

BHARAT HEAVY ELECTRICAL LIMITED					
RAMACHANDRAPURAM			Enquiry No. :		
UNIT'S ADDRESS:			Due Date :		
UNIT'S PHONE NOS.			Supplier Qtn. No.:		
CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEP'T.)			Date :		
SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR TRIPLEX PLUNGER PUMP. QUANTITY: 1 No					
NOTE;					
1. Vendor must submit complete information against clause nos. 14.0 The offer meeting this clause would only be processed.					
2. 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					
4. Only original equipment manufacturers to quote.					
5.0 Equipment from China, Korea and Taiwan are not preferred					
ADDRESS OF THE SUPPLIER :					
TELEPHONE NOS.:			TELEPHONE		
FAX NOS.:			FAX NOS.:		
E-MAIL ADDRESS :			E-MAIL		
SPECIFICATION FOR TRIPLEX PLUNGER PUMP. QUANTITY: 1 No.					
SNo.	Description for BHEL Requirement	REQUIRED	OFFERED	DEVIATIONS	REMARKS
1.0	PURPOSE:				
1.1	Horizontal and Portable, Reciprocating Type Hydraulic High pressure Triplex plunger pump for Hydro testing of Hydraulic High Pressure vessels.	Vendor to confirm			
2.0	MAIN PARAMETERS:				
2.1	Max Test Pressure: 1200 bar	Vendor to confirm			
2.2	Discharge capacity at 1200 bar: 12LPM	Vendor to confirm			
2.3	Type: Horizontal portable type	Vendor to confirm			
2.4	Model No and Type	Vendor to specify			
2.5	Medium of Testing: Water	Vendor to confirm			
2.6	Strokes per minute and RPM	Vendor to specify			
2.7	No. of Stages for pressurising the Medium(Water): Single Stage	Vendor to confirm			
2.8	Pump Body Material shall be IS 210 or SS304 Forged	Vendor to specify			
2.9	Pump head (Cylinder head, Valve chamber) shall be min EN-9 or better	Vendor to specify			
2.10	Plungers shall be coated with ceramic or tungsten carbide coating	Vendor to specify			
2.11	Crankshaft material steel grade EN24	Vendor to confirm			
2.12	Connecting rods shall be Forged Carbon steel Material	Vendor to confirm			

SNo.	Description for BHEL Requirement	REQUIRED	OFFERED	DEVIATIONS	REMARKS
2.13	Cross Head shall be made of Cast Iron/Forged steel	Vendor to confirm			
2.14	Valve and valve seating shall be SS with stellite valve seats	Vendor to confirm			
2.15	Sealing elements	Vendor to specify			
2.16	Glands shall be made of Gun Metal	Vendor to confirm			
2.17	Pressure Relief Valve shall be SS spring loaded	Vendor to confirm			
2.18	Safety valve shall be made of SS spring loaded	Vendor to confirm			
2.19	Isolating valve shall be made of SS	Vendor to confirm			
2.20	Pressure Regulator cum automatic unloader valve shall be made of SS. It shall have pressure gauge mountings fitted with two glycerine filled pressure gauges	Vendor to confirm			
2.21	Pressure gauges shall be glycerin filled with 4" dial and Range 0-1600 bar	Vendor to confirm			
2.22	Suction pipe shall have suitable suction strainer	Vendor to confirm			
2.23	The equipment shall have suitable suction Tank	Vendor to confirm			
2.24	Outlet pressure pipe shall be High pressure Hose pipe with 5/8 inch Swivel Nut of minimum 5 meter length and withstand pressure upto 1200 bar	Vendor to confirm			
3.0	Electrical Equipment				
3.1	Motor make shall be Kirloskar/CG/ABB/Seimens	Vendor to specify			
3.2	Motor KW, RPM	Vendor to specify			
3.3	Input Power Supply: Voltage : 415 V \pm 10% Frequency : 50 Hz \pm 5% No. of phases = 3 Ambient Conditions : Temperature = 5 to 50 degree celsius Relative Humidity = 95% Max.	Vendor to confirm			
3.4	Motors shall conform to IEC or Indian Standards	Vendor to confirm			
3.5	Electrical switch gear shall be of Siemens make	Vendor to confirm			
3.6	Motor starter shall be fixed rigidly to main Frame	Vendor to confirm			
3.7	Electrical wiring shall be conduited properly with glands and protected from water and any mechanical damages	Vendor to confirm			
3.8	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm			
3.9	Total connected load (KVA)	Vendor to specify			
3.10	All electrical / electronic equipment shall be tropicalized.	Vendor to confirm			
4.0	Reduction Gear box				
4.1	Gear box Make shall be Premier/Shanti/Allroyd	Vendor to Specify			
4.2	Coupling between Motor and Reduction gear box shall be rigid coupling. 'V' Belts and 'Timer' belt types are not acceptable.	Vendor to confirm			
4.3	Proper guarding shall be done for rotating parts	Vendor to confirm			

SNo.	Description for BHEL Requirement	REQUIRED	OFFERED	DEVIATIONS	REMARKS
4.4	Total pump shall be assembled on a Frame with Four Castor wheels/CI. Wheel Dia shall be minimum 300 mm with minimum 75 mm width. Draw bar shall also be provided for easy movements.	Vendor to confirm			
4.5	Lifting hooks 04 nos. are to be provided at suitable place for lifting and shifting of the pump.	Vendor to confirm			
5.0	SPARES to be supplied along with machine:				
5.1	Hydraulic sealing rings - 06 sets	Vendor to quote			
5.2	Packing kit - 04 sets	Vendor to quote			
5.3	Hydraulic Pressure pipes 5 meter long with 5/8 inch swivel nut to withstand the pressure upto 1200 bar- 04 nos.	Vendor to quote			
5.4	Suction valves set - 01 nos.	Vendor to quote			
5.5	Delivery valves set - 01 nos.	Vendor to quote			
6.0	AMBIENT CONDITIONS & THERMAL STABILITY :				
6.1	Pump should work trouble free and efficiently under following operating conditions in dusty fabrication shop. Input Power Supply: Voltage : 415 V \pm 10% Frequency : 50 Hz \pm 5% No. of phases = 3 Ambient Conditions : Temperature = 5 to 50 degree celsius Relative Humidity = 95% Max.	Vendor to confirm			
7.0	ENVIRONMENTAL PERFORMANCE OF THE ROTATOR :				
7.1	Maximum noise level shall be < 85 dB at normal load condition.	Vendor to confirm			
8.0	SAFETY ARRANGEMENTS:				
8.1	Equipment should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator during loading & unloading of job. Suitable protective covers to be provided where necessary.	Vendor to confirm & describe the interlocks and safety measures			
9.0	INSPECTION:				
9.1	Pump Testing procedure shall be submitted along with the offer	Vendor to submit			
9.2	PREDISPATCH INSPECTION : BHEL Engineers will inspect the equipment at vendor's works. The vendor shall demonstrate the equipment for its proper functioning prior to dispatch.	Vendor to confirm			
10	Erection and commissioning by vendor at BHEL works	Vendor to confirm			
10.1	Prove out : Prove out of the pump at BHEL works on Job provided by BHEL	Vendor to confirm			
10.2	TRAINING : for BHEL Production and Maintenance personnel at BHEL works after commissioning	Vendor to confirm			

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11.0	GUARANTEE: The equipment shall be guaranteed for 24 months from the date of commissioning.	Vendor to confirm			
12.0	QUOTATION: Along with technical offer, the firm to submit point to point answers to our specification with all relevant / supporting data.	Vendor to confirm			
13.0	GENERAL :				
13.1	Technical Catalogue to be furnished. It shall be with information about the parts used. General Blow out diagram is to be provided of the part nos. for easy reference. Vendor to list all the bought out items used in the assembly.	Vendor to furnish			
13.2	Spares : spares for 2 years normal operation to be quoted separately - item wise , with break up.	Vendor to confirm			
13.3	Total weight of the equipment.	Vendor to specify			
13.4	Painting of equipment : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to confirm			
13.5	General assembly drawing of the rotator to be provided along with the offer	Vendor to furnish			
14.0	REFERENCE LIST / QUALIFYING CONDITIONS:	Vendor to furnish			
14.1	Only those vendors, who have supplied and commissioned atleast one of same or higher capacity for similar applications in the past ten years and such Pump is working satisfactorily for more than one year, after commissioning should quote. The following information should be submitted by the vendor about the companies where similar Pump have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to furnish			
14.2	Name of the customer / company where similar machine is installed.	Vendor to furnish			
14.3	Complete postal address of the customer.	Vendor to furnish			
14.4	Year of commissioning.	Vendor to furnish			
14.5	Phone, FAX no. and email address of the contact person of the customer.	Vendor to furnish			
14.6	Copy of PO from customer and performance certificate from customer for similar or higher capacity equipment	Vendor to furnish			
15.0	DELIVERY in months:	Vendor to specify			
16.0	DOCUMENTS : 5 Sets of operating and maintenance manuals in English for complete system with electrical, electronics and general arrangement drawings shall be furnished along with the equipment.	Vendor to furnish			