

BHARAT HEAVY ELECTRICAL LIMITED, JHANSI				
SPECIFICATION CUM COMPLIANCE CERTIFICATE OF 250 TON AERO CASTER SYSTEMS				
EQUIPMENT	AERO CASTER (250 TON)			
ITEM NO	MH-1/7/6338			
LOCATION	POWER ASSY. SHOP (BAY-9)			
QUANTITY	1 NO.			
SPECIFICATION NO.	10579			
NOTE:				
1. Vendor must submit complete information against clause no. 13.0 (Qualifying Condition). The offer meeting this clause would only be processed.				
2. Vendor to furnish the offer using this standard template of the specification. While furnishing the offer, no change is to be made in the first three columns (i.e. 'S.NO.', 'DESCRIPTION FOR BHEL REQUIREMENT' & 'ACTION BY VENDOR'). Only the "Offered" column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.				
3. The offer and all documents enclosed with offer should be in English language only.				
NAME & ADDRESS OF THE SUPPLIER :				
CONTACT PERSON'S NAME				
TELEPHONE NOS.:				
E-MAIL ADDRESS :				
SCOPE: DESIGN, SUPPLY, ERECTION & COMMISSIONING OF 250 TON AERO CASTER COMPLYING WITH SPECIFICATIONS AS BELOW :				
SNO	DESCRIPTION FOR BHEL REQUIREMENT	ACTION BY VENDOR	OFFERED	DEVIATIONS
1	PURPOSE & WORK PIECE MATERIAL			
1.1	Purpose: The Aero caster is required for transportation of heavy transformer from one place to another place i.e. from the routine testing area to impulse test area & vice-versa. Aero caster should comprise of mover of rigid construction covered with a top plate of steel, suitable nos of air bearings, no load-wheels, drive units, pneumatics and air supply system.	VENDOR TO NOTE		
2	SCOPE OF SUPPLY			
2.1	Aero - Caster, Capacity- 250 ton with loading pallet design.:01 No.	VENDOR TO CONFIRM		
2.1.1	Loading pallet, Capacity- 250 ton (To be supplied by BHEL as per vendor's design)	VENDOR TO NOTE		
2.1.2	VENDOR MUST QUOTE SEPARATE PRICE FOR FOLLOWING ITEMS IN PRICE BID A. AERO CASTER 250 TON B. LOADING PALLET DESIGN FOR 250 TON CAPACITY	VENDOR TO NOTE & CONFIRM		
2.2	SPECIFICATION : Aero - Caster, Capacity- 250 ton			
2.2.1	Dimensions of 250 Tons Aero-caster			
2.2.1.1	Length : 7.200 (± 500) mm	VENDOR TO CONFIRM & SPECIFY		
2.2.1.2	Width : 2500 (± 100) mm	VENDOR TO CONFIRM & SPECIFY		
2.2.1.3	Height : 450 mm (± 50) mm	VENDOR TO CONFIRM & SPECIFY		
2.3	Movers :- With built in driving unit and Radio Remote control. Details to be furnished along with the offer.	VENDOR TO CONFIRM & FURNISH		
2.4	Air Bearings:- Suitable no. of air bearings should be provided in the mover for moving the mover with the load. It should be possible that air bearings could be easily drawn out for inspection and service with unloading or lifting up through mover. Details to be furnished along with the offer.	VENDOR TO CONFIRM & FURNISH		
2.5	Drive unit: The mover should be equipped with electrical/pneumatic steerable drive units, suitably located in the steel construction. The speed should be controllable from the control handle bar / RRC, in forward/ reverse, left & right and angular rotation direction. Details to be furnished along with the offer. For electrical steerable drive unit the mover should be equipped with suitable maintenance free battery pack including a battery charger & a battery status indicator.	VENDOR TO CONFIRM & FURNISH		
2.5.1	Control: All the inputs and outputs shall be properly isolated with Fuse and interposing relays for protection.	VENDOR TO CONFIRM		
2.6	Load carrying pallet design :			
2.6.1	Construction details/drawings of loading Pallet (cap-250 ton) along with all technical details should be furnished by vendor with in 6 weeks from the issue of purchase order with OGA for aero caster.	VENDOR TO FURNISH		
2.7	Pneumatics :- All pneumatic control elements located in transport inside of a cabinat. Pneumatic executing components located in side of transporter on suitable position to ensure best performance. Electronic components located inside of cabinat to keep moisture away from electronic circuit.	VENDOR TO CONFIRM		
2.8	RRC:- The mover should be easily manoeuvred by a radio remote control with following functions 1) Key switch 2) Emergency stop 3) Air bearings On/ OFF 4) Provision for the control of speed and angular direction of the drive units	VENDOR TO CONFIRM VENDOR TO CONFIRM VENDOR TO CONFIRM VENDOR TO CONFIRM		
2.8.1	RRC shall be provided with following 1) Batteries and battery charger for its transmitter unit. 2) 3 sets of Batteries and 1 No. additional charger for its transmitter unit 3) Detailed specification of Batteries used with receiver unit.	VENDOR TO CONFIRM		

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2.8.2	The RRC system should be operable in the frequency range of 335-336 MHZ for which presently no license is required in INDIA. If operational frequency requires obtaining licence from Govt. Of India, it has to be arranged by Vendor. Required authorisation documents shall be given by BHEL. All requirement to be complied by vendor before commissioning as per P.O.	VENDOR TO CONFIRM & SUBMIT OPERATING FREQUENCY.		
2.8.3	Provision for tandem operation of two numbers of aero caster.	VENDOR TO CONFIRM		
2.8.4	RRC make.	VENDOR TO SPECIFY		
2.9	A. AIR SUPPLY SYSTEM :- BHEL will provide compressed air supply Min.- 6.5kg/sq cm-10 kg/sq cm Aero Caster system should work on full load capacity at min. air supply (6.5 kg/ sq cm) and should be able to withstand with max. air supply (10 kg/sq cm) B. Vendor must specify the parameter of air required to run the aero caster	VENDOR TO CONFIRM		
2.9.1	Hose Reel :- 1) Hose length :- 30 mtr (minimum) 2) Hose dia. :- 2.0"	VENDOR TO CONFIRM & SPECIFY VENDOR TO CONFIRM & SPECIFY		
	3) Set of 3-way ball valves and quick lock coupling. Quantity : 3 sets.	VENDOR TO CONFIRM		
2.9.2	The hose reel should be mounted on four turning wheels with brakes.	VENDOR TO CONFIRM		
2.9.3	The hose is drawn out manually and the hose reel should rotate freely with low	VENDOR TO CONFIRM		
2.9.4	Rolling up the hose should be through motor of the hose reel.	VENDOR TO CONFIRM		
2.9.5	Vendor should submit details with sketch of the offered hose reel system alongwith technical offer.	VENDOR TO CONFIRM & FURNISH		
2.10	Vendor to furnish the details of floor required for the movement of aero caster	VENDOR TO FURNISH		
3	ENVIRONMENTAL PERFORMANCE OF THE SYSTEM:			
3.1	The system shall be suitable for operating upto 45 °C (Max.). System to generate alarm if temperature exceeds the limiting value.	VENDOR TO CONFIRM		
3.2	The electronic cabinet of aero caster shall be suitable to withstand temperature upto 45°C. System to generate alarm if temperature exceeds the limiting value.	VENDOR TO CONFIRM		
3.3	The system shall conform to the factors related to environment: If any safety / environmental protection enclosure is required it should be built in the system by the vendor.	VENDOR TO CONFIRM		
4	ACCESSORIES: (Included in the scope of supply with out extra cost)			
4.1	Hose pipes : 1 Nos. (Same dia, length ,coupler & Material as installed with air caster) with quick change couplers	VENDOR TO CONFIRM		
4.2	04 No. Quick coupler set(male -female) same as used with hose pipe	VENDOR TO CONFIRM		
4.3	All necessary spares for two years trouble-free operation.	VENDOR TO SUBMIT THE LIST		
5	DOCUMENTATION : 3 copies of each of the following shall be supplied along with the system in English.			
5.1	Instruction manual	VENDOR TO CONFIRM		
5.2	Operation and maintenance manual along with circuit diagrams, Assy. drawing ,details of bought out items and schematics.	VENDOR TO CONFIRM		
5.3	Complete PLC program backup file with comments in English is to be provided	VENDOR TO CONFIRM		
5.4	The PLC Programming software (licensed) with Communication cable and adapter for communication with the supplied PLC, shall be given.	VENDOR TO CONFIRM		
5.5	Complete electrical circuit diagram of the system with all wiring and termination details "as commissioned" , with PLC ladder (if PLC based system) shall be provided in soft and hard bind copies.	VENDOR TO CONFIRM		
5.6	Test & Guarantee Certificate.	VENDOR TO CONFIRM		
5.7	Conformance certificate for safety standards	VENDOR TO CONFIRM		
5.8	10 yrs backup for spare and service support.	VENDOR TO CONFIRM		
5.9	Calibration certificate	VENDOR TO CONFIRM		
6	SYSTEM INSPECTION:			
	AT SUPPLIER'S WORKS			
6.1.1	Inspection at suppliers works before dispatch as per specification.	VENDOR TO CONFIRM		
6.1.2	Demonstration of all features of the Aero- caster system and all Accessories.	VENDOR TO CONFIRM		
	AT BHEL WORK'S			
6.2.1	Complete prove out of system shall be done by Vendor at BHEL works to the specified accuracy as per specification. Load for the proveout of system shall be provided by BHEL. Vendor shall be fully responsible for proveout of system as per BHEL requirements.	VENDOR TO CONFIRM		
7	TRAINING:			
7.1	BHEL engineers should be trained at BHEL JHANSI Works for 3 days period in the area of (a) Operation, use of all system features, supplied accessories etc. (b) Electrical, Electronic & maintenance for system & other supplied equipments	VENDOR TO CONFIRM		
7.2	The supplier shall provide training to BHEL electronics maintenance representative on PLC programming and on line troubleshooting of PLC model which is supplied.	VENDOR TO CONFIRM		
7.3	Air-fare/travelling expenses, boarding & lodging for theBHEL inspection team shall be borne by BHEL.	VENDOR TO CONFIRM		
7.4	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	VENDOR TO CONFIRM		

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7.5	Vendor to specify separately charges for 3 days training at his works if any.	VENDOR TO CONFIRM		
8	INSTALLATION & COMMISSIONING			
8.1	Supplier to take full responsibility for carrying out the start up and commissioning	VENDOR TO CONFIRM		
8.2	Successful proving on BHEL Transformer (weighing 250 Ton) by the supplier shall be considered as part of commissioning. Successful proving shall be considered by transportation of transformer from one place to another place i.e. from the routine testing area to impulse test area & vice-versa.	VENDOR TO CONFIRM		
8.3	Demonstration of all features of the Aero- caster system & all accessories to the satisfaction of BHEL for their efficient and effective use.	VENDOR TO CONFIRM		
8.4	Demonstration by actual use of all supplied items and accessories to their full capacity.	VENDOR TO CONFIRM		
8.5	Commissioning spares, required for commissioning of the system within stipulated time, shall be brought by the supplier on returnable basis.	VENDOR TO CONFIRM		
8.6	Schedule of Commissioning shall be submitted with the offer.	VENDOR TO CONFIRM & FURNISH		
8.7	Charges, duration, terms & conditions for Installation & Commissioning should be furnished in detail separately by vendor along with offer.	VENDOR TO CONFIRM & FURNISH		
9	AMBIENT CONDITIONS & THERMAL STABILITY :			
9.1	Total System and all supplied items should work trouble free and efficiently under following operating conditions and should give specified accuracies. Power Supply: Voltage: 415 V +/- 10 % , 3-Phase ,no neutral OR 230 V single -phase Frequency: 50 Hz ± 1.5 Hz Operating Humidity : 15% to 90% (Vendor to confirm that system is suitable for above).	VENDOR TO CONFIRM		
10	PACKING:			
10.1	Air worthy/Sea worthy & rigid packing for all items of complete system, all Accessories and other supplied items to avoid any damage/loss in transit. When system is despatched in containers, all small loose items shall be suitably packed in boxes.	VENDOR TO CONFIRM		
11	GUARANTEE :			
11.1	24 months from the date of commissioning of the system.	VENDOR TO CONFIRM		
12	GENERAL : The vendor should submit the following information with the offer:			
12.1	The mover should be prevented with a bumper of steel and a movable brush guard for preventing bodily injuries and loose objects from coming in under the mover.	VENDOR TO CONFIRM		
12.2	Equipment Make & Model	VENDOR TO FURNISH		
12.3	Total weight of the system	VENDOR TO FURNISH		
12.4	Total connected Electrical load(KVA)	VENDOR TO FURNISH		
12.5	Vendor to submit along with offer, the reference list of customers where such type of systems have been supplied, mentioning the name of customer, Machine Model, major specifications of the supplied system, Year of Supply etc.	VENDOR TO FURNISH		
12.6	Detailed catalogues, sketch/ photographs of the equipment and accessories/ attachments should be submitted with the offer.	VENDOR TO FURNISH		
12.7	Suggested inventory list of spares to be maintained by BHEL for satisfactory operation of the system beyond guarantee period, along with price of major items.	VENDOR TO FURNISH		
13	QUALIFYING CONDITIONS :			
13.1	Only OEM (Original equipment manufacturer) or their authorized indian agent(documentary support is required with offer) should quote, who have supplied and commissioned at least five number of aero caster transport systems of 250 Ton or higher capacity during the past ten years, (from the tender opening date)P.O.Copy & successful commissioning report is required.	VENDOR TO CONFIRM & FURNISH		
13.2	The following information is to be submitted by the vendor about the companies where similar air-cushion transport systems have been supplied. This is required from all the vendors for qualification of their offer.			
13.2a	Name of the customer / company where such type of air-cushion transport systems is installed. Copy of Purchase order should be furnished.	VENDOR TO FURNISH		
13.2b	Complete postal address of the customer/company	VENDOR TO SPECIFY		
13.2c	Year of commissioning (Copy of commissioning report should be furnished).	VENDOR TO FURNISH		
13.2d	Application for which the system is supplied .	VENDOR TO SPECIFY		
13.2e	Name, designation, Phone, email address of the contact person of the customer.	VENDOR TO SPECIFY		
13.2f	Performance certificate of min 02 no. aircaster supplied against point no. 13.1 for min 01 year after commissioning.	VENDOR TO SPECIFY		
14	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 NOTE		