

BHARAT HEAVY ELECTRICAL LIMITED, JHANSI			
	Specification No		10580
	Item No		MH-1/7/6298
	Location		Bay - 11
	Quantity		One number
SPECIFICATION CUM COMPLINCE CERTIFICATE OF 30 TON MOTORISED TROLLEY			
Note :			
1	VENDOR must submit complete information agaist clause No-9.0 (Qualifying Condition). The offer meeting this clause would only be pprocessed		
2	The "Specified/to be confirmed by venderOffered" Coloumn and where applicable, the " Devitaions" Coloumn of the formate shall be filled in by the Vendor and submitted along with the offer. Technical details also submitted with the offer. Inadequate/ Incomplete. Ambiguos, of unsustainable information against any of the clauses of hte specification / requirement shall be treated as non- compliance.		
3	The offer and all documents elclosed with offer should be in English language only.		
SCOPE:			
DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF 30 TON MOTORISED TROLLEY AS PER SPECIFICATION BELOW			
S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY VENDER	DEVIATIONS
1.0 PORPOSE & WORK PIECE MATERIAL:			
1.1	Battary operated motorised rail trolley is required for transporting of tranformer winding and loose items form Bay-11 to Bay-9 and Bay-10 (Assembly shops). The pay load on trolley will be 30 ton. Trolley should move on prepared rail track.	VENDOR TO CONFIRM	
2.0 SPECIFICATION			
2.1	Capacity of trolley (Pay load) : 30 Ton	VENDOR TO CONFIRM	
2.2	Trolley platform size : L-6000 MM X W-3000 MM	VENDOR TO CONFIRM	
2.3	Track gauge (Rail) : 1676 mm	VENDOR TO CONFIRM	
2.4	Curve on rail track 10 degree	VENDOR TO CONFIRM	
2.5	Track length : 300 Meter	VENDOR TO CONFIRM	
2.6	Trolley movement required : 300 meter ( forward & reverce)	VENDOR TO CONFIRM	
2.7	Trolley should accumulate rail curve of 10 degree	VENDOR TO CONFIRM	
2.8	Trolley speed per miniuts : 0 to 20 meter	VENDOR TO CONFIRM	
2.9	Height from rail top : Max. 500 mm	VENDOR TO CONFIRM	
2.10	Wheel base :	VENDOR TO SPECIFY	
2.11	Diameter of the wheel on tread :	VENDOR TO SPECIFY	
2.12	Approximate tare weight of trolley in Ton :	VENDOR TO SPECIFY	
2.13	Number of Axle : 4 Nos	VENDOR TO CONFIRM	
2.14	Number of bogies : 2 Nos	VENDOR TO CONFIRM	
2.15	Motor rating in KW	VENDOR TO SPECIFY	
2.16	Rail size- 90 LBS	VENDOR TO CONFIRM	
2.17	Operation - Through control desk operated from both end of the trolley	VENDOR TO CONFIRM	
3.0 CONSTRUCTION			
	Battery operated motorised rail trolley consist of under frame & bogie, suspension, wheel axle arrangement , DC motor, gear box assembly, electric brakes, and speed control system assembled in control panel, operation control board etc. Necessary inter-connection cable shall be part of the trolley.	VENDOR TO CONFIRM	
3.1 UNDER FRAME			

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3.1.1	The under frame and bogie of the motorised trolley shall be made out of rolled steel section and beams. The beams and sections shall be welded adequately.	VENDOR TO CONFIRM	
3.1.2	The under frame bottom and top be covered with steel plate of adequate thickness. Chequered plates strips shall be welded on top of the platform to avoid slippage over platform.	VENDOR TO CONFIRM	
3.1.3	The main members of the platform shall be suitably reinforced to withstand shock loads encountered in service.	VENDOR TO CONFIRM	
3.1.4	Four nos spring buffers shall be provided on the trolley (two on both side)	VENDOR TO CONFIRM	
3.1.5	One No hook type coupling shall be provided on both side of trolley	VENDOR TO CONFIRM	
3.1.6	Suitable provision shall be provided to climb up of down the trolley for a man on either side.	VENDOR TO CONFIRM	
3.1.7	Lifting lugs of adequate strength shall be provided for lifting the trolley (without load) by EOT crane.	VENDOR TO CONFIRM	
<b>3.2</b>	<b>SUSPENSION</b>		
3.2.1	The suspension shall consist of Silico maganese steel coil spring.	VENDOR TO CONFIRM	
<b>3.3</b>	<b>WHEEL AXLE ARRANGEMENT</b>		
3.3.1	The wheels shall be made out of EN9 forged steel suitable for IRS 52	VENDOR TO CONFIRM	
3.3.2	The wheel tread and flange and axle bore portion shall be machione finished.	VENDOR TO CONFIRM	
3.3.3	The running tread and flange portions shall be induction hardended to give extended life.	VENDOR TO CONFIRM	
3.3.4	The wheel tread and flange shall be machined to indian Railway standard.	VENDOR TO CONFIRM	
3.3.5	The wheel shall be pressed on the axle by force for (by hydraulic press)	VENDOR TO CONFIRM	
3.3.6	The axle shall be made out of alloy steel forging	VENDOR TO CONFIRM	
3.3.7	The wheel axle assebmly shall run on antification spherical roller bearings housed in cast steel.		
3.3.8	The bearing used shall be of SKF/FAG make only.	VENDOR TO CONFIRM	
3.3.9	Provision shall be made topping up of grease in service.	VENDOR TO CONFIRM	
<b>3.4</b>	<b>GEAR BOX ARRANGEMENT</b>		
3.4.1	Case hardened, single helical gear box arrangement of splash lubrication, shall be provided, Over and above it shall be a product of suprier design, latest manufacturing technology and best quality of material.	VENDOR TO CONFIRM	
3.4	The bearing used shall be of SKF/FAG make only.	VENDOR TO CONFIRM	
<b>3.5</b>	<b>DRIVE SYSTEM</b>		
3.5.1	The drive system shall consist of as DC motor to the gear box.	VENDOR TO CONFIRM	
3.5.2	The gear box shall be axle monted and shall be fitted with torque	VENDOR TO CONFIRM	
3.5.3	The motor shall be mounted on the gear box base and assembly shall be suspended from the frame through torque arm.	VENDOR TO CONFIRM	
<b>3.6</b>	<b>MOTOR</b>		
3.6.1	Motor should be D.C.motor	VENDOR TO CONFIRM	

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<b>3.6.2</b>	<b>Following details are to be given by vender:</b>		
3.6.2.1	Motor Voltage	VENDOR TO SPECIFY	
3.6.2.2	Motor rating in KW	VENDOR TO SPECIFY	
3.6.2.3	Type	VENDOR TO SPECIFY	
3.6.2.4	Make of the motor	VENDOR TO SPECIFY	
3.6.2.5	Model of the motor	VENDOR TO SPECIFY	
<b>3.7</b>	<b>BATTERY</b>		
3.7.1	Suitable rating battery shall be provided.	VENDOR TO CONFIRM	
<b>3.7.2</b>	<b>Following details are to be given by vender:</b>		
3.7.2.1	Battery Voltage	VENDOR TO SPECIFY	
3.7.2.2	Battery rating	VENDOR TO SPECIFY	
3.7.2.3	Type	VENDOR TO SPECIFY	
3.7.2.4	Make of the battery	VENDOR TO SPECIFY	
3.7.2.5	Model	VENDOR TO SPECIFY	
<b>3.8</b>	<b>ELECTRICAL SYSTEM</b>		
3.8.1	The electrical system shall consist of control panel, Suitable rating traction battery and speed control system.	VENDOR TO CONFIRM	
3.8.2	The system shall includes protection against over current, shrt circuit , earth fault proction, motor over load, over voltage, under voltage, over temprature etc.	VENDOR TO CONFIRM	
3.8.3	Speed control arrangement with control switch gear shall be provided for suitable rating of motor.	VENDOR TO CONFIRM	
3.8.4	Trolley shall be operated form driver desk (both end of the trolley) with speed control, start/ stop (ON/OFF), Forward/ reverse push buttons. As emergency push button shall also be provided for stopping the trolley in emergency	VENDOR TO CONFIRM	
3.8.5	All electrical & electronic control cabinets & panels should be dust and vermin proof.	VENDOR TO CONFIRM	
3.8.6	All electrical components in the cabinets should be mounted on DIN rail	VENDOR TO CONFIRM	
3.8.7	Motor shall sonfirm to IEC indian standards.	VENDOR TO CONFIRM	
3.8.8	The complete control circuit for the system shall be housed in a common control panel suitable located on the frame base plate. All indicating instruments necessary for monitoring the system shall be suitabaly located on the control panel. The panel shall be complete with MCCB/ ICTPN switch for incoming supply, All contractors, relays, starter, timer, single phasing preventor, HRC fuses, step down transformer for control voltage etc.	VENDOR TO CONFIRM	
<b>3.9</b>	<b>BRAKE SYSTEM</b>		
3.9.1	Fail safe electro magnatic/ Electro hydraulic thuster brake shall be provided on the gear box shaft.	VENDOR TO CONFIRM	
3.9.2	Provision shall be made for manual release of brake, if needed.	VENDOR TO CONFIRM	
<b>3.10</b>	<b>LIMIT SWITCH</b>		
3.10.1	Lever type limit switched shall be provided to on both side of trillely to stop the lever over travel.	VENDOR TO CONFIRM	
<b>3.11</b>	<b>WARNING SYSTEM.</b>		

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3.11.1	Electric hooter and gong bell shall be provided. The electric hooter shall be activated automatically at the time of trolley movement.	VENDOR TO CONFIRM	
<b>3.12</b>	<b>BATTERY CHARGER</b>		
3.12.1	Suitable battery charger shall be provided for the charging of battery.	VENDOR TO CONFIRM	
3.12.2	Quantity of charger shall be two numbers . Charger shall be installed at both end.	VENDOR TO CONFIRM	
3.12.3	For charger supply voltage shall be 415 Volt 50 Hsr. 3 phase supply. Vender to indicate supply voltage for the charger.	VENDOR TO CONFIRM	
<b>3.13</b>	<b>PAINTING</b>		
3.13.1	Two coats of red oxide metal primer followed by two coats of synthetic enamel paint of deep orange colour shall be done.	VENDOR TO CONFIRM	
<b>4.0</b>	<b>DOCUMENTATION:</b>		
4.1	Three stes of following documents (Hard copies) in English language should be supplied along with the system.	VENDOR TO CONFIRM	
4.2	Operation and maintenance manuals	VENDOR TO CONFIRM	
4.3	Details Maintenance manual of the system with all drawing of assemblies/ sub-assemblies/ parts including Electrical/ Pneumatic/ Coolant/ Hydraulic circuit diagrams. All assembly/ sub-assembly Drawings shall be supplied with the part list also.	VENDOR TO CONFIRM	
4.4	Catalogues, O & M manual of all bought out items including drawings.	VENDOR TO CONFIRM	
<b>5.0</b>	<b>ERECTION &amp; COMMISSIONING.</b>		
5.1	Supplier to take full responsibility for carrying out the erection, start up., testing of system, its control system & all type of other supplied equipment. Power, air & water shall be provided by BHEL at only one point to be indicated by Supplier. Other requiremet like crane, Trolley shall also be provided by BHEL if available at site. Details of the requirements should be informed by VENDOR in advance.	VENDOR TO CONFIRM	
5.2	Successful proving of BHEL specified service requirements by supplier shall be considered as part of commissioning.	VENDOR TO CONFIRM	
5.3	Tools .Tackles, instruments and other necessary equipments including Laser equipment, if any, required to carry out all above actives should be brought by the supplier.	VENDOR TO CONFIRM	
5.4	Commissioning spares required for commissioning of the system within stipulated time shall be brought by the supplier on returnable basis.	VENDOR TO CONFIRM	
5.5	Portion, if any of the system, accessories and other supplied item where paints has rubber off of peeled during transit of erection should be repainted and marged with the original surrounding paints by the VENDOR for this purpose the VENDOR should supply sufficient quantity of touch-up paint.	VENDOR TO CONFIRM	
5.6	Schedule of Erection and commissioning shall be submitted with the offer.	VENDOR TO CONFIRM	
5.7	Charges, duration. Term & condition for E&C should be furnished in details separately by VENDOR along with offer.	VENDOR TO CONFIRM	

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<b>6.0</b>	<b>AMBIENT CONDITIONS &amp; THERMAL STABILITY</b>		
6.1	Total system including all supplied items should work trouble free and efficiently under following operating conditions to achieve specified accuracies. Ambient conditions : Temperature =5 to 50 degree C	VENDOR TO CONFIRM	
6.2	Weather conditions are tropical. Atmosphere may be dust laden during some part of the year. System shall be kept in the normal shop floor conditions. Max. temperature variations is 25 deg. C in 24 hours. (Vendor to confirm the system is suitable for above and details of provision on the system for the same are to be furnished by VENDOR)	VENDOR TO CONFIRM	
<b>7.0</b>	<b>GUARANTEE:</b>		
7.1	24 Months from the date of acceptance of the trolley	VENDOR TO CONFIRM	
<b>8.0</b>	<b>GENERAL:</b> The VENDOR should submit the following information:		
8.1	Model of the offered trolley	VENDOR TO SPECIFY	
8.2	Total connection load (KVA)	VENDOR TO SPECIFY	
8.3	Floor area required (Length, width, Height) for complete system &	VENDOR TO SPECIFY	
8.4	Total Weight of the system	VENDOR TO SPECIFY	
8.5	First fill of hydraulic oil/ gear oil/ etc to be supplied by vendor	VENDOR TO CONFIRM	
<b>9.0</b>	<b>QUALIFYING CONDITION</b>		
9.1	Only those vendors, who have supplied at least one motorised trolley of 30 Ton or higher capacity in the past ten years and such trolleys are presently working satisfactorily for more than one year after commissioning, should quote. The following information is to be submitted by the Vendor about the companies where trolleys have been supplied. This is required from all the vendors for qualification of their offer.	VENDOR TO CONFIRM	
	1. Name of the customer / company where similar trolley is installed. (copy of purchase order to be furnished)	VENDOR TO SPECIFY	
	2. Complete postal address of the customer.	VENDOR TO SPECIFY	
	3. Year of supplying / commissioning.	VENDOR TO SPECIFY	
	4. Name and designation of the contact person the customer.	VENDOR TO SPECIFY	
	5. Phone. FAX, no and E-mail address of the contact person of the customer.	VENDOR TO SPECIFY	
	6. Performance certificate from the customer regarding satisfactory performance of trolley supplied to them	VENDOR TO SUBMIT	
10	BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false/ incorrect, the offer shall be rejected.	VENDOR TO CONFIRM	
APPROVED BY		PREPARED BY	
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