



429-002/A

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

PHONE :2577629
GRAMS : BHARATELEC
FAX NO: 2520719
E-mail: srchandran@bheltry.co.in
Web:

Page
1/1

	Enquiry No 2661400537 - 55	Enquiry Date 07.08.2014	Due Date for Quotation 03.09.2014
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	TRAVEL MECHANISM ASSEMBLY FOR SLIDING DOOR. VENDOR QUALIFYING CRITERIA AND TECHNICAL SPECIFICATION FOR TRAVEL MECHANISM ASSEMBLY FOR SLIDING DOOR ARE ENCLOSED AS PER ANNEXURE-I ENCLOSURES: (1) VENDOR QUALIFYING CRITERIA AND TECHNICAL SPECIFICATION FOR SLIDING DOOR DRIVE MECHANISM AS PER ANNEXURE-I. (2) DRAWING NO: M and S-PD-14-086 (3) DRAWING NO: M and S-PD-12-263 (4) DRAWING NO: M and S-PD-14-085 (5) DRAWING NO: 3M20C1115247 (6) DRAWING NO: 3M02R0011993	SET	1.000	1.00	31.10.14

General Note:

GENERAL NOTE: PLEASE SUBMIT YOUR OFFER IN "TWO PART BID SYSTEM" AS PER THE ANNEXURES ENCLOSED.

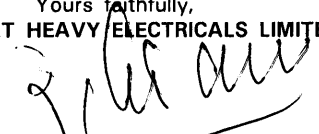
ENCLOSURES:ANNEXURE I,II,IV,V,VI,VII&DRAWING.

Enclosures:

"LD clause has to be confirmed without fail."

"Payment to vendors will be made only thro E-Payment mode"

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening.Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,

ANNEXURE-I
 SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR

S.no.	PARTICULARS	VENDORS'S RESPONSE
1.0	<p>Only those bidder/vendor (OEM), who have supplied and commissioned atleast ONE set of class-2 crane with minimum crane self weight of 65T and frequency converter drives or higher and such crane is presently working satisfactorily for more than one year after commissioning (on the date of opening of tender), should quote. However, if such crane has been supplied to BHEL, then it should be presently working satisfactorily for more than six months after its commissioning and acceptance (on the date of opening of tender) in BHEL. Performance Certificate from the customers (minimum 1) regarding satisfactory performance of such mechanism supplied to them in attached format should be enclosed along with technical offer.</p>	
2.0	<p>BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.</p>	
3.0	<p>The bidding FIRM should have 'in-house' or 'self-owned' facility for fabrication and testing at 125% of the rated capacity.</p>	
4.0	<p>The vendor should have minimum 10 years experience in design, fabrication and supply of cranes.</p>	

SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR

TECHNICAL SPECIFICATIONS OF TRAVEL MECHANISM ASSEMBLY FOR SLIDING DOOR

This system is intended to close and open the door of X-ray room.
The specification includes drive system for travel mechanism and wheel bogies.

SCOPE OF SUPPLY

1. Travel mechanism assembly consisting of Drive bogie with motor, gearbox, Brake unit and floating shaft – 1 no.
2. Idler bogie --- 2 nos.
3. Drive bogie only with flange coupling on one wheel with out mechanism --- 1 no.
4. Electrical control panels, Main Switch and accessories for complete wiring - 1 set.

S.No	PARTICULARS AND BHEL SPECIFICATION	BIDDER'S OFFER (with Technical Details)
1.0	Design, manufacture, supply, commissioning and prove-out of travel mechanism assembly.	
2.0	Door travel mechanism components (Bogie & mechanism) shall be Suitable for Sliding door with self weight of 65 Tons	i)As per BHEL sketch M&S-PD-14-086 ii)As per BHEL sketch M&S-PD-14-085 iii)As per BHEL sketch 3M20C1115247 iv)As per BHEL sketch M&S-PD-12-263
3.0	Weight of Sliding door	65 Ton
4.0	DUTY CLASS	Class II
5.0	SPEED	Operating /Working speed [Maximum]
5.1	Travel (LT)	12 Mtrs /min
6.0	CONTROL	Pendant operation
6.1	Type of control	Master control
6.2	Control voltage	110V AC
6.3	Input power supply	415 +10% Volts , 50Hz,3 phase -AC
6.4	Duty class	Indoor Service
7.0	Mechanism Group Classification	M4
8.0	DESIGN STANDARD	IS-807 & 3177 / 1999

ANNEXURE-I
SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR

9.0	Runway Rail size	
10.0	Travel (LT)	CR 80
11.0	Wheel size	
11.1	Travel (LT)	Dia. 400 mm
11.2	Wheel arrangement for travel	Bogie type
11.3	Number of wheels	8 wheels (4 Bogies)
12.0	Gearbox detail	
12.1	Size	VR 650
	12.2	
13.0	Motor detail	
13.1	Type	3 ph. Sq. Cage induction motor, crane and hoist duty, with inverter (VVVF) drive.
13.2	No. of Poles	8 Pole (750 rpm)
13.3	Capacity	18 kW
13.4	Duty class	40% CDF
13.5	No. of starts / hour	150
14.0	CONTROL FEATURES	
14.1	Control system	Frequency converter type for motion
14.2	Operation	Through pendant control
15.0	Special electrical controls	
15.1	Long travel	Control panel shall be designed such that the travel shall work in two speeds, 3 M/Min and 6 M/Min.
16.0	TRAVEL BOGIE STRUCTURAL FABRICATON	
16.1	Raw Material	Only steel plates, tested and certified for quality by reputed inspection authorities, shall be used.
16.2	Welded Joints	No joint is permitted for main frames.
16.3	Welding Electrodes	E 7018 Electrode only shall be used.
17.0	Wheel Assembly	The Wheel Assembly for Travel shall be of LJVE AXLE SYSTEM with L-type bearings as per enclosed BHEL Drawing No. 3-M-02R-0011993 for the wheel Assembly. Dimensions shall be strictly followed as per the drawing.

**ANNEXURE-1
SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR**

18.0	Machining Operation	All mechanical mating surfaces and wheel seating areas are to be machined to the required finish and protected.	
19.0	Surface Cleaning	Bogies shall be cleaned properly, after completion of all operations but prior to painting.	
20.0	Painting	The structural parts are to be painted as follows: a. One coat primer with 25m of DFT (Dry Film Thickness) and 48 hours of compulsory curing after painting. b. Two coats of Enamel Paint (As per IS 5 – 2004 Color ISC 592 International Orange) each with a DFT of 25m and intermittent curing of 16 hours.	
21.0	MECHANICAL ELEMENTS		
21.1	Gears	Gears in all the Stages shall be helical / spur in design and to be of machined and hardened.	
21.2	Gear Box Casing	Shall be of fabricated type and stress relieved by thermal heat-treatment process, prior to machining.	
21.3	Type of Coupling	Only GEARED COUPLING to be used a. Between Electric Motor and Gear Box b. Between Gear Box and Wheels	
21.4	Wheels	The Wheels shall be of forged and Wheel Tread hardened to 300/350 BHN.	
23.0	ELECTRICAL ELEMENTS		
23.1	Operational Controls	The travel mechanism shall be provided with Pendant Push Button Control (Master Control)	
23.2	Control Voltage	110 VOLT A.C	
23.3	Type of Brakes	Travel - Thruster Brake	
23.4	Protection	All Panels and Motors shall be IP 54 protection	
23.5	Electric Motors	Electric Motors shall be as per IS-325 and IS-1231.	
23.6	Electric Contactors	Panels shall have only SIMENS Contactors and shall be suitable for AC3 Duty Class.	
23.7	Contactors Rating	The rating of all Contactors shall be at least 50% higher than the respective electric motor full load current, at the specified duty cycle.	
23.8	Electrical Design	All Electrical Elements shall be so selected, that they	

ANNEXURE-1
SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR

		withstand 25% overloading , at any time of operation.	
23.9	Controller Steps	2-Step Control shall be provided for Travel.	
23.10	Frequency Converter	The VVVF Drive shall be provided with suitable DBR.	
23.11	Cables	All cables, lugs etc., required for wiring shall be supplied by vendor	
24.0	SELECTION OF COMPONENTS	The make of components or Bought-Out-items shall be strictly as per the list given below.	
24.1	Electric Motors	GEC / BHARAT BIJLEE / SIEMENS / KEC	
24.2	Thruster brake Unit	ELECTROMAG / SPEED-O-CONTROL / OMEGA	
24.3.	Contactors	Only SIEMENS make	
24.4	Over-Load-Relay	SIEMENS (THERMAL TYPE)	
24.5	HRC Fuses	ENGLISH ELECTRIC / L & T / SIEMENS	
24.6	Switch fuse unit	ENGLISH ELECTRIC / SIEMENS /GEC	
24.7	Moulded case C.B	SIEMENS / L&T	
24.8	Pneumatic Time Delay	Only BCH make	
24.9	Push - Buttons	SIEMENS /L&T/AIRON	
24.10	Connectors	Only ELMAX make	
24.11	Couplings	WMI / FENNER / ALFEX	
24.12	Bearings	SKF / NBC / ZKL/ TIMKEN	
24.13	Cables	Reputed Makes & ISI Approved	
24.14	VVVF Drives	SIEMENS / L&T / DANFOSS /ABB.	
25.0	DOCUMENTS / DETAILS for APPROVAL	The following documents and details are to be submitted for BHEL approval, prior to taking up the manufacture.	
25.1	Drawings and Documents	a. GA Drawing of the mechanisms. b. Drawings of bogies and connections. c. Sub-Assembly Drawing for Wheels & Gear Boxes d. Calculation for Selection of Electric Motors, Gear Reducers, Brake, Couplings, etc. g. Calculations for bogie and their connections.	
26.0	INSPECTION	The following Schedule of Stage Inspections is to be strictly adhered to, prior to dispatch from the Supplier's works.	

**ANNEXURE-I
SPECIFICATION FOR LT MECHANISM OF SLIDING DOOR**

26.1	STAGE-I	a. Verification of Test Certificate for Raw Materials used for bogies, Gear box Casings, etc. b. Random Testing on the Welds, by physical examination. c. Bogie Frame Fabrication before setting the Mechanisms	
26.2	STAGE-II	a. Bogies with Wheel Assembly and Alignment checking. b. Bogie with bracket and pin, Wheel Alignment, Mechanical Assemblies and Total Alignment. c. Free running of the Mechanisms	
27.0	ERECTION & COMMISSIONING		
27.1	Mechanical Erection	Erection of the travel mechanism will be done by BHEL.	
27.2	Mechanism Commissioning	Commissioning of the travel mechanism, Performance Prove – Out and smooth Functioning of the mechanism (at BHEL Works) shall be the RESPONSIBILITY of the supplier.	
28.0	Documentation - Drawings & Details Shall supply 3 sets and on CD	a. Mechanism Assembly Drawing b. Total Wiring Schematics c. Detailed Wiring Diagrams for Sub-Systems / Panels d. VVVF Drive's Logic Circuits e. Wheel Assembly Drawings f. Gear Box Assembly Drawings g. Coupling Drawing and Details h. specifications/ Ratings of All Bought-Out-Items. i. Warranty / Guarantee Card for all Bought-out-Items.	
29.0	PERFORMANCE GUARANTEE	The Performance of the Travel assembly, mechanism, electrical items and/or the Components / Sub-Assemblies / Bought-out-Items shall be guaranteed for a minimum period of twelve months from the date of performance acceptance at BHEL works.	

CAPITAL PURCHASE
COMMERCIAL TERMS AND CONDITIONS

1.0 QUOTATIONS

The Bidders shall submit the offer in **TWO INNER ENVELOPES** as indicated below which shall be sealed in one outer envelope.

Envelope I This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid & annexure III. This envelope should be clearly marked **'Part I - Technical and commercial bid'**,

indicating Enquiry No., Due Date and Address & Reference of the Bidder.

Envelope II This sealed envelope should contain **price as per Annexure-IV format**. This envelope should be clearly marked **"Part II - Price bid"**, indicating **Enquiry No., Due Date and Address & Reference of the Bidder**.

Both the envelopes (Part I & II) shall be put in one cover (**Envelope III**), duly sealed, superscribing as Part I and Part II of Enquiry No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 hours (IST). Late offers will not be considered.

Tender should not be addressed to any individual's name but only by designation to

**SENIOR MANAGER /PURCHASE/ CP & SP/ MM / MFG
BHARAT HEAVY ELECTRICALS LIMITED
HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620 014
TAMIL NADU**

Tenders should be free from **CORRECTION AND ERASURES**, Corrections if any, must be attested. All Amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in **ENGLISH** and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in **ENGLISH** or otherwise, the offers will not be considered.

2.0 OPENING OF TENDERS

The Part I - Technical & commercial bid alone would be opened on the Tender opening date.

The Part II - Price bid of technically suitable Bidders alone would be opened. The Technically Suitable Bidders would be informed about the tender opening date through e-mail.

Clarifications if any required by BHEL for Technical evaluation **would be sought** from Bidders before opening of Part II - price bid

For any queries clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail <mmcpmfg1@bheltry.co.in >&< chells@bheltry.co.in>

Annexure For Techno Commercial Bid

Check List - to be filled and submitted along with Technical Bid

BHEL Commercial Terms and Conditions for Indigenous Supplies	Vendor's Confirmation / Comments
Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	
Prices shall be quoted item wise only as per the model format enclosed	
Prices shall be quoted on " FIRM PRICE " basis only The prices should be only on F.O.R / Despatching station basis with Packing & Forwarding charges if any. Applicable % of ED & Sales Tax, Freight & Insurance, Installation & Commissioning Charges should be clearly Indicated	
Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer	
Liquidated damages @ '0.5% per week subject to a maximum of 10% of the order value shall be applicable for delay in deliveries For Details Refer Annexure- v	
Following Risk Purchase clause shall be applicable The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases	
Payment term for supply portion: Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials For details Refer Annexure- v	
Erection / commissioning: (if applicable only) Erection / commissioning charges if any has been mentioned in the offer or else confirmation that Erection /commissioning shall be done at free of cost is available in the offer,	
The equipment shall be guaranteed for a period of 12 months from the date of commissioning	
Final inspection and acceptance of equipment will be after installation at BHEL, Trichy	
The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.	
Offers should be submitted only in sealed cover super-scribing clearly the Enquiry reference and due date.	
% of Excise Duty with cess	
% of TAX (CST/VAT) (INGST with FORM-17 or CST with C-FORM)	
Packing & Forwarding Charges (if any in % only)	
Percentage of Freight& transit insurance charges, if any Freight charges from Dispatching station to BHEL, Tiruchirappalli • Supplier should quote for F.O.R-BHEL Trichy Stores.	
As per Commercial terms and conditions, acceptance for participation in Reverse auction (RA). Yes/No to be indicated	
Name of the person for participating reverse auction	
Land Line Number	
Fax Number	
Mobile Number	
E-mail ID	

NOTE:-

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) Your offer should be indicating applicable If any P&F Charges, % of ED, Sales Tax -CST or VAT, Service Tax), Freight, Insurance and Installation and Commissioning Charges etc., as per our Price Format
- c) Your specific acceptance to our Payment terms, LD & Risk Purchase Clause are essential for consideration of your offer. Other wise your offer is liable for rejection.
- d) No row shall be left blank. Please indicate NA, in case the item is "not applicable"

Payment Term (Indigenous)	
If materials are receivable at Stores/Trichy <u>without</u> PBG	Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials.
If materials are receivable at Stores/Trichy <u>with</u> PBG	Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials and against 10% PBG valid for the warranty period.
Any deviation in the above payment term will attract loading as mentioned below. "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.	

Payment through Bank is not preferred. In case of Payment through Bank is opted by Supplier, BHEL prefers documents submission through bank with copy of LR and door delivery of Goods to Site/Stores with Consignee copy attached. In this case Loading will be 3% on the offered value.
Offers of indigenous Suppliers with payment terms as LC/Advance Payment are liable for rejection.

Liquidated Damages / Penalty -
Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.
For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.
Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).

Guarantee / Warranty Period – (if applicable)
Normally No deviation permitted and the deviated offers are liable for rejection.

Ranking-
BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.

Performance Bank Guarantee – (if applicable)
Normally No deviation permitted and the deviated offers are liable for rejection.

NOTE:-

1. If the due date of tender opening happens to be a holiday, the tenders will be opened on the next working day.
2. BHEL reserves the right to go for a reverse auction (RA) instead of opening the submitted sealed bid which will be decided after technical evaluation. Information and general terms and conditions covering RA are given in commercial terms and conditions.
3. Corrigendum if any, with respect to this tender will be hosted only in the website <http://www.bhel.com> or <http://tenders.gov.in>. You are requested to visit the website regularly for updates.

Special Provisions for Micro and Small Enterprises (MSE)

1. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
2. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
3. In case MSE vendor participating in the tender quotes within the price band of L1+15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
4. "MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure -VII where deemed validity of EM II certificate of five Years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

Certificate by Chartered Accountant on letter head

This is to Certify that MIS
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No (Part—II) dtd.....
Category:,....., (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company
as per the latest audited financial year as per MSMED Act 2006 is as follows:

For Manufacturing enterprises: Investment in plant and machinery (i.e original cost
excluding land and building and the items specified by the Ministry of Small Scale Industries vide its
notification No.S.0,1722(E) dated October 6. 2006:

Rs... ..Lacs

2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and
furniture, fittings and other items not directly related to the service rendered Or as may be notified under the
MSMED Act, 2006.

Rs.Lacs

(Strike off whichever is not applicable)

The above investment of Rs Lacs is within permissible limit of
RsLacs forMicro I Small (Strike off which is not applicable)
Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not
applicable) and the date of graduation of such enterprise from its original category is
(dclimmiyyy) which is within the period of 3 years from the date of graduation of such
enterprise from its original category as notified vide S.D. No. 3322(E) dated 01.11.2013
published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

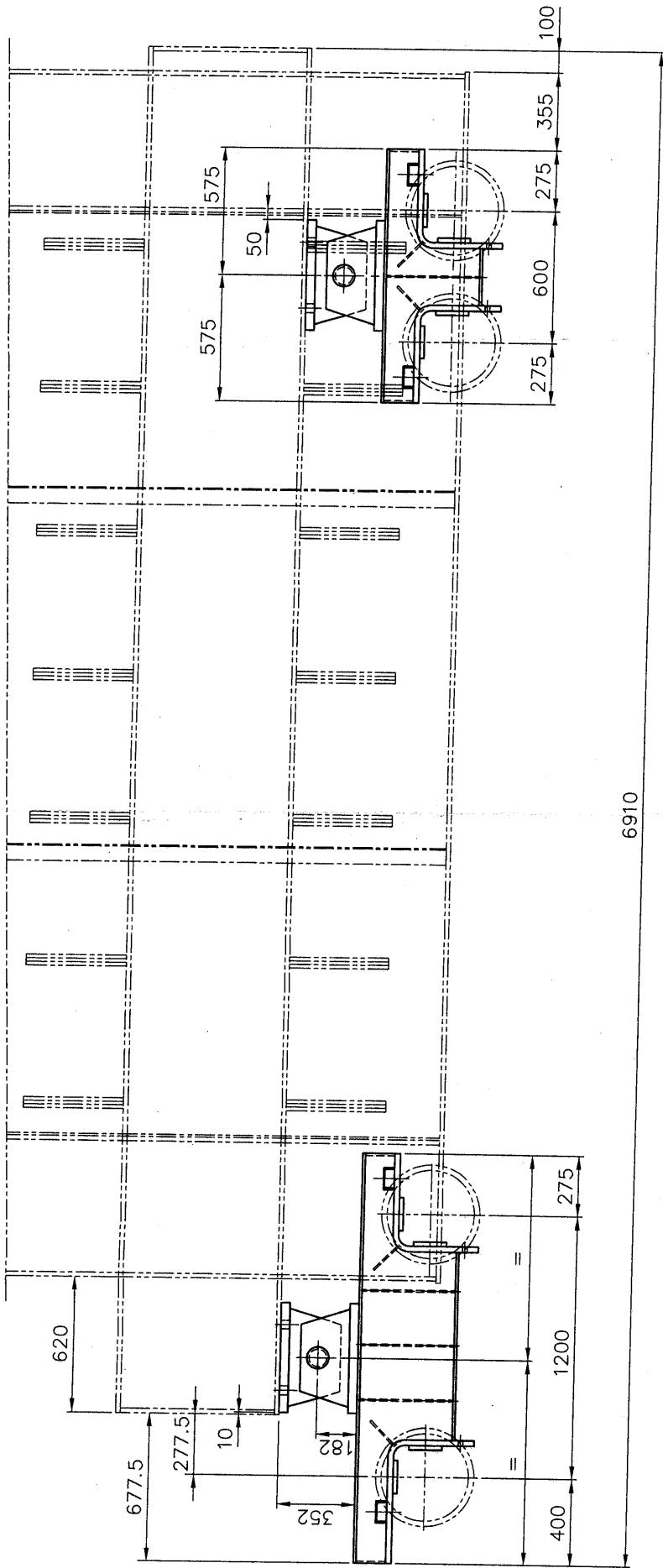
Name -

Membership number -

Seal of Chartered Accountant

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: **M&S-PD-14-086**



6910

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ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	MATL SPEC	UNIT WT	QTY																
EQPT:																						
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CHD	S.SELVAMANICKAM	<i>S. Selvamani</i>	15.04.14																			
APPD	R.RAMAMOORTHY	<i>R. Ramamoorthy</i>	15.04.14																			
	K.RAMANAN	<i>K. Ramanan</i>	16.04.14																			
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		SCALE 1:20		WEIGHT (Kg) 1M20C1102787		ITEM																
DEPT	GRADE OF UNTOL DIM	REF TO ASSY DWG NO REF TO DLD DWG NO																				
M&S CODE	φ / M / f IS:2102																					
2597																						
TITLE		DRAWING NO :		REV																		
NDT DOOR BOGIE ARRANGEMENT (NDT DOOR UNIT-II BLDG.123)		M&S-PD-14-086		00																		

A3-SIZE



BRACKET (DRIVE WHEEL ASSY.)

M&S-PD-12-263

Sheet No. No. of Sheets:

MACHINE: NDTL DOOR SYSTEM

TYPE: LINEAC

TITLE:

REV.

ITEM No.	DESCRIPTION	MATERIAL	STANDARD	NET WT. IN KGS.	DRAWING NO.	ITEM No.
05	BUSH ID100xOD120x210 L	Fe410WA	IS: 2062	5.69		
04	PIN $\phi 100 \times 510$ L	45C8	IS: 2004	20.99		
03	PL.40x232x445	Fe410WB	IS: 2062	64.83		
02	PL.40x220x445	Fe410WB	IS: 2062	61.48		
01	PL.40x440x500	Fe410WB	IS: 2062	138.16		

SCALE
1:20
1:10

DATE

29.05.13

DRAWN

S.Selvamandikam

No. of Pieces

DESCRIPTION

MATERIAL

STANDARD

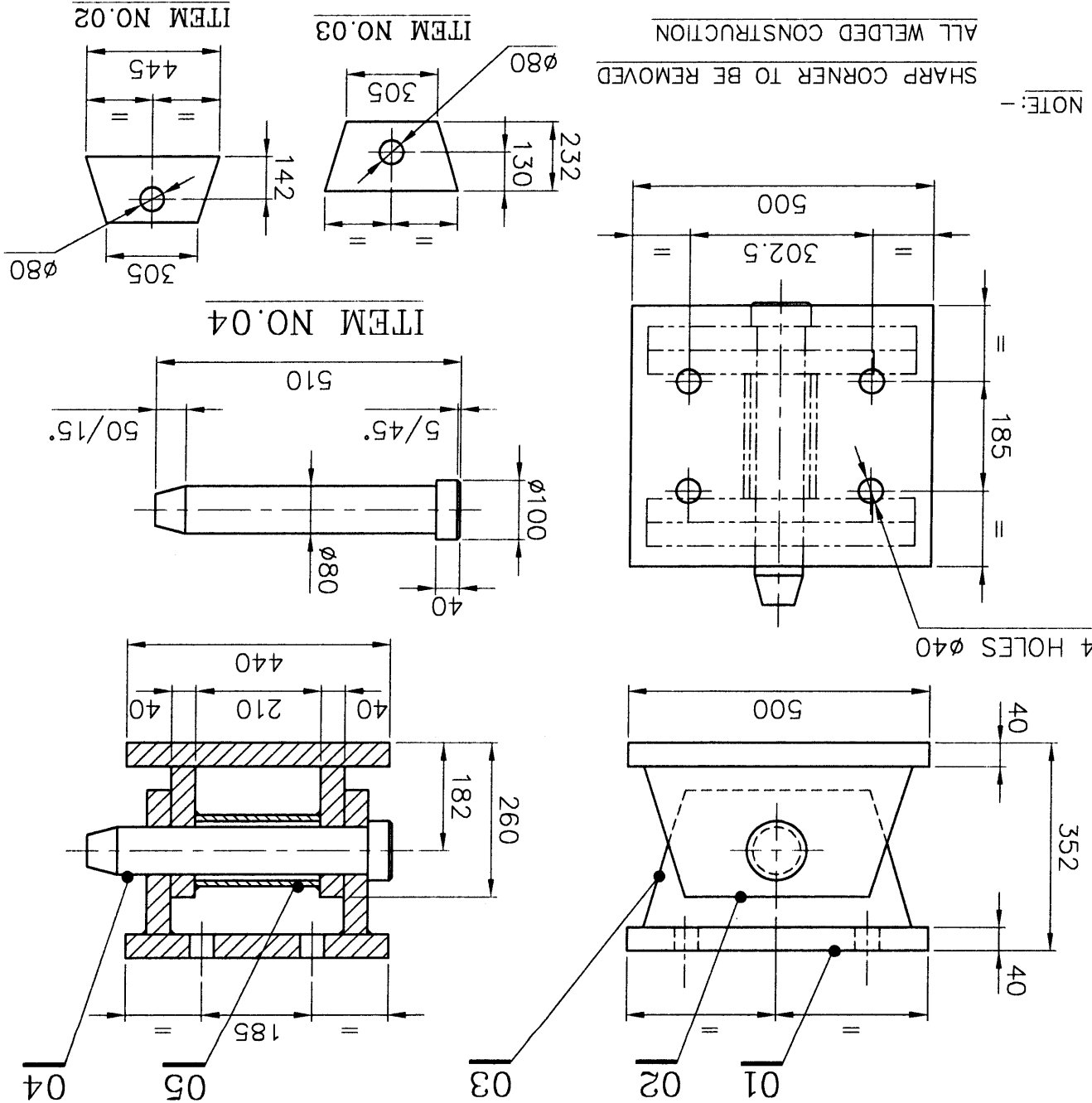
NET WT. IN KGS.

DRAWING NO.

ITEM No.

NOTE: -

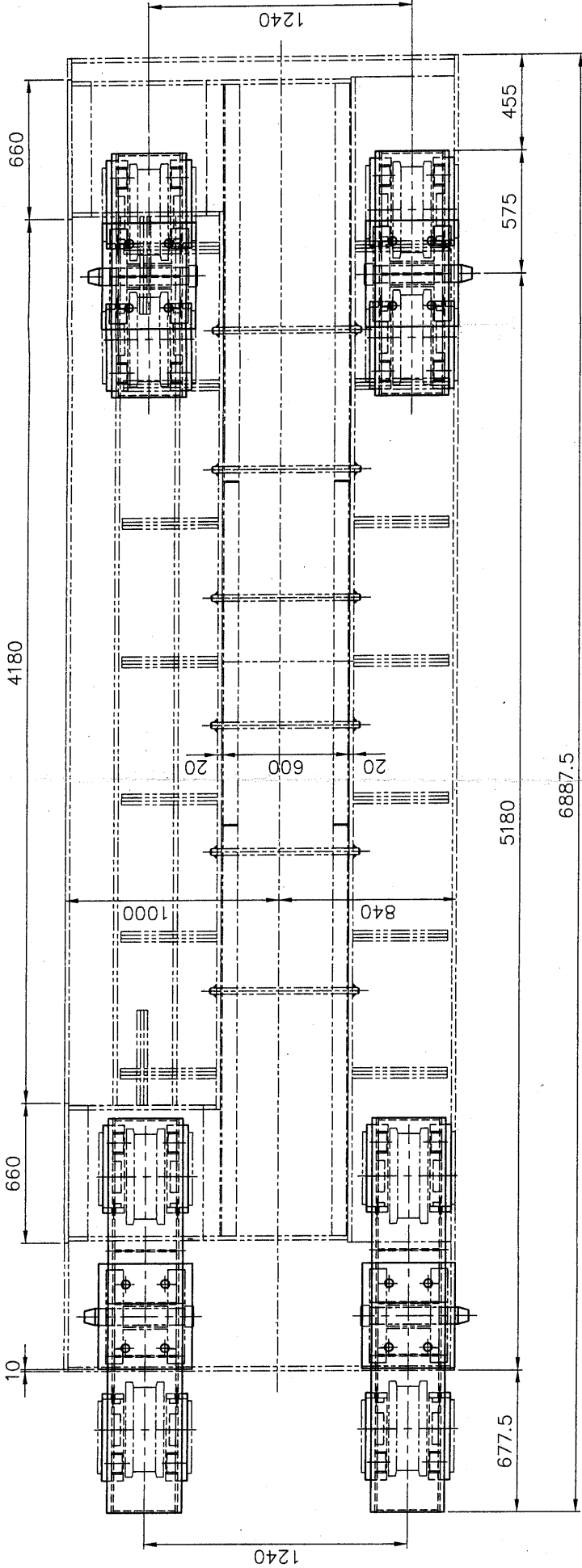
SHARP CORNER TO BE REMOVED
ALL WELDED CONSTRUCTION



CAUTION: THIS DRAWING IS OUR SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED TRICHIRAPPALLI - 620 014.

ALL DIMENSIONS ARE IN MM

ALL DIMENSIONS ARE IN MILLIMETRES



DRAWING NO: M&S-PD-14-085

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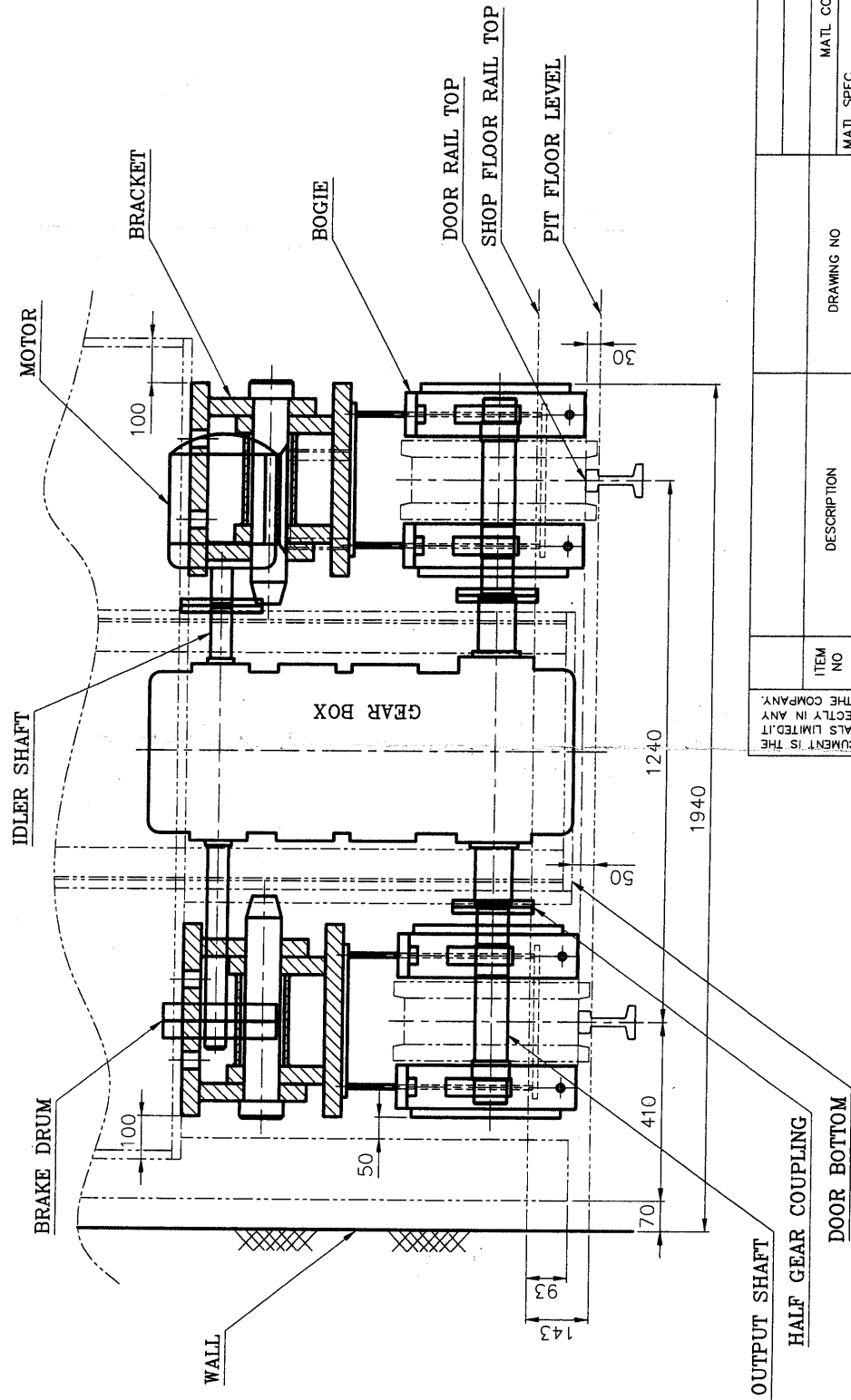
REV	DATE	ALTERED
		CHECKED
		APPROVED
ZONE		

ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	MATL SPEC	UNIT WT	QTY	
EQPT:							
		Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN	NAME	SIGNATURE	DATE
DEPT	GRADE OF UNTOOL DIM	SCALE	WEIGHT (kg)	APPD	R.RAMAMOORTHY	R. Ramamoorthy	15.04.14
M&S CODE	ϕ /M/f	1:20		REF TO ASSY DWG NO	K.RAMANIAN	K. Ramanian	16.04.14
2597	IS:2102			REF TO OLD DWG NO			
TITLE		KEY PLAN (NDT DOOR UNIT-II BLDG.123)		DRAWING NO :		M&S-PD-14-085	
		CARD CODE		REV		00	
		U 01					

A3-SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO. 3M20C1115247



PRINT ISSUED BY
CENTRAL PROJECTS
BHEL, TRICHY
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ITEM NO	DESCRIPTION	DRAWING NO	MATL. SPEC	MATL. CODE	UNIT WT	QTY
EQUIP: NDTL DOOR DRIVE SYSTEM						
Bharat Heavy Electricals Ltd HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014						
DEPT CODE	M&S CODE	GRADE OF UNTO. DIM	SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
	2597	φ/M/F IS 2102	1:10	-	1M20C1102787	
DRN	CHD	APPD	NAME	SIGNATURE	DATE	
			S.SELVAMANICKAM	<i>S. Selvamani</i>	26.12.13	
			R.RAMAMOORTHY	<i>R. Ramamoorthy</i>	07.03.14	
			K.RAMANAN	<i>K. Ramanan</i>	07.03.14	
TITLE			DRAWING NO :			
DRIVE MECHANISM ASSY. DETAIL			3M20C1115247			
(UNIT II-123 BLDG.)			REV			
			00			
			A3-SIZE			

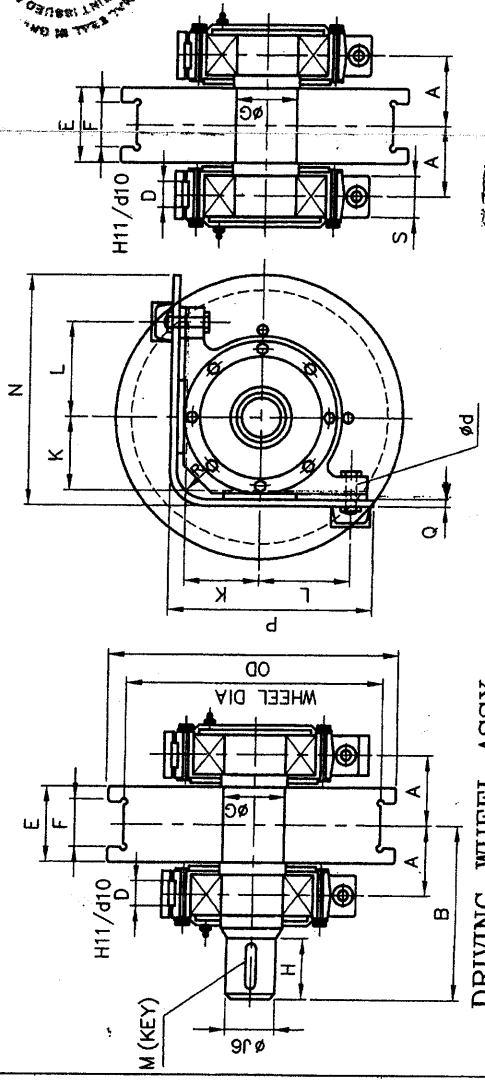
REV	DATE	ALTERED	CHECKED	APPROVED

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ALL DIMENSIONS ARE IN MM

SL. No.	O.D. (WHEEL DIA) IN MM	RAIL SIZE	A	B	D	E	F	øG	H	øJ	K	L	ød	M (KEY)	N	P	Q	R	S	COUPLING No.	SKF BRG No. & BRG. SIZE	TOTAL WEIGHT IN Kg. FOR DRIVE & IDLE
16	800/850	CR-100 CR-120	190	450	80	210	150	152	140	130	212	255	32	32x18x130	687	588	20	150	80	107	22330 150x320x108	870.00 845.00
15		CR-80	168	420	80	180	110	152	125	110	212	255	32	28x16x115	687	588	20	150	80	106	22330 150x320x108	796.00 775.00
14		CR-100 CR-120	190	450	80	210	150	152	140	130	212	255	32	32x18x130	642	588	20	150	80	107	22330 150x320x108	808.00 784.00
13	710/750	CR-100 CR-120	180	420	71	210	150	132	125	110	180	224	32	28x16x115	607	517	20	130	80	106	22326 130x280x93	728.50 711.50
12		CR-80	180	400	71	180	110	132	125	110	180	224	32	28x16x115	607	517	20	130	80	106	22326 130x280x93	653.00 636.00
11	630/680	CR-80/CR-100 & CR-120	180	420	71	210	150	132	125	110	180	224	32	28x16x115	567	517	20	130	80	106	22326 130x280x93	629.00 611.50
10		90-105 Lbs/7d CR-80	150	365	60	180	105	111	110	90	160	190	26	25x14x100	547	462	20	120	60	105	22322 110x240x80	448.00 434.50
9		CR-80	160	375	60	180	125	111	110	90	160	190	26	22x14x100	482	462	20	120	60	105	22322 110x240x80	253.00 245.50
8	500/550	CR-80	150	360	50	180	125	91	105	80	125	160	26	22x14x90	445	395	20	100	50	104	22318 90x190x64	389.00 378.00
7		60/75/90 & 105 Lbs/7d CR-80	150	360	50	180	105	91	105	80	125	160	26	22x14x90	445	395	20	100	50	104	22318 90x190x64	301.00 294.00
6	400/450	CR-80	150	360	50	180	125	91	105	80	125	160	26	22x14x90	395	395	20	100	50	104	22318 90x190x64	253.00 245.50
5		90 Lbs/7d CR-80	145	315	40	180	105	76	85	70	112	140	22	20x12x75	375	345	16	90	50	103	22315 75x160x55	197.00 192.00
4	320/370	75 / 90 & 105 Lbs/7d CR-80	145	315	40	180	105	76	85	70	112	140	22	20x12x75	345	345	16	90	50	103	22315 75x160x55	162.00 157.00
3		50 S0BAR 60 Lbs/7d 75 Lbs/7d	112.5	260	40	125	85	61	65	55	85	112	17	16x10x55	312	287	16	80	50	102	22312 60x130x46	118.50 118.00
2	250/280	50 S0BAR 60 / 90 & 105 Lbs/7d	105	250	32	125	85	61	65	55	76	100	17	16x10x55	254	249	12	60	40	102	22212 60x110x28	66.00 63.00
1	200/230	30 Lbs/7d 50 S0BAR 60 Lbs/7d	95	220	32	100	67	46	55	40	71	95	17	12x8x45	239	232	12	65	40	101	22309 45x100x36	51.00 50.00

DIMENSIONS



ORIGINAL SEAL IN PLACE. POINT ISSUED BY CENTRAL ARCHIVES. ORIGINAL SEAL IN PLACE. POINT ISSUED BY CENTRAL ARCHIVES. ORIGINAL SEAL IN PLACE. POINT ISSUED BY CENTRAL ARCHIVES.

SHAFT - 45CB/IS:1283.
WHEEL - 55CB/IS:1517.
TREAD PORTION WHEEL HARDNESS 500 TO 550 (BHN)

ITEM No.	DRAWING No.	REV.
00	3-M-02R-11993	00
EQUIPMENT CODE: 00	DRYING WHEEL ASSY	
NET WT. IN KGS.	TYPE: GENERAL	
29	CRANE WHEEL ASSY	
COMPONENT CODE: 29	TITLE: STANDARD	
ALTERATIONS:	DRIVING WHEEL ASSY	
ALTERNATIONS:	IDLE WHEEL ASSY	
DATE	20-10-2000	
CHECKED	<i>R. Ramamurthy</i>	
APPROVED	<i>R. Ramamurthy</i>	
SCALE	1:1	
DRAWN		
DESCRIPTION	DRIVING WHEEL ASSY	
DESCRIPTION	IDLE WHEEL ASSY	
MATERIAL	55CB/IS:1517	
STANDARD	IS:1517	
NET WT. IN KGS.	29	
COMPONENT CODE: 29		
ALTERATIONS:		
DATE	20-10-2000	
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