

## TECHNICAL SPECIFICATION OF COLD STORAGE FOR TXM DIVISION BHEL Bhopal

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	Remarks
1	<b>PURPOSE &amp; WORK MATERIAL</b>		
	<b>Purpose: (Operations/Jobs involved) :Storage of insulating varnish, special paint,etc at temperature range of 4°C to 15°C till the material is used for manufacturing of traction motors in the shop.</b>	Vendor to confirm	Our Design to Achieve Temperature as per data given from your side . PI Specify if your special requirement
2	<b>Technical details</b>		
2.1	<b>Features</b>		
2.1.1	The cold storage facility shall have a walk-in storage room and to be cooled with two cooling units working alternately keeping one unit in standby. The facility shall have microprocessor based control system located at one place.	Vendor to confirm	We are offering one unit as a stand by.For Microprocessor Controllers pl refer of technical cataloug
2.1.2	The cold storage should be of robust design , easy in operation and trouble free service	Vendor to confirm	Yes
2.1.3	The cold storage facility should be able to work continuously at the ambient temperature and humidity at preset temperaure.	Vendor to confirm	Ok ( As per the Basis Of Design)
2.1.4	The cold storage should be fitted with suitable door for easy entry/exit of store personnel. The door should be provided with lock.	Vendor to specify.	Ok ( PI Find Attach Snap )
2.2	<b>Performance:</b>	Vendor to confirm	
2.2.1	The cold storage should be able to give the guaranteed performance within the desired tolerance limits specified.	Vendor to confirm	( +/-) 2 Degree C
2.2.2	The cold storage should conform to the relevant standards	Vendor to specify.	Ok
2.3	<b>Specifications of Cold storage</b>		
2.3.1	Walk-in cold storage room dimension: 12' (l)x20 (b)'x7' (h) approximately	Vendor to specify.	YES
2.3.2	Construction of door: Flush type	Vendor to confirm	Ok ( PI Find Attach Snap )
2.3.3	Range of room temperature required to be maintained: 4°C to 15°C	Vendor to confirm	Ok ( As per the Basis Of Design)
2.3.4	Insulation type for chiller room : PUF with GI sheets inside & outside. Floor to have PUF slab with bitumen and tarfelt.	Vendor to confirm	Ok
2.3.5	Ambient temperature: 50°C Ambient relative humidity: 98% max	Vendor to confirm	Ambient temperature condition cannot be altered in the spec Please quote taking this factor into account
2.3.6	Incoming product temperature : 30°C ± 2	Vendor to confirm	The incoming Product Temperature should given by your end
2.3.7	Pull down time : less than 24 hrs from ambient temperature of 30°C to 4°C	Vendor to specify.	Pulldown Times means the product will achieve the temperature within this time>say for your incoming ujj is 30 degree will achieve the tem 10 degree within 24 Hours
2.3.8	Cooling capacity: at least 15000 btu/hr at 4°C and ambient temperature 35°C	Vendor to specify.	Ok ( PI refer our cataloug of Refrigeration Unit )
2.3.9	No of cooling units for the cold storage room : Two	Vendor to confirm	Ok ( As per the Basis Of Design)
2.3.10	Refrigerant: R22	Vendor to specify.	Ok
2.3.11	Type of compressor used: hermetically sealed	Vendor to specify.	Ok

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<b>2.4</b>	<b>ELECTRIC &amp; ELECTRONIC SYSTEM:</b>		
2.4.1	Single point of 415V $\pm$ 10% , 50 HZ $\pm$ 3 % Phase AC ( 3 wire system without neutral ) Power Supply near the equipment as per layout recommended by Vendor. All types of cables, connections, circuits breaker, stepdown transformer, etc. required for connecting BHEL 's power supply point to different parts of the equipment shall be arranged by the vendor.	Vendor to confirm	Main supply will given by BHEL and rest of all wiring is in Blue star Scope
2.4.2	All controls are to be microprocessor based and centralised in a dust & water proof control panel. Control & power cables should be of stranded copper, PVC, properly ferruled and numbered.	Vendor to confirm	As per BSL standard
2.4.3	Microprocessor based control should include audio-visual alarm, fault indication system	Vendor to specify.	Pl refer our catalogue and attach file for control
2.4.4	Proper earthing for the machine and its peripherals shall be there.	Vendor to confirm	ok
2.4.5	All the electrical & electronic items should be suitably tropicalised to ambient temperature of 50°C	Vendor to confirm	ok
2.4.6	The motors should be of SIEMENS, Crompton, GEC or NGEF make and have insulation to suit type & duty of instrument.	Vendor to confirm	As per BSL standard
<b>3</b>	<b>Facilities available at site</b>		
	Vendor should confirm adequacy of the following facilities available at the site (a) Single point of 415V $\pm$ 10% , 50 HZ $\pm$ 3 % Phase AC ( 3 wire system without neutral ) (b) Compressed air (moist) at 4 Kg/cm <sup>2</sup> (c) Overhead crane	Vendor to confirm	
<b>4</b>	<b>SAFETY ARRANGEMENTS</b>		
	Suitable safety devices like mechanical guards, mechanical/electrical/electronic interlocks and safety measures and audio visual alarms and signals, should be provided wherever necessary to prevent the equipment from damage/mis-handling and for safety of the operator. The safety arrangement should conform to relevant standards and reference of the same should be given in the offer along with technical details.	Vendor to specify	Please specify the safety standards followed world over and how the same are being followed in the offered equipment
<b>5</b>	<b>Optional Accessories( if any )</b>	Vendor to specify	
<b>6</b>	<b>SPARES:</b>		
6.1	Itemised breakup of mechanical, electrical and electronic spares used on the machine in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on continuous running basis should be offered by vendor.	Vendor to specify	In warranty period we offer four PMS and any breakdown call. While for second year the AMC charge will differ at actual

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6.2	All types of spares for total machine and accessories should be available for atleast ten years after supply of the machine. If machine or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts details of spares & suppliers to enable BHEL to procure these in advance, if required.	Vendor to confirm	Due to continous product development the specifications and features will change time to time
6.3	Vendor to confirm that complete list of spares for machine and accessories, along with specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine	Vendor to specify	ok
<b>7</b>	<b>Inspection</b>		
	The equipment shall be inspected and tested completely at the manufacturer's works prior to dispatch and in presence of BHEL representatives.	Vendor to confirm	Ok
<b>8</b>	<b>Painting</b>		
	Machine shall be painted with two coats of primer followed with two coats of Verdigris green colour no- 280 to IS-5, Final coat shall be done after erection.	Vendor to confirm	As per BSL standard
<b>9</b>	<b>DOCUMENTATION :</b> Five sets of following documents (Hard copies) in English language should be supplied along with the machine	Vendor to confirm	OK
9.1	Operating and maintenance manuals of Machine and supplied accessories.	Vendor to confirm	Ok
9.2	Detailed Maintenance manual of machine which shall contain System Description, Block diagram, Schematic drawings, Circuit digrams & hardware details of PCB's, diagrams of PLC & MMI. Trouble shooting charts, All Assembly/ Sub Assembly Drawings shall be supplied with the part list	Vendor to confirm	
9.3	One additional set of all the above documentation on CD ROM, wherever possible.	Vendor to confirm	Ok
9.4	Chart of Do & Don't should provided alongwith maintenance manual	Vendor to confirm	
<b>10</b>	<b>Erection commissioning and proving of machine</b>		
10.1	Separate lump-sum charges for erection, commissioning and proving should be indicated in the offer.	Vendor to confirm	ok
10.2	Actual job shall be proved at Bhopal in all respect for accuracy and performance during commissioning. Special tools for machine proving if any shall be brought by the supplier.	Vendor to confirm	ok
10.3	Supplier will be solely responsible for the eraction, commissioning and proving the machine at BHEL works.	Vendor to confirm	ok
10.4	During erection & commissioning, BHEL operators & engineers will be trained by your experts/ engineers.	Vendor to confirm	
10.5	First fill oils & consumables should be supplied with the machine.	Vendor to confirm	Not Applicable
10.6	The equipment shall be supplied with levelling/aligning jacks, base platess, foundation bolts, anchoring material,etc.	Vendor to confirm	As per BSL standard

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11	<b>PACKING:</b> Sea worthy & rigid packing for all items of complete equipment.	Vendor to confirm	As per BSL standard
12	<b>GUARANTEE :</b> 12 months from the date of acceptance of the machine.	Vendor to confirm	Ok
13	<b>GENERAL : The vendor should submit the follow ing information:</b>		
13.1	Machine Model	Vendor to specify	As per our technical Catalouge
13.2	Total connected load (KVA):	Vendor to specify	As per our technical Catalouge
13.3	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify	As per our technical Catalouge
13.4	Total weight of the machine	Vendor to specify	As per our technical Catalouge
13.5	Detailed catalogues , sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Vendor to confirm	ok
13.6	The details of foundation/flooring requirement.	Vendor to specify	This is required by us to estimate the civil work required for the equipment
14	<b>QUALIFYING CONDITIONS :</b>		
14.1	The party should have supplied at least two cold storage units of similar or higher capacity in the past ten years and such machine is presently working satisfactorily for more than three years after commissioning would be quoted in the tender.	Vendor to specify	
14.2	Name of the customer / company where similar machine is installed/ supplied.	Vendor to specify	Alstom/Lupin
14.3	Complete postal address of the customer.	Vendor to specify	Blue Star Ltd. Ramkrishna Chambers, 7th Floor, Productivity Road, Alkapuri, Baroda - 390007
14.4	Year of commissioning.	Vendor to specify	
14.5	Application for which the machine is supplied with details of accuracies achieved on the job.	Vendor to specify	Storage
14.6	Name and designation of the contact person of the customer.	Vendor to specify	Manan Fumakia - Asst Manger Sales- Cold Storage
14.7	Phone, FAX no. and email address of the contact person of the customer.	Vendor to specify	0265-6614000, 9979878031
14.8	Performance certificate from the customers regarding satisfactory performance of machine supplied to them .	Vendor to specify	Ok