

## Technical BID

### Technical BID for Supply, Installation, Testing and commissioning of 80cfm Air compressor with 0 to 13 bar pressure range, External drier, External receiver with accessories at SMDDC workshop, CMTI Bangaluru.

#### 1. Technical Specifications and comply sheet for AIR COMPRESSOR (Rotary Screw Type)

Sl. No.	Description	Specification	Qty	Vendor Comply in YES/NO If NO please specify
<b>1. Air Compressor</b> with the following specifications			<b>01</b>	
<b>Preferred Make: Atlas Copco, Ingersoll Rand</b>				
1.1	Type of Compressor	Twin Rotary Screw, Oil Lubricated, air cooled, Stationary air compressor		
1.2	Pressure at delivery point	10 Kgf/cm <sup>2</sup> (9.75 bar) Pressure Gauge for monitoring		
1.3	Pressure range	0 to 13 bar		
1.4	Capacity (Approx free air delivery)	Min. 80 cfm		
1.5	Rated Power in Hp	To be filled by vendor		
1.6	Controller	Microprocessor based <ul style="list-style-type: none"><li>• Equipment Running Status and Fault Alarm Display</li></ul>		
1.7	Additional Requirement	TEFC driven squirrel cage induction motor of efficiency class IE3 suitable for 415 ± 10% volts, 50Hz, 3 Phase AC supply, class F insulation with IP 55 degree of protection with fixing of start delta starter with over load relay including connection from starter to limit switch and compressor with power cable as well as control cable, making suitable CC foundation as required.  Oil level indicator/See through glass to be included		

1.8	Permissible Noise Level	It should be less than 75dbA at distance of 1mt with enclosure.		
1.9	Permissible Vibration Level	<ul style="list-style-type: none"> <li>➤ ≤1 mm/sec on motor front and rear side and</li> <li>➤ ≤1 compressor DE and NDE side in 3 directions ( X,Y,Z)</li> </ul>		
1.10	Drain	Automatic draining of water condensate wherever required as per air compressor design needs. No manual draining permitted.		
<b>Installation &amp; Commissioning</b>		Installation with required seamless metal tube pipe, flanges, valves etc. to connect existing compressor line and Commissioning to be done at CMTI. The foundation mounting requirements should be shared with CMTI immediately after the PO placement		
<b>Warranty</b>		The complete equipment and other parts supplied along with shall be warranted for 12 Months after Installation and successful commissioning at CMTI.		
<b>Documents</b>		Operation and maintenance manual 2 Sets each along with electrical diagram if applicable. Maintenance manual to include specification like power etc. and make with model of all critical parts		
<b>Acceptance Criteria</b>				
<ul style="list-style-type: none"> <li>➤ Successful Installation and commissioning with demonstration of functions.</li> <li>➤ Test Certificates is to be provided from the Manufacturer for in-house QAP for design and Hydrotesting of Air Vessel.</li> <li>➤ Test Certificates for noise level and vibration level should be provided</li> <li>➤ The calibration certificate of instruments used for testing of above equipment should also be given along with the traceability</li> </ul>				

## **2. Technical Specifications and comply sheet External AIR DRYER (Refrigerated Type) and Filtration system**

The Air Dryer should deliver dry, clean and oil-free air according to ISO 8573 Class 14.1 with the following specifications.

Sl. No.	Description	Specification	Qty	Vendor Comply in YES/NO If NO please specify
<b>1. External Air Dryer</b> with the following specifications			<b>01</b>	
1.1	Type of Air Dryer	<b>Refrigerated Type</b>		
1.2	Capacity	120 cfm and above		
1.3	Operating Pressure	13 Kgf/cm <sup>2</sup> (13 bar)		
1.4	Maximum pressure drop across dryer	0.2 bar		
1.5	Dew point	≤ 3 °C (Display Unit needed)		
1.6	Refrigerant	R134A / R404a/R507		
1.7	Compressor make	Danfoss / Copeland/ Emerson/Tecumseh/Maneuropo		
	Controller	Microprocessor based (Preferred).  <ul style="list-style-type: none"> <li>• Temperature Display</li> <li>• Option for Delay Timer to preferred with option to turn on/off</li> <li>• Equipment Running Status &amp; Fault Alarms</li> </ul>		
<b>2. Fine-Filter</b> with the following specifications			<b>01</b>	
2.1	Float type auto drain	Required		
2.2	Maximum particle size	0.1 µm		
<b>3. Fine-Filter</b> with the following specifications			<b>01</b>	
3.1	Float type auto drain	Required		
3.2	Maximum particle size	0.01 µm		
<b>4.Pneumatic compressor point the following</b>				
4.1	8mm Festo tube with required fitting as per drawing	10 meters length	01	
4.2	Suitable size Festo Gun with fittings	Required	01	
<b>Drain</b>		Automatic draining of water condensate wherever required as per air dryer design needs. with manual draining.		

<b>Air Quality</b>	Required Compressed Air Quality as per ISO 8573-1:2010. a. Particle Class: Class 1 b. Humidity and Liquid Vapour: Class 4 c. Oil Class: Class 1 d. Microbial Contamination: Zero Bacteria	
<b>Installation &amp; Commissioning</b>	Installation with Air drier Bypass arrangement (with 3 Nos. valves), Metal seamless pipe, fittings, flanges, etc to connect existing compressor line completely as per attached drawing. and Commissioning is to be done at CMTI.	
<b>Warranty</b>	The complete equipment and other parts supplied along with shall be warranted for 12 Months after Installation and successful commissioning at CMTI.	
<b>Documents</b>	Operation and maintenance manual 2 Sets each along with electrical diagram if applicable. Maintenance manual to include specification like power etc. and make with model of all critical parts	
<b>Acceptance Criteria</b>		
	<ul style="list-style-type: none"> <li>➤ Test/ Calibration Certificates to be provided for Dew Point Temperature Measurement system, Pressure Drop across dryer and Filtration System.</li> <li>➤ Test Certificates is to be provided from the Manufacturer for in-house QAP.</li> <li>➤ Air quality test report to be submitted as per ISO 8573-1:2010.</li> </ul>	

### **3. Technical Specifications and comply sheet for External Air receiver**

<b>Sl. No.</b>	<b>Description</b>	<b>Specification</b>	<b>Quantity</b>	<b>Vendor Comply in YES/NO If NO please specify</b>
<b>External Air receiver with the following specifications</b>			<b>01</b>	
<b>Preferred Make: Atlas Copco, Ingersoll Rand/Equivalent</b>				
1.1	Working pressure	13 bar or above		
1.2	Hydro test Pressure	21 bar		

1.3	Capacity	500 Litres		
1.4	Pressure gauge with pneumatic syphon and valve	Range 0 to 16 bar (6 inch Dia)	<b>01</b>	
1.5	Safety valve	As per standard	<b>01</b>	
1.6	Manual drain valve	Required	<b>01</b>	
1.8	Auto drain valve.(with bypass)	Required	<b>01</b>	
1.9	Code of construction	IS-2825/ASME Sec VIII DIV-I		
<b>Installation &amp; Commissioning</b>		Installation with accessories, required Metal seamless pipe, fittings, flanges etc to connect existing compressor line completely as per attached drawing and Commissioning to be done at CMTI. The foundation mounting requirements should be shared with CMTI immediately after the PO placement		
<b>Warranty</b>		The complete equipment and other parts supplied along with shall be warranted for 12 Months after Installation and successful commissioning at CMTI.		
<b>Documents</b>		Hydro pressure test reports (2 Copies)		
<b>Acceptance Criteria</b>				
➤ Successful Installation and commissioning with demonstration of functions.				

### **Payments Terms and conditions:**

1. 100% payment after successful completion of work.
2. Performance Security/ Performance Bank Guarantee: The amount of the Performance Security shall be 5 % (Five percent) of the contract value.
3. The Performance Security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

### **Work schedule.**

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|---|---------|
| 1. Delivery of materials at site from the date of PO issued:                | 30 Days |
| 2. Installation of compressor as per drawing attached after site clearance: | 15 Days |
| 3. Testing, Commissioning and Acceptance:                                   | 07 Days |
| 4. Submission of all documentation:   | 05 Days |

Compressor installation layout drawing

