



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT/ MATERIALS MANAGEMENT

An ISO 9001
Company

ENQUIRY	Phone: +91 431 257 7938 Fax : +91 431 252 0031 Email : tvenkat@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two parts.	2631300093	05.08.13	06.09.13

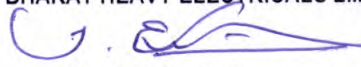
You are requested to quote the Enquiry number, date and due date in all your correspondences. This is only a request for quotation and not an order.
Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	Sliding Door Drive Mechanism as per the technical specification, BHEL commercial terms & conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 Set	31.12.13

Important points to be taken care during submission of offer

1. Checklist to be duly filled and enclosed along with your offer, failing which the offer will not be considered for evaluation.
2. Subsequent to the hosting of this Enquiry, any corrigendum to the Enquiry that may be hosted in the BHEL Web-site as well as Government Tenders-portal shall be viewed by the vendors regularly to know the details of corrigendum. In case if any vendor without seeing the corrigendum quoted as per original Enquiry and intimate that they have wrongly quoted will not be considered and rejected. However as per the appropriate Policy of BHEL action will be taken on them in this regard.

BHEL's General guidelines / instructions including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units) Bharat Heavy Electricals Limited page under Enquiry reference "2631300093".

Tenders should reach us before 14:00 hours on the due date Tenders will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present	Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED  SM / MM / Capital Equipment
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T. VENKATESWARAN
Senior Manager
Capital Equipment / MM
BHEL, Tiruchirappalli - 620 014



BHEL-TRICHY M&S Department

Qualifying Criteria:

Particulars	Vendor's Response
<p>Only those bidder/ vendor (OEM) who have supplied and commissioned at least one no. of class 2 crane with the following items should quote.</p> <p>1) Long travel wheel assembly of diameter 500mm or higher</p> <p>2) Vertical gearbox of centre to centre distance of 450mm or higher.</p>	

TECHNICAL SPECIFICATION FOR SLIDING DOOR DRIVING MECHANISM

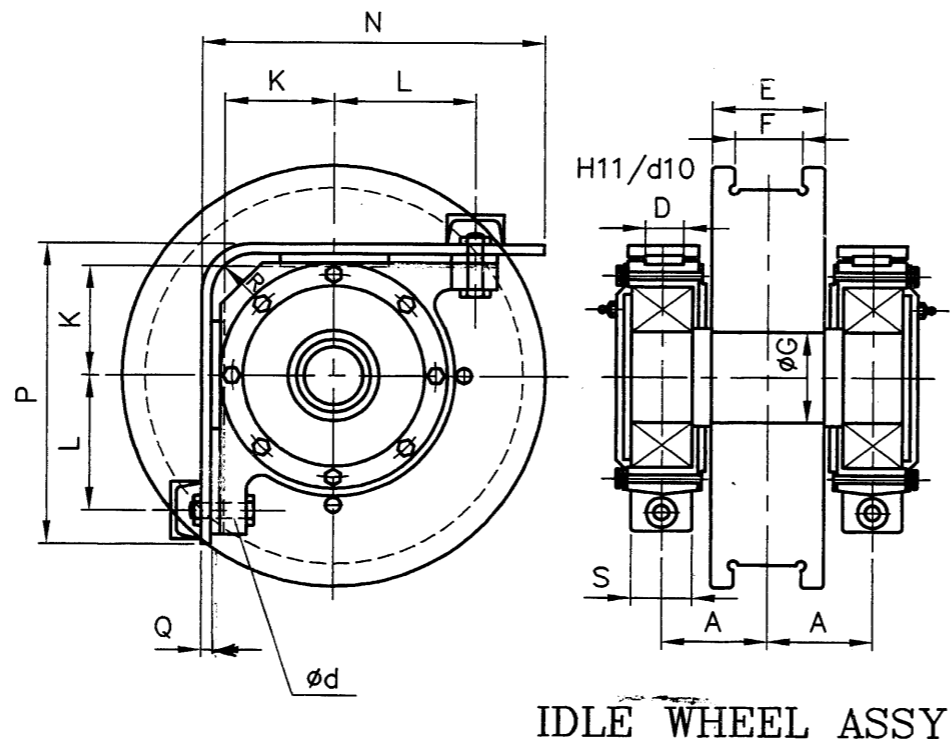
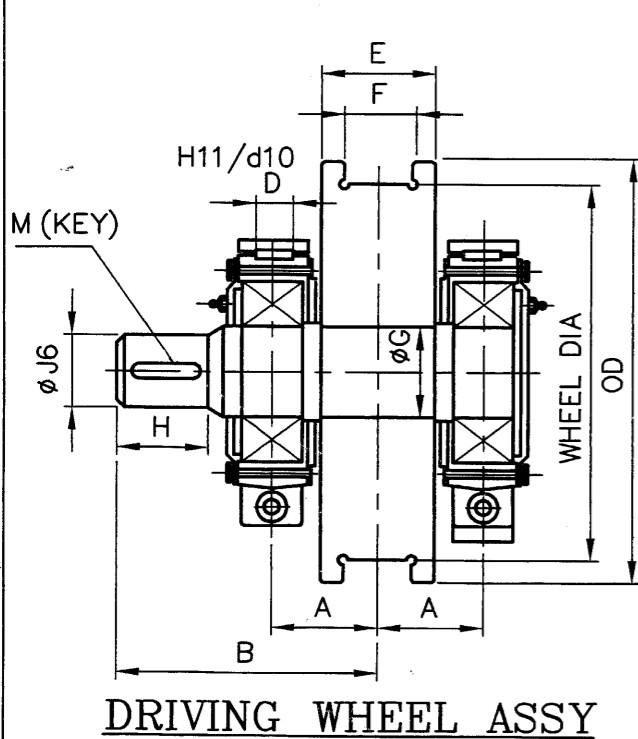
S.No.	ITEM DESCRIPTION	BHEL SPECIFICATION
1.0	Wheel with axle and bearings – 4 Sets	<p>WHEEL ASSEMBLY AS PER BHEL DRAWING NUMBER- 3M02R0011993. WHEEL DIAMETER - 500/550MM SUITABLE FOR RAIL SIZE- CR 80 (REFER SL NO-9 IN THE ENCLOSED DRAWING No. 3 M 02R 00 11993)</p> <p>SCOPE OF SUPPLY: ONE SET SHALL CONTAIN</p> <ol style="list-style-type: none"> 1. ONE IDLER WHEEL ASSEMBLY, 2. ONE DRIVE WHEEL ASSEMBLY. <p>AN ASSEMBLY SHALL CONTAIN THE FOLLOWING:</p> <ol style="list-style-type: none"> 1. WHEEL- FORGED AND TREAD PORTION TO BE HARDENED TO 300-350 BHN; SIZE AS PER DRAWING No.3 M 02R 00 11993. 2. AXLE/SHAFT- 45C8 AS PER IS-7283 AND SIZE AS PER DRG No. 3M-02R00-11993. 3. 2 NOS OF BEARING - SKF MAKE AND SIZE AS PER DRAWING No. 3M-02R00-11993. <p>Note:</p> <ol style="list-style-type: none"> 1. All the above items shall be supplied in loose condition. 2. For wheels and shafts supplier shall provide certificates for material composition from government approved lab and certificate of heat treatment including hardness after heat treatment.
2.0	Motors with coupling fitted – 4 Nos	<p>Power: 3.3 kW Frame Size: 112M, Power supply: 415V, 3 Phase, 50 Hz No of poles- 6 poles Crane Duty -S4 Duty Type: Slip Ring Induction Motor 150 Starts/hour, Class F insulation, 40% CDF, IP55 Coupling – Full gear coupling 102 size Preferred Makes: BHARAT BIJLEE / KIRLOSKAR / ABB / SIEMENS / MARATHON / GEC</p>
3.0	Gearbox Assembly- 4 Nos	<p><u>VERTICAL REDUCTION GEARBOX ASSEMBLY</u></p> <p>Size : VR 450 MM (Input to output center distance)</p> <p>Reduction ratio : 31.8: 1</p> <p>Number of stage : 3</p> <p>HP rating : 7.5 HP (Minimum)</p> <p>Casing type : MS fabricated</p> <p>Type of gears : Helical gear in all stage.</p> <p>Quantity required : 2 Nos (Left and Right each 1 no.)</p> <p>Brake drum : 160mm diameter Brake drum and coupling fitted in input shaft and coupling in output shaft.</p> <p>Coupling : Full gear coupling 102 size in input shaft and Full gear coupling 103 size in output shaft</p> <p>Oil level gauge, drain plug and inspection cover shall be provided.</p> <p>Lifting eye shall be provided at the top of the gearbox.</p> <p>Extension of input shaft on both sides and output shaft on one side only.</p>

		<p>Casing shall be of three parts and shall be with one horizontal split at output shaft and a vertical split from input to output shaft.</p> <p>All stage pinions shall be integral with shaft.</p> <p>The output shaft centre to gearbox bottom shall be 175 mm Max.</p> <p>All bearing covers shall be fitted with gear box casing by hex. screws.</p> <p>All shafts shall be fitted with SRDG ball bearings and shall be 63xx series.</p> <p>All bearings shall be SKF/NBC/FAG/NTN make.</p> <p>Before manufacture drawing shall be submitted for our approval.</p> <p>Drawing shall contain the following details.</p> <ol style="list-style-type: none"> 1. All shaft detail 2. All gear detail with module and helix angle. 3. Oil capacity. 4. Oil seal size. 5. Material of each gear and pinion. 6. All bearing sizes. 7. Material of all gears, pinion shafts and other components.
4.0	Brake Units- 4 Nos	<p>A.C. ELECTRO HYDRAULIC DOUBLE SHOE, SPRING LOADED THRUSTOR BRAKE UNIT suitable for diameter 160mm brake drum (suitable for 400/440 Volts, 3 Phase AC Supply) with thrustor and 2 spare tie-rods.</p> <p>THRUSTOR CAPACITY- 18 kg. STROKE- 50mm, BRAKING TORQUE- 20 kg-m.</p> <p>Supplier shall send the detailed technical data sheets including dimensions along with their offer to assess the technical suitability.</p> <p>PREFERRED MAKES: SPEED-O-CONTROL/ OMEGA/ TECHNICAL SYSTEM/ ELECTROMAG</p>
5.0	Resistance Box suitable for 3 step control- 4 nos	<p>MOTOR DETAILS: KW – 3.3 x 4 motors, Motor Stator Current: 8.6A, Motor Rotor volt: 115V, Motor Rotor current:20.6A</p> <p>Resistance Box suitable for 3 step speed control of the above motor- 4 Nos</p> <p>Resistance type: Punched steel of continuous rating.</p> <p>Resistance make: OHMARK/BCH only.</p>
6.0	Control Panel- 2 Nos	<p>The motor control Panel shall be suitable for controlling 2 nos of motors of the following specification.</p> <p>Control Panel dimensions (approx)- 600(L) X 400(W) X 1000(H) mm</p> <p>MOTOR DETAILS: 3.3 kW, Motor Stator Current: 8.6A, Motor Rotor volt: 115V, Motor Rotor current:20.6A</p> <p>The control Panel shall consist of the following</p> <ol style="list-style-type: none"> 1. Control Transformer 1kva , 380-415 / 110V AC. 2. Lighting Transformer 500 VA , 415 / 230v AC. 3. MCCB shall be suitable current rating with Overload, Short circuit and Earth fault Protection. Only Siemens, L&T make are accepted. 4. Power Contactor of suitable rating to feed power for 2 nos of motors 5. End termination shall be through suitable current rating of Elmax connector block. 6. Control supply shall be 110V, AC 7. Panel shall be fully wired with number ferrules as per Drawing. 8. TRAVEL MECHANISM MOTOR DETAILS: KW – 3.3 x 2 motors, Stator Current: 8.6A, Rotor volt: 115V, Rotor current: 20.6A 9. The control panel shall have provision for 3 step speed control of the motors (2 nos) simultaneously. 10. Forward & Reverse Contactors for Stator (Common) Siemens Make 11. Rotor contactors 2 set x 3 steps shall be of Siemens make with ON-Delay Timer for four motors. 12. ON-DELAY Timers shall be BCH pneumatic type.. 13. Stator and Rotor contactors shall be suitable current rating of Siemens Make. 14. Over Load Relay: Suitable current rating of Individual mounting type Bimetal relay / Siemens make for separate motors. (for 2 motors) 15. Over Load protection for control and lighting transformer shall be provided. 16. Panel shall be provided with CFL lamp (for maintenance and trouble-shooting purpose) and cooling fan. <p>Note: Wiring diagram to be submitted for approval before manufacture</p>

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

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	S	R	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	710/750	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		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	630/680	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		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	500/550	90-105 Lbs/Yd 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 CR-100	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	400/450	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/Yd	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	320/370	CR-80 CR-100	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/Yd 105 Lbs/Yd	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	250/280	75 / 90 & 105 Lbs/Yd 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 SQ.BAR 60 Lbs/Yd 75 Lbs/Yd	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	200/230	50 SQ.BAR 60 / 90 & 105 Lbs/Yd	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		30 Lbs/Yd 50 SQ.BAR 60 Lbs/Yd	95	220	32	100	67	46	55	40	71	95	17	12x8x45	239	232	12	65	40	101	22309 45x100x36	51.00 50.00



MATERIAL :- SHAFT - 45CB/IS:7283.
 WHEEL - 55CB/IS:5517.
 FORGED.
 TREAD PORTION WHEEL HARDNESS 300 TO 350 (BHN)

No. of Pieces	DESCRIPTION	MATERIAL	STANDARD	NET.WT.IN KGS.	DRAWING No.	ITEM No.
REFERENCE:				COMPONENT CODE: 29	EQUIPMENT CODE: 00	
SCALE	DRAWN			ALTERATIONS:	DCN REF	DATE
	CHECKED					SIGN.
	APPROVED					INDEX
	DATE	20-10-2000				
MACHINE: CRANE WHEEL ASSY				TYPE: GENERAL		
TITLE: STANDARD CRANE WHEEL ASSY				DRAWING No: 3-M-02R-11993		REV.
No. of Sheets				Sheet No:		