

	<b><u>BHARAT HEAVY ELECTRICAL LIMITED</u></b>		
	BAP RANIPET 632406		
	<u>UNIT'S PHONE NOS.</u>		
	<u>CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPTT.)</u>		
<b><u>SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR</u></b>			
<b><u>WET MAGNETIC PARTICLE TESTING EQUIPMENT WITH DEMAGNETISATION FACILITY.</u></b>			
<b>NOTE:-</b>			
1. Vendor must submit complete information against clause no. 9 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.			
<b>ADDRESS OF THE SUPPLIER :</b>		<b>ADDRESS OF THE INDIAN AGENTS :</b>	
<b>TELEPHONE NOS.:</b>		<b>TELEPHONE NOS.:</b>	
<b>FAX NOS.:</b>		<b>FAX NOS.:</b>	
<b>E-MAIL ADDRESS :</b>		<b>E-MAIL ADDRESS :</b>	
<b>SCOPE: SUPPLY AND COMMISSIONING OF WET MAGNETIC PARTICLE TESTING EQUIPMENT WITH DEMAGNETISATION FACILITY</b>			

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED
1.0	<b>PURPOSE OF THE EQUIPMENT</b>		
1.1	Wet Magnetic Particle Inspection of machined components of Impeller Main shafts, Blade shafts, Locknuts and Cast Iron Blades with demagnetisation facility as per <b>ASTM E 1444 standard and ASME Section V Article 7.</b>	Vendor to note and inform the working principle	
1.2	Vendor is allowed to visit our works to understand the job requirement before submitting the offer.	Vendor to note	
2.0	<b>SCOPE</b>		
2.1	Supply and commissioning of the equipment at BHEL, Ranipet works including training.	Vendor to confirm	
2.2	The details of the components to be tested are given in Annexure-A	Vendor to note	
3.0	<b>SPECIFICATION:</b>		
3.1	<i>Current output: HWDC/AC as per componets mentioned in Annexure-A</i>	Vendor to specify	
3.2	Type of Magnetisation	Circular and Longitudinal	Vendor to specify
3.3	Duty Cycle	Vendor to specify	
3.4	Clamping device & mounting principle	Vendor to provide and submit details.	
3.5	Built in demagnetistion facility in the equipment	Vendor to confirm	
3.6	Input supply: 415V/50Hz Three phase	Vendor to note	
3.7	Tapping for inspection lamp	Vendor to provide	
3.8	Cooling arrangement for the machine	Vendor to provide	
3.9	Infinitely variable magnetising current control unit system display facility.	Vendor to confirm	
4.0	<b>ESSENTIAL ACCESSORIES</b>		
4.1	UV/ Black light with high intensity lamp and Koop Glass filter with wave length as per standard and minimum Intensity of 1000 Microwatt/cm2. <b>Quantity - 2 Nos.</b>	Vendor to offer with details.	

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4.2	Lux meter with calibration certificates. <b>Quantity - 2 Nos.</b>	Vendor to offer with details.	
4.3	Fluorescent meter with calibration certificates. <b>Quantity - 2 Nos.</b>	Vendor to offer with details.	
4.4	ASTM Pie Gauge Field Indicator : <b>Quantity - 5 Nos.</b>	Vendor to offer with details.	
4.5	ANSI Ketos steel tool ring with copper conductor with minimum length of 300 mm <b>Quantity - 1 No.</b>	Vendor to offer with details.	
4.6	Residual field indicator with calibration certificate. <b>Quantity - 02 Nos</b>	Vendor to offer with details.	
4.7	Black Hood for fluorescent inspection <b>Quantity - 2 Nos.</b>	Vendor to offer with details.	
4.8	Fluorescent Bulbs. <b>Quantity - 5 Nos.</b>	Vendor to offer with details.	
4.9	Tool kit for regular maintenance. <b>Quantity - 1 No.</b>	Vendor to offer with details.	
5.0	<b>SPARES AND CONSUMABLES:</b>		
5.1	Spares for five years of trouble free operation with itemised break up (unpriced bid) shall be quoted.	Vendor to quote	
5.2	MPI consumables: a) Magnetic powder for wet application 10 kgs . b) Fluorescent powder 5 Kgs should be supplied along with the machine.	Vendor to confirm	
5.3	Any other critical spares to be listed down and same to be quoted by the vendor.	vendor to quote	
6.0	<b>PRE-DESPATCH INSPECTION AND TRAINING</b>		
6.1	Pre-despatch inspection shall be arranged at supplier's work	Vendor to confirm	
6.2	Free of cost training at BHEL, BAP, Ranipet two man days on operation and maintenance of MPI equipment for five persons	Vendor to confirm	
6.3	Guarantee: 24 Months from date of commissioning	Vendor to confirm	
6.4	Service after Sales during and after guarantee period	Vendor to specify	
7.0	<b>ERECTION AND COMMISSIONING</b>		
7.1	Vendor shall commission the above equipment at BHEL BAP Ranipet and prove its performance for its full capacity	Vendor to confirm	
8.0	<b>DOCUMENTATION: Following documents shall be supplied by the vendor</b>		
8.1	Operating instruction manual - in English - 5 copies	Vendor to confirm	
8.2	Maintenance manual - including circuit diagrams- in English - 5 copies	Vendor to confirm	
8.3	Calibration certificates for gauss meter, Lux meter and Fluorescent meter.	Vendor to confirm	
8.4	Test report for internal circuit check/drawings	Vendor to confirm	
8.5	Dimensional & Calibration report for Magnetic particle field indicator as per ASTM E1444	Vendor to confirm	

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED
9.0	<b>QUALIFYING CONDITIONS/ REFERENCE LIST:</b>		
9.1	Only those vendors who have supplied and commissioned at least one same or higher capacity equipment for similar application and such equipment is working satisfactorily for more than two years after commissioning (as on date of opening the tender), should quote. However, if referred equipment is supplied to BHEL, then referred equipment should be presently working satisfactorily for more than one year after its commissioning and acceptance in BHEL should quote. The following details of such customer with contact person/s' details, order copies and performance certificate of the referred equipment are required to <b>qualify their offer.</b>	Vendor to confirm	
9.2	Name of the customer/ company where referred machine is installed.	Vendor to inform.	
9.3	Complete postal address of the customer	Vendor to inform.	
9.4	Month and year of commissioning.	Vendor to inform.	
9.5	Parameters of equipment supplied and application for which the equipment is supplied..	Vendor to inform.	
9.6	Name and designation of the contact person of the customer.	Vendor to inform.	
9.7	Phone, FAX no. and email address of the contact person of the customer.	Vendor to inform.	
9.8	Performance certificate from the customers regarding satisfactory performance of equipment ( same or higher capacity) indicating date of commissioning, model no, capacity etc., supplied to them.	Vendor to submit.	
9.9	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.	Vendor to accept & confirm.	
10.0	<b>GENERAL REQUIREMENT</b>		
10.1	Dimension of the Equipment(L X B X H)	Vendor to specify	
10.2	Floor space requirement	Vendor to specify	
10.3	Delivery period in months	Vendor to specify	
10.4	Power requirement	Vendor to specify	
11.0	<b>SAFETY REQUIREMENT</b>		
11.1	Machine should have adequate safety protection like thermal cut-off from over heating, over load protection etc..	Vendor to confirm	
	Kaushal Kumar	M S Ravikumar	N Kangeyan
	Engineer/NDT	SM/QC	DGM/QC
			B Srinivasa Rao
			AGM/Q

<b>WET MPI MACHINE SPECIFICATION</b>						
					<b>Annexure-A</b>	
<b>Details of the Jobs to be tested using WET MPI Equipment</b>						
<b>Description of components</b>	<b>Max Length (in mm)</b>	<b>Max Diameter (in mm)</b>	<b>Min Length (in mm)</b>	<b>Min Diameter (in mm)</b>	<b>Weight(apprx)</b>	<b>Fig Ref.</b>
Forged Main Shafts (machined)	2200.0	400	917	155	1.7 Ton	Fig-1
Blade Shaft (machined)	850.0	250	350	90	60 Kg	Fig-2
Lock nut	100.0	250	70	90	40 Kg	Fig-3
Cast Iron Blades	800.0	270	-		80 Kg	Fig-4

**Fig-1 Forged Main Shaft**



**Fig-2 Blade Shats**



**Fig 3 Lock Nut**



**4. Cast Iron Blade**

