

TECHNICAL SPECIFICATIONS OF "SCREW TYPE AIR COMPRESSOR UNIT"

SCOPE:	SUPPLY, ERECTION & COMMISSIONING OF 3 NOS. "SCREW TYPE AIR COMPRESSOR UNIT" COMPLYING WITH SPECIFICATIONS FOR EACH COMPRESSOR UNIT AS BELOW :				
SL. NO.	DESCRIPTION OF BHEL REQUIREMENT	REQUIRED	OFFERED	DEVIATION	REMARKS
1.0	PURPOSE:				
1.1	"Screw Type Air Compressor Unit" consisting of Screw Type Air Compressor, Air Dryer, Air Filters, Air Receiver and Valves etc. as per the following specifications is required to supply dry and clean compressed air in manufacturing shop, for the operation of different equipments.	Vendor to offer			
2.0	SPECIFICATIONS: "Screw Type Air Compressor Unit" consists of following with specifications given against each.	Vendor to offer			
2.1	SCREW TYPE AIR COMPRESSOR:	Vendor to offer			
2.1.1	Air delivery (minimum)	1465 CFM			
2.1.2	Maximum Pressure	10 Kg. / Sq. Cm. (or more)			
2.1.3	Working Pressure (minimum)	9 Kg. / Sq. Cm.			
2.1.4	No. of stages	One (or more)			
2.1.5	Motor Power	200 KW (or more)			
2.1.6	Operating Voltage	3 Phase, 415 V			
2.1.7	Suitable for continuous duty	Vendor to confirm			
2.2	AIR DRYER: Refrigerated type Air Dryer, suitable for application of the above Compressor to deliver dry compressed air of the required quality.	Vendor to offer and submit details			
2.3	AIR FILTERS: Set of suitable Air Filters consisting of Pre-Filter, Fine Filter and Carbon Filter for application of the above Compressor to deliver dry and clean compressed air of the required quality	Vendor to offer and submit details			
2.4	AIR RECEIVER:				
2.4.1	Capacity (minimum)	5000 Litres			
2.4.2	Max. Working Pressure	12.5 Kg / Sq. Cm. (or more)			
2.4.3	Confirming to ASME Section VIII, Div.1 / IS 2625 Norms or equivalent	Vendor to confirm			

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2.5	NOISE PROOF CANOPY:				
2.5.1	Suitable Noise Proof Canopy to cover Air Compressor and Drier to reduce noise level.	Vendor to offer			
2.5.2	Size and details of Canopy	Vendor to submit details			
2.6	FIRST FILLING OF OILS / REFRIGERANT				
2.6.1	First filling of all required Oils, Grease and Refrigerant etc. required for the Compressor and other items like Air Filter, Air Drier and Air Receiver etc., to be supplied by vendor. Manufacturer's details / codes to be submitted by the vendor.	Vendor to offer			
2.7	Zero Air Loss Automatic Drain Valve:				
2.7.1	Zero Air Loss Automatic Drain Valve for draining condensed air from the Dryer.	Vendor to offer			
2.8	OTHER ITEMS:				
2.8.1	Necessary Hoses and Pipes in required length and size, Connectors and Valves required between Compressor, Air Dryer and Filters to be supplied with the equipment	Vendor to offer			
3.0	QUALITY OF DELIVERED AIR: Compressor unit should deliver compressed air according to ISO - 8573-1, having the following parameters of compressed air.	Vendor to confirm			
3.1	Pressure Dew Point	3 - 4 Degree Celsius			
3.2	Max. Ambient Temperature	50 Degree Celsius			
3.3	Solid Particle / Dust	Class - I			
3.4	Humidity	Class - IV			
3.5	Oil Content	Class - I			
4.0	REQUIREMENT FOR ELECTRICAL EQUIPMENT				
4.1	Voltage = 415V +10% / -10% , Frequency= 50Hz +3 / -3 , No. of phases = 3 phase with neutral. Power Supply source, as above, will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets including Voltage Stabilizer, Transformer & Air-Compressor etc. shall be the responsibility of vendor. Requirement of grounding/earthling with required material details should be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor to accept & offer			

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5.0	ENVIRONMENTAL PERFORMANCE OF THE MACHINE : The Machine should conform to following factors related to environment :	Vendor to offer			
5.1	Maximum noise level shall be 85 dB(A) at normal load condition, 1 meter away from the Compressor Unit. This will be measured as per international standards like DIN 45635-16, if required. Supplier to demonstrate compliance to noise level, if so required.	Vendor to confirm			
5.2	There shall not be any emissions from the machine except fumes of cutting fluid during machining.	Vendor to confirm			
5.3	There should not be any effluent from the machine. In case there are any effluents from the machine, requisite effluent treatment plant or pollution control device should be built into the machine by the supplier.	Vendor to confirm			
5.4	No hazardous chemicals shall be required to be used in the machine.	Vendor to confirm			
5.5	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor.	Vendor to confirm			
5.6	Paint of the machine should be oil / coolant resistant and should not get peeled off and mixed up with coolant.	Vendor to confirm			
5.7	Colour of the machine unit shall be mutually agreed between the vendor and BHEL without any additional cost	Vendor to accept			
6.0	POWER SUPPLY / ENVIRONMENT CONDITION				
6.1	The machine should be suitable for operation in the following conditions: - - Power supply for the machine: 415 V +10 % / -15 %, 3 phase, 50 Hz +/- 3 % - Ambient Temperature range : 5 deg celsius to 45 deg celsius - Relative humidity: 95 % max. - Other conditions: Similar to tropical country. - Dust laden atmosphere during some part of the year.	Vendor to accept & confirm			
7.0	ANCHORING MATERIAL:				
7.1	Complete set of anchoring materials including foundation bolts, nuts, washers and levelling shoes etc for fixing of Compressor including other items like Air Filter, Air Drier and Air Receiver etc. to the foundation should be supplied.	Vendor to offer			

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8.0	SPARES :				
8.1	Vendor to offer their recommended mechanical, electrical and hydraulic spares for 2 years of trouble free operation of Compressor and other items like Air Filter, Air Drier and Air Receiver etc. Itemised breakup of the offered spares should be offered by vendor. Unit Price of each item of spare should be offered.	Vendor to offer			
9.0	O & M MANUALS:				
9.1	Three sets of Operation & Maintenance Manuals in English language and its soft copies in CD should be supplied along with the equipment. Manuals should contain the following information in it.	Vendor to offer			
9.2	Operating manuals of Compressor including other items like Air Filter, Air Drier and Air Receiver etc.	Vendor to offer			
9.3	Detailed Maintenance manual of Compressor including other items like Air Filter, Air Drier and Air Receiver etc. With the help of drawings of main assemblies/sub-assemblies/parts including Electrical / Coolant / Hydraulic circuit diagrams.	Vendor to offer			
9.4	Catalogues, Operation & Maintenance Manuals of all bought out items including drawings, wherever applicable.	Vendor to offer			
10.0	Quality plan	Vendor to offer			
10.1	Vendor to submit quality plan for BHEL approval after placement of order.	vendor to confirm			
11.0	PRE DESPATCH INSPECTION:				
11.1	Pre-dispatch inspection may be carried out by BHEL representative at vendor's works. However it is at the discretion of BHEL and final acceptance will be done at BHEL, Jagdishpur during the commissioning of the Compressor.	Vendor to offer			
12.0	FOUNDATION				
12.1	Foundation plan drawing with loading data at various points is to be submitted by supplier within 4 weeks of placement of LOI/PO which ever is earlier.	Vendor to accept & offer			
12.2	BHEL shall carry-out the design and construction of foundation as per foundation plan drawing & loading data.	Vendor to accept & confirm			

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13.0	ERECTION & COMMISSIONING				
13.1	Supplier to take full responsibility for carrying out the erection and commissioning of Compressors alongwith its all accessories at BHEL. Electrical power, water shall be provided by BHEL at only one point to be indicated by supplier in their layout drawings. Other requirements like crane shall also be provided by BHEL. During commissioning, vendor will have to demonstrate proper operation / functioning of the Compressor and all other items like Air Drier, Air Filter and Air Receiver etc.as per their specifications. Quality of outlet air from the Compressor Unit will also to be demonstrated as per the technical specifications.	Vendor to offer			
14.0	QUALIFYING CONDITIONS:-				
14.1	Only those vendors, who have supplied and commissioned at least two nos. "Screw type Air Compressor" of same or higher capacity (Air delivery rate) in the past ten years (on the date of opening of tender) and such Compressors are presently working satisfactory for more than six months after commissioning (on the date of opening of tender), should quote. The following information should be submitted by the vendor about the company (s) where similar compressors have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to comply and submit with offer			
14.1.1	Name of the customer / company where similar Compressors are installed.	Vendor to inform			
14.1.2	Complete postal address of the customer.	Vendor to inform			
14.1.3	Month & Year of commissioning.	Vendor to inform			
14.1.4	Board specification of the machine (S).	Vendor to inform			
14.1.5	Name and designation of the contact person of the customer.	Vendor to inform			
14.1.6	Phone, FAX no. and e-mail address of the contact person of the customer.	Vendor to inform			
14.1.7	Performance certificate from the customer regarding satisfactory performance of machine supplied to them (Original Certificate or Through E-mail directly from the customer). The original performance certificate may be returned after verification by BHEL, if required.	Vendor to arrange			
14.1.8	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 accept			

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15.0	GENERAL				
15.1	Total Space required (Length, Width, Height) for complete Compressor including all items like Filter and Drier etc. should be sent alongwith the offer.	Vendor to inform			
15.2	The supplier is to submit a clause wise deviation statement against each clause of this technical specification along with the offer.	Vendor to submit			