

**BHARAT HEAVY ELECTRICAL LIMITED**

UNIT'S ADDRESS:

CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL
(FROM PURCHASE DEPTT.)

Enquiry No. :

Due Date :

Supplier Qtn. No.:

SPECIFICATION OIL PURIFIER

NOTE:-

1. The "Offered" Column and where applicable, the 'deviations' and '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 Specification/Requirement shall be treated as non compliance.
2. The offer and all document in enclosed with offer should be in English language only.
3. All the supplied accessories Shall supplied from OEM only

NAME & ADDRESS OF THE SUPPLIER :

TELEPHONE NOS.:

FAX NOS.:

E-MAIL ADDRESS :

SCOPE: Supply, Oil Purifier. Complying with specifications as below:

SL. NO	DESCRIPTION OF BHEL REQUIREMENT	SPECIFIED/ TO BE CONFIRMED BY	OFFERED	DEVIATIONS	REMARKS
1.0	<u>PURPOSE</u>				
1.1	Oil purifier required for the purification of mineral lubrication oil to ISO VG 46/ISO VG 68/ IOC Servo prime 57 or equivalent. The lubricating oil may contain free and dissolved moisture, suspended impurities such as cotton waste, welding slag & spatters, metallic chips, small sand particles, iron filings, pebbles, dust and pipe scales etc. The offered equipment should be sturdy enough so as not to be damaged by the flow of oil containing such impurities. The oil may also contain grease and kerosene, which are required to be removed by the purifier	Vendor to confirm			
2.0	<u>LEVEL OF PURIFICATION REQUIRED</u>				
2.1	Purification of mineral lubrication oil to ISO VG 46/ISO VG 68/ IOC Servo prime 57 or equivalent.	Vendor confirm			
2.2	Capacity 600 lph	Vendor to confirm			
2.3	Purifier should be capable of reducing the dissolved moisture content in the lubricating oil from a level of 2000 PPM ($\pm 10\%$) to 200 PPM maximum in Not More Than Two Passes, as measured by Karl Fischer equipment with a throughput	Vendor to confirm			
2.4	The size of the suspended particles in the purified oil shall not be greater than 5 microns.	Vendor to confirm			

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Signature
अमित कछवाहा AMIT KACHHA
उप प्रबंधक / Deputy Manager
सी.एम.एफ. (इंजिनियरिंग एवं जी.जी.)

2.5	The oil purifier shall be capable of operating for 10 days at a stretch, provided the sludge holding capacity of the Unit is not exceeded. Strainers of Duplex type with cleanable type of elements shall be provided at inlet. Alternatively, two simplex type strainers with isolating valves shall be provided. Differential pressure gauge with proper marking, to be provided at both ends to indicate strainer choking.	Vendor to confirm				
2.6	All filter elements shall be of cleanable and replaceable type. Two additional sets of filter elements as spares shall be included in the offer.	Vendor to confirm				
2.7	OIL TEMPERATURE: The purified oil temperature leaving the purifier shall not exceed 60° c. The oil inlet to purifier can be as low as 10°c.	Vendor to confirm				
2.8	The purifier unit shall be capable of operating against a suction lift of 4 meters minimum and capable of discharging oil against a head of 15 meters minimum.	Vendor to confirm				
3	SUCTION AND DISCHARGE CAPACITY					
3.1	The purifier unit shall be capable of operating against a suction lift of 4 meters minimum and capable of discharging oil against a head of 15 meters minimum.	Vendor to confirm				
4	PURIFICATION SYSTEM					
4.1	The complete purification system with necessary controls and annunciation shall be centrifuge type. If required Vacuum pumping system may also be added to centrifuge to achieve desired level of purification as clause 2.3. The scheme of purification, necessary controls, overall size of the equipment shall be furnished with the quotation.	Vendor to submit the details				
4.2	The complete purification unit shall be mounted on a trolley with four castor wheels and a towing bar to make it portable. Fragile material such as glass should not be used anywhere in the equipment. However, unbreakable glass/ plastic may be used if required. An engraved anodized aluminium instruction plate shall be mounted on the control panel. The equipment should have. (a) Lifting provision on trolley for transporting the equipment to different floors as required (b) Tray with drain for collecting split oil (c) Jack screws for locking trolley in position	Vendor confirm				
5.0	FLEXIBLE HOSES					

5.1	Two numbers oil resistant synthetic rubber flexible hoses with flanged ends, each 10-meter long, suitable for 4 kg/cm ² pressure at 70°C temperature of oil, shall be supplied with the purifier. The hoses shall be of suitable size with flanges as per IS 6392 Table-17.	Vendor confirm				
6.0	INLET AND OUTLET CONNECTIONS					
6.1	The inlet and outlet ports of oil purifier shall have flanges as per IS 6392 Table-17	Vendor confirm				
7.0	GENERAL DETAIL					
7.1	Item Make & Model no	Vendor to submit the details				
8	OIL CIRCULATING PUMPS					
8.1	The oil circulating pumps of positive displacement type, used in the equipment shall be of reputed make like Dowty / Rexroth/Rotofluid/ Maneklal / Delta Corp.	Vendor confirm				
9.0	MOTORS					
9.1	The motors used in oil purifier shall be of reputed make like AEI / NGEF / Kirloskar /Crompton /HBB, TEFC type with at least class B insulation, suitable for 3 phase A.C. supply of 415 ± 10% volts, 50 Hz. The motor shall be capable of withstanding an over frequency of 20%, for 1 minute.	Vendor confirm				
10.0	INSPECTION , TESTING AND QUALITY CHECKS					
10.1	Following tests shall be carried out on the unit at supplier's works in presence of BHEL /THIRD PARTY representative and test certificates furnished to that effect. Three weeks advance notice shall be given to BHEL for this purpose.	Vendor confirm				
10.2	(a) Flow Capacity determination test.	Vendor confirm				
10.3	(b) Suction and Discharge capacity test.	Vendor to confirm				
10.4	(c) Moisture removal capacity test. (Testing of oil sample collected in presence of BHEL representative, before and after purification, is to be tested by the party from recognized laboratory and from his own.)	Vendor to confirm				
10.5	(d) Current, voltage and other electrical parameters of motor and heater.	Vendor confirm				
10.6	(e) Control panel interlock and fault simulation test.	Vendor confirm				
10.7	(f) Insulation resistance test on control panel and electric heater.	Vendor confirm				
10.8	(g) High voltage test at 2 kV AC for 1 minute on control panel and dielectric heater.	Vendor to confirm				

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10.9	(h) The hosepipe shall be tested for a pressure of 6 Kg /cm2 .for 1 hour.	Vendor confirm				
10.10.	(i) Test certificates for Motor and pump used in the Purifier.	Vendor confirm				
11.0	INFORMATION REQUIRED FROM SUPPLIER					
11.1	(A) WITH OFFER					
11.1.1	(a) Three copies of outline drawings showing overall dimensions and weight of the equipment.	Vendor confirm				
11.1.2	(b) Flow diagram of the offered system	Vendor confirm				
11.1.3	(c) The vendor shall submit the design calculation covering at least the following for review / acceptance of BHEL/ Customer: (i) Calculation for selecting the pumping capacity of the pumps (ii) Size of degassing chamber. (iii) Capacity of the heater (iv) Total Power requirement (v) Other relevant calculations	Vendor to submit the details				
11.1.4	(d) Technical literature in triplicate.	Vendor confirm				
11.1.5	(e) List of standard spares and special tools.	Vendor confirm				
11.1.6	(f) Deviations if any from the specification.	Vendor confirm				
11.1.7	(g) Details of painting and protection of equipment and pipelines – inside and outside surfaces to be furnished.	Vendor confirm				
11.2	(B) AFTER RECEIPT OF P.O.					
11.2.1	(a) Three copies of manufacturing drawing of equipment and control panel for approval	Vendor confirm				
11.2.2	(b) Three copies of technical literature of all bought out items to be furnished.	Vendor confirm				
11.2.3	(c) Three copies of Quality Surveillance Plan (QSP), clearly giving details of tests to be conducted on the equipment and the standard to which it conforms, for approval by BHEL.	Vendor confirm				
11.3	(C) With SUPPLY					
11.3.1	(a) O & M manuals, test certificates etc shall be supplied as per enclosed special conditions/	Vendor confirm				
12.0	PAINTING					
12.1	The unit shall be painted with light grey (colour shade 631 of IS: 5 latest version) glossy finish paint on all external parts after due removal of rust and cleaning.	Vendor confirm				
13.0	PACKING					

13.1	Prior to shipping, all threaded openings shall be closed with standard pipe plugs. Flanged openings shall be protected with blind flanges with gaskets bolted in position. The Equipment shall be first covered in polythene bag before final wooden packing. The weather proof packaging shall be suitable for train/ Road transport and rough handling and loose shunting, during transit and shall also be suitable for long term and open storage of the equipment.	Vendor confirm				
14.0	GUARANTEE					
14.1	The equipment shall be warranted for a period of 24 month after commissioning	Vendor confirm				
15.0	DOCUMENTATION					
15.1	Following documents shall be supplied to BHEL, Bhopal in hard copies and in electronic form i.e. compact disc (CD) compatible with latest PCs. In addition to above 2 hard copy shall be supplied with each supply of the equipment. (i) Test certificate : 5 copies (ii) Gurantee certificate : 5 copies (iii) packing list : 5 copies (iv) O & M Manual : 5 copies (In English Language)	Vendor confirm				
15.2	O & M manual must contain OGA / Schematic / Mounting/ Electrical circuit diagram /foundation drawings /storage & handling instructions and circuit / details of components (as applicable). It should also contain DOs, DONTs, Trouble shooting and component / cards check points.	Vendor confirm				
16	DRAWINGS :					
16.1	The outline dimensional drawing including mounting arrangement, schematic block diagram, weight, Bill of material etc. shall be supplied within 4 weeks from the date of ordering for reference and comments.	Vendor confirm				
17	SPARES :					
17.1	Itemized breakup of Mechanical, Electrical and Electronic spares used on the machine and its spares price , which to be fixed for next 2 years. This is required to be used as a reference for future procurement only and shall not be used for arriving at the L1 offer.	vendor to specify and quote				
18	QUALIFYING CONDITIONS :	Vendor to submit the details				

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18.1	Offer of only those vendors will be considered who have supplied (either OEM or AUTHORIZED dealer of OEM) and installed at least 1 numbers of number of Oil Purifier of enquired size or more in last 5 years and it is working satisfactorily for at least one year after supply the machine. Supporting documents like copy of purchase order / original performance certificate from the customer, is to be submitted along with the former.	Vendor to submit the details				
18.2	i) Name of the company / customer, where Oil Purifier of enquired size or more(s) is (are) installed	Vendor to submit the details				
18.3	ii) Complete postal address of the company / customer	Vendor to submit the details				
18.4	iii) Year of supply	Vendor to submit the details				
18.5	iv) Application for which the machine is installed	Vendor to submit the details				
18.6	v) Name and designation of the contact person of the company / customer	Vendor to submit the details				
18.7	Vi) Performance Certificate from user where Oil Purifier supplied by OEM or Authorized dealer of OEM.	Vendor to submit the details				
18.8	VII) Vendor must be OEM or Authorized Dealer of OEM	Vendor to submit the details				
18.9	VIII) BHEL has right to confirm the performance from the user , where such machine is supplied by either by OEM or its authroized dealer. In case of negative feedback , BHEL has right to Reject the technical bid of Vendor	Vendor to submit the details				

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