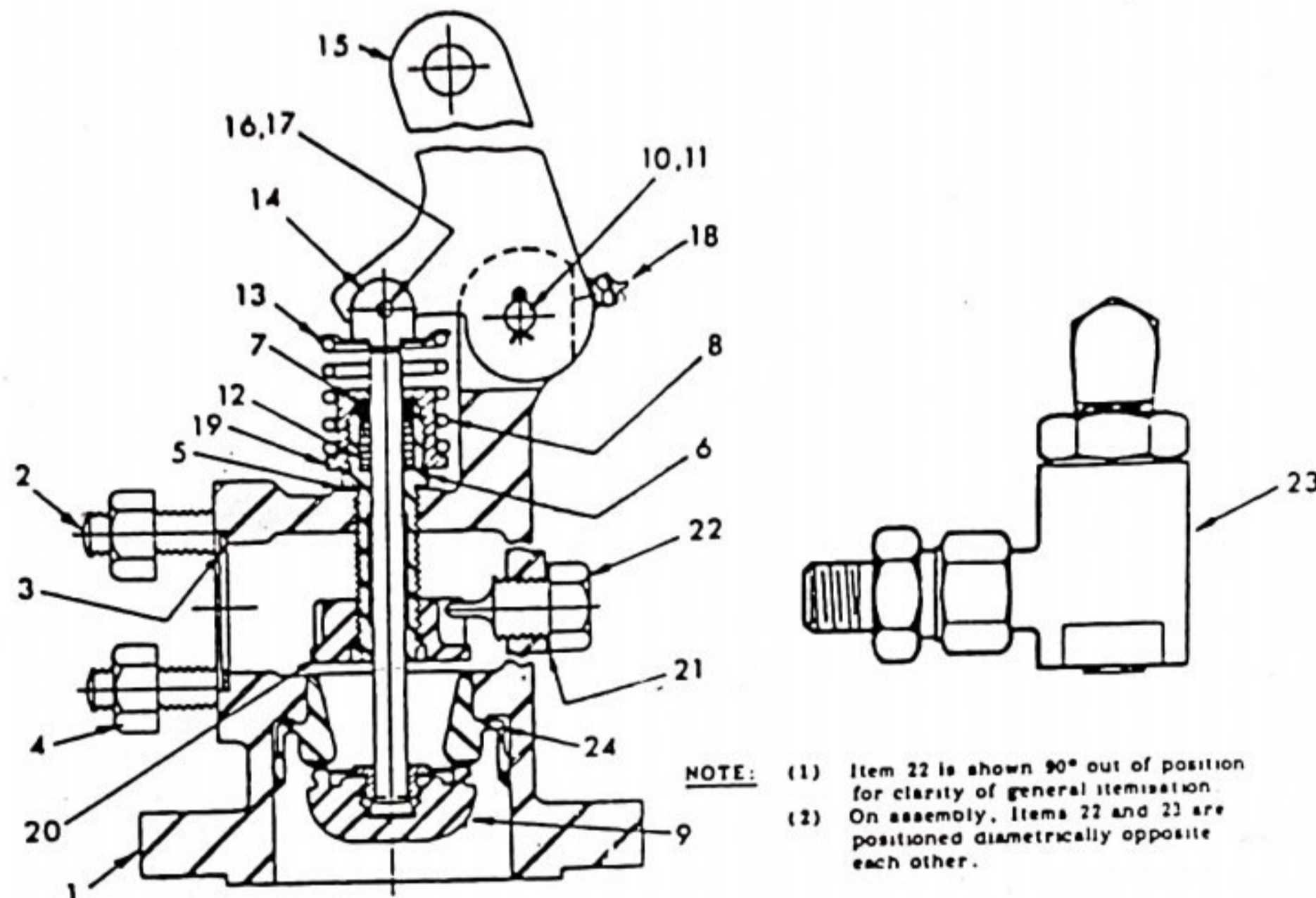


RETRACTABLE BLOWER .

● - MINI - LUBE - 17 LUBRICATION POINTS .

POPPET VALVE ASSEMBLY (60 BAR)

DRG. NO. 393805-1038
PART NO. 393805-1038 (C.S.)



| Item No. | Part No. | Description | No. | Off |
|----------|-------------|------------------------------|-----|-----|
| 1 | 393337-1142 | Valve Body (Cast Steel) - 02 | 1 | 1 |
| 2 | 305590-0116 | Stud 40 | 4 | 4 |
| 3 | 304634-0117 | Gasket 15 | 1 | 1 |
| 4 | 101237-6115 | Nut 40 | 4 | 4 |
| 5 | 301167-0118 | Valve Guide Washer 15 | 1 | 1 |
| 6 | 302031-0110 | Valve Stem Guide 15 | 1 | 1 |
| 7 | 302027-0116 | Packing Washer 15 | 1 | 1 |
| 8 | 302051-0115 | Valve Spring 15 | 1 | 1 |
| 9 | 309964-2021 | Valve Stem and Disc 15 | 1 | 1 |
| 10 | 301158-0119 | Trigger Pin 05 | 1 | 1 |
| 11 | 863603-1934 | Cotter Pin 05 | 1 | 1 |
| 12 | 302034-0117 | Valve Stem Packing 15 | 1 | 1 |
| 13 | 301808-0113 | Valve Spring Retainer 15 | 1 | 1 |
| 14 | 301142-0118 | Valve Yoke 15 | 1 | 1 |
| 15 | 309183-0129 | Trigger 05 | 1 | 1 |
| 16 | 301235-0116 | Valve Yoke Pin 15 | 1 | 1 |
| 17 | 863603-1716 | Cotter Pin 15 | 1 | 1 |
| 18 | 906902-0003 | Lubrication Fitting 15 | 1 | 1 |
| 19 | 302032-0119 | Packing Nut 19 | 1 | 1 |
| 20 | 394197-1123 | Pressure Control Disc 05 | 1 | 1 |
| 21 | 930711-9034 | Lock Pin Washer 15 | 1 | 1 |
| 22 | 393802-1122 | Lock Pin 15 | 1 | 1 |
| 23 | 394314- | Air Relief Valve Assembly 15 | 1 | 1 |
| ** 24 | 310666-1121 | Flexible Valve Seat 15 | 1 | 1 |

** Oversize valve seat, Part Number 310666-2129 ; supplied for service replacement.

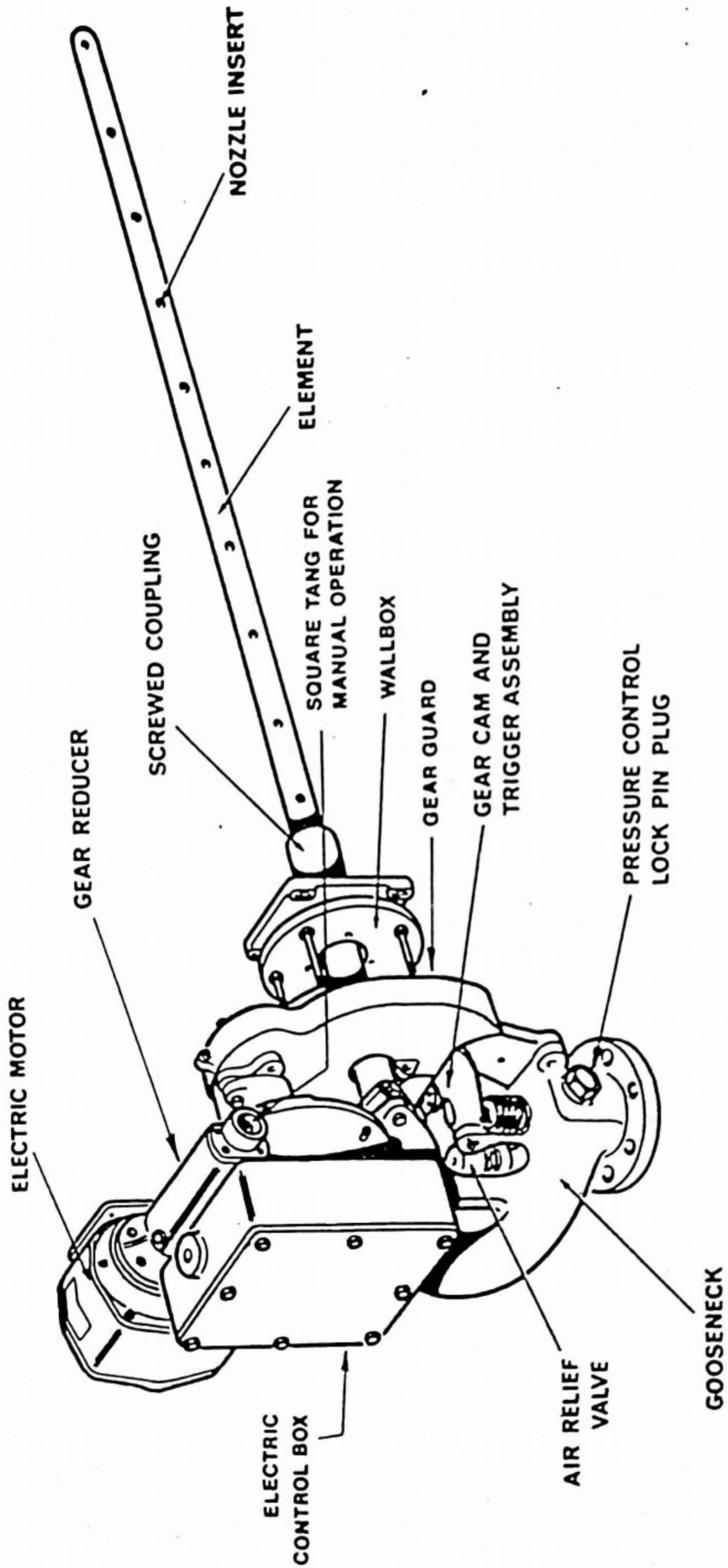
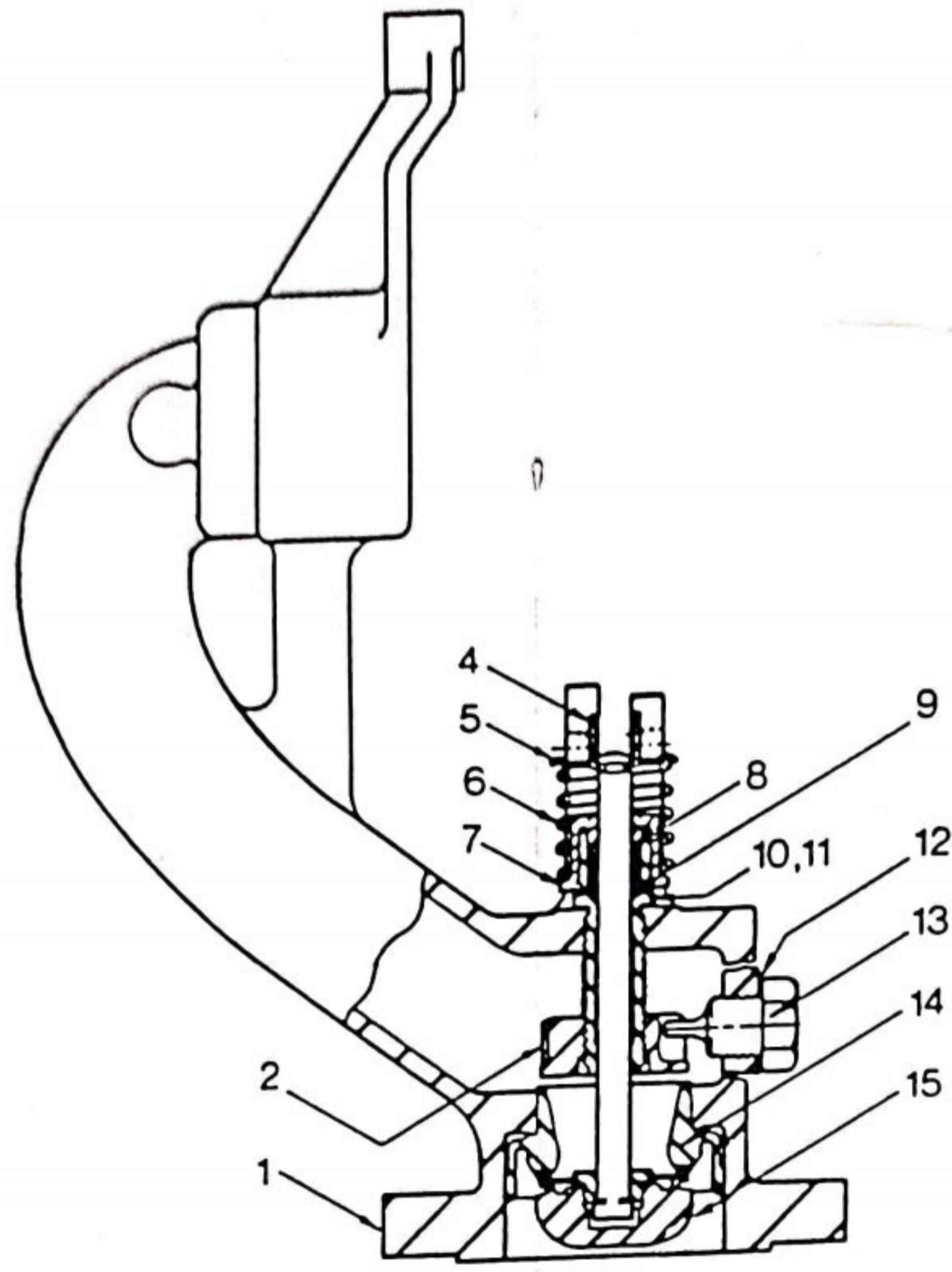


FIG. 1 ROTARY SOOTBLOWER - OVERALL VIEW

GOOSENECK ASSEMBLY (60 Bar)

DRG. NO. 395916-0049
PART NO.



| Item No. | Part No. | Description | No. Off |
|----------|-------------|-----------------------|---------|
| *1 | | Gooseneck | 1 |
| 2 | 394197-1123 | Pressure Control Disc | 1 |
| 4 | 301142-0118 | Valve Yoke | 1 |
| 5 | 301808-0113 | Valve Spring Retainer | 1 |
| 6 | 302051-0115 | Valve Spring | 1 |
| 7 | 302032-0119 | Packing Nut | 1 |
| 8 | 302027-0116 | Packing Washer | 1 |
| 9 | 302034-0117 | Valve Stem Packing | 1 |
| 10 | 302031-0110 | Valve Stem Guide | 1 |
| 11 | 301167-0118 | Valve Guide Washer | 1 |
| 12 | 930711-9034 | Lock Pin Washer | 1 |
| 13 | 393802-1122 | Lock Pin Plug | 1 |
| **14 | 310666-1121 | Flexible Valve Seat | 1 |
| 15 | 309964-2021 | Valve Stem and Disc | 1 |

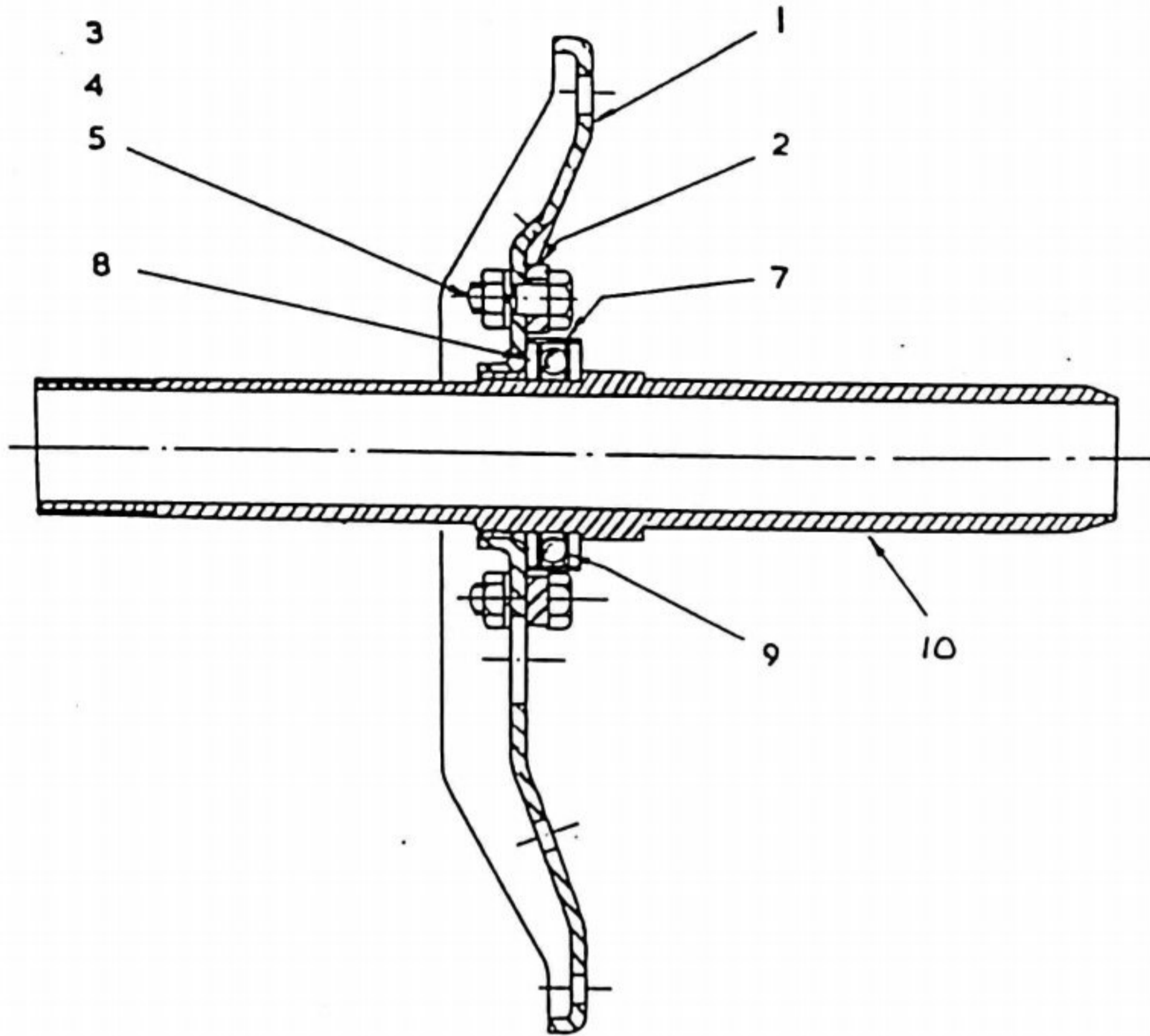
1370090

* Supplied only as a sub-assembly, Part Number 395916- comprising Items 1, 2, 10, 11, 12, 13, and 14.

** Oversize valve seats, Part Number 310666-2129, are recommended as service replacements.

SWIVEL TUBE & BRACKET ASSLY.
~~BRACKET AND PLATE ASSEMBLY~~
 (One Piece Swivel Tube)

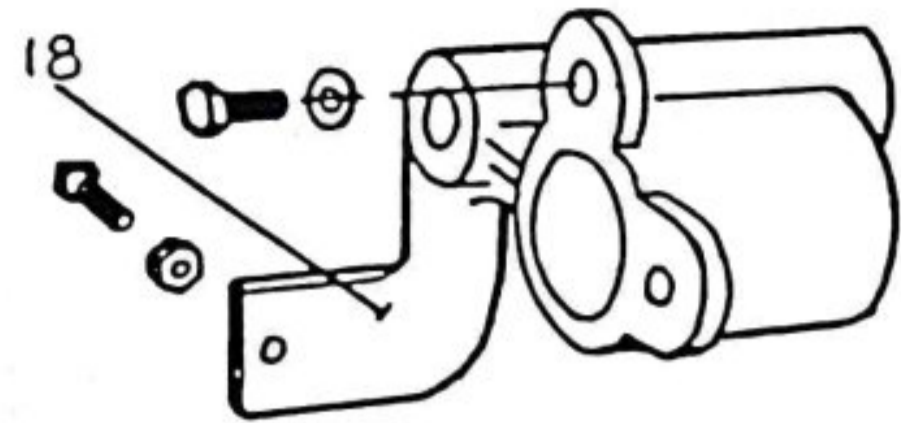
DRG. NO. 391151-1032
 PART NO.



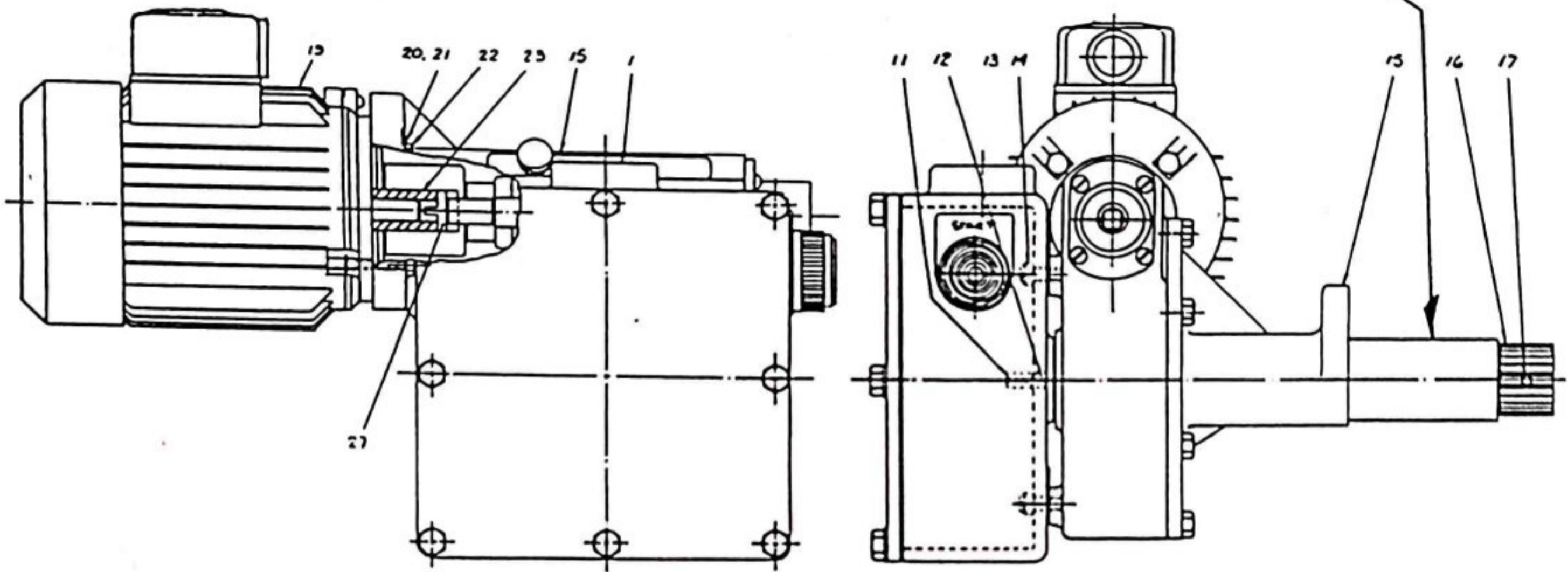
| Item No. | Part No. | Description | No. Off |
|----------|-------------|----------------------------|--|
| 1 | | Bracket and Bushing Arrg't | 1 |
| 2 | | Adaptor Plate | 1 |
| 3 | 865005-2734 | Cap Screw | 3 |
| 4 | 863015-2900 | Nut | 3 |
| 5 | 869016-2900 | Lockwasher | 3 |
| 7 | 302069-0115 | Dust Shield Ring | 1 |
| 8 | 301209-0118 | Thrust Washer | 2 |
| 9 | 301213-1011 | Thrust Ball Bearing Arrg't | 1 |
| 10 | | Swivel Tube | 1 1370105 |

ELECTRIC MOTOR DRIVE ASSEMBLY

DRG. NO. 392744-1042
PART NO.



Item 18 Fitted onto Gear Reducer Shaft.



| Item No. | Part No. | Description | No. Off |
|----------|-------------|-------------------------------|---------|
| 1 | | Electric Control Box Assembly | 1 |
| 11 | 302126-0116 | Pinion - 3 Teeth | 1 |
| 12 | 863651-1918 | Roll Pin | 1 |
| 13 | 865602-2520 | Screw | 3 |
| 14 | 841413-0001 | Nylite Seal | 3 |
| 15 | | Gear Reducer Assembly | 1 |
| 16 | 301238-0113 | Pinion 6 Teeth | 1 |
| 17 | 863631-2224 | Pin | 1 |
| 18 | 302147-1010 | Drive Bracket Assembly | 1 |
| 19 | | Motor | 1 |
| 20 | 879007-3200 | Washer | 4 |
| 21 | 879017-3200 | Lockwasher | 4 |
| 22 | 875648-3220 | Bolt | 4 |
| 23 | 395361-1021 | Coupling | 1 |
| 27 | 395078-1124 | Drive Key | 1 |

