

**SPECIFICATIONS: “Design, Supply, Installation & Commissioning of Lubricated Air Compressor System with acoustic along with close loop piping across Work Centers (on Turn Key Basis)”**

Code No. \_\_\_\_\_

Qty. – As mentioned

**Description:** As mention below bidders are request to go through the specifications and provide Air compressors with Air Dryers for both Variable & Fixed Type along with extruded Aluminum Piping across all existing and new shops in a close loop form as per given Indicative Layout.

**A. Specifications of Lubricated Air Compressors System (Fixed & Variable Type) along with Air Dryer.**

**A.1 Lubricated Air Compressor Fixed Type 500 CFM Minimum& Air Dryer (On Turn Key Basis)**

S.No.	Description of requirement	Required
<b>I</b>	<b>Lubricated Compressor Fixed Type</b>	Qty.- 03 Set
	<b>General specification</b>	
1	Operating & Design Conditions as per given site data	Confirm
1.1	Site Data	
1.1.1	Site Location	Kanpur (U.P.)
1.1.2	Ambient Temperature	Up-to45°C
1.1.3	Relative Humidity	Up-to 95%
1.1.4	Electric Supply	50Hz, 415V, 3φ
1.1.5	Classification	Non-hazardous / safe
	<b>Technical Specification</b>	
<b>2</b>	<b>Compressor (Fixed Type)</b>	
2.1	Type	Stationary, Two stage, Air Cooled, Direct drive, Electrically Driven, Screw Compressor with Acoustic Canopy
2.2	Location	Indoor
2.3	Capacity	500 CFM at 7 bar (Min.)
2.4	Discharge pressure capacity compressor	7 bar (Min.)
2.5	No. of Stages	Two
2.6	Nominal Motor Power (kW/HP)	75/100(min.)
2.7	Duty	Continuous Operation
2.8	Discharge Air Temperature (At after cooler outlet)	Ambient + 10°C max.
2.9	Quality of Air required at Compressor outlet	As per ISO 8573
2.10	Noise Level	Up-to 74 ± 2 dB (As per ISO 3746:2010)
<b>3</b>	<b>Components of Compressor</b>	
3.1	Oil Cooler: Radiator (Aluminum block) type, Oil cooler with fan of suitable size for efficient cooling of oil shall be provided	4 kW (Minimum)
3.2	After Cooler: Air cooled radiator (Aluminum block) type, After- cooler to cool the discharge air to ambient +15°C.	Confirm
3.3	Motor: 3phase squirrel cage induction motor with TEFC enclosure Insulation class F, protection class: IP-55 and construction B3/B5 with minimum IE3 standard	Confirm
3.4	Panel to be fitted with the following transducers- Air pressure and temperature Oil pressure Hour Meter Suction air filter Vacuum Indicator Ampere meter Dew point indicator for dryer	Confirm
3.4	Minimum following protection Shall be provided- Pressure safety valve, High Air-oil temperature, High air Pressure, Motor overload	Confirm
3.5	Minimum following visual- indications Shall be provided- 1.Power supply ON 2.Compressor load Compressor unload 3.Motor overload	Confirm

	4.Discharge Air pressure	
<b>4</b>	<b>Construction material for various components</b>	
4.1	Air Outlet Ball Valve	Housing: Cast carbon steel Ball: S.S/Brass
4.2	Oil Filter	Cellulose Polyamide Reinforced
4.3	Condenser / Fan Assembly	Pipes: Copper Fins: Aluminum Fan: Aluminum Grating: Steel/M.S.
4.4	Inlet silencer	Polypropylene
4.5	Inlet Air filter (enclosure / casing)	Outer and inner grating Zinc plated against corrosion
<b>5</b>	<b>Filters Data:</b>	
5.1	3 micron filtration level at 99.9% efficiency (TO PREVENT DUST FROM AIR RECEIVER TANK, AND INSTALL AT AFTER AIR RECEIVER TANK AND BEFORE AIR DRYER)	Confirm
5.2	Filter body	Aluminum alloy
5.3	Equipped with a differential pressure indicator to indicate the clogging of filter element to allow further action of element cleaning / replacement	Confirm
<b>II</b>	<b>Air Dryer Data</b>	
	<b>Capacity</b>	
1	Type	Refrigerated Cooled
2	Type of Unit	Stand alone
3	Quantity	3 Set (One with each Fixed Type Air compressor)
<b>4</b>	<b>Inlet air detail</b>	
4.1	Flow (At inlet basis)	To suit included FAD capacity of compressor
4.2	Moisture content in inlet air	Saturated air with max 95% RH
4.3	Inlet air temperature	Up-to 55° C
4.4	Operating Pressure	7 bar (Minimum)
<b>5</b>	<b>Outlet air detail</b>	
5.1	Quality of Air	As per ISO 8573
<b>6</b>	<b>Components: Air Dryer</b>	
6.1	Casing	Shall be sturdy enough to sustain the load of unit formed from steel panels/ structure (as needed) and finished with oven baked epoxy powder coating
<b>6.2</b>	<b>Refrigeration System</b>	
6.2.1	Refrigerant Compressor	Hermetically sealed Maintenance free refrigerant compressor with suitable anti-vibration pads
6.2.2	Condenser	Air cooled Aluminum block type Aluminum bonded &Finned type condenser
6.2.3	Hot gas bypass valve	Confirm
6.2.4	Refrigerant suction stainer Stainer Material - S.S	The system shall also comprises with necessary instruments/ safety and control for automatic operation of the system
6.2.5	Heat Exchangers for - Refrigerant to Air (Evaporator) & Air to Air (Discharge air heater)	Finned coiled tube / Shell type (Vendor to select suitable Heat Exchanger).
6.2.6	Automatic Condensate Drain	Auto-drain type.
<b>7</b>	<b>Filter Details:</b>	
7.1	1 No. coarse filter, Mesh Size: 5 micron	Confirm

	1 No. fine filter, Mesh Size: 0.1 micron at outlet of the dryer shall be provided	
7.2	Filter body	Aluminum alloy
7.3	Equipped with a differential pressure indicator to indicate the clogging of filter element to allow further action of element cleaning / replacement	Confirm
<b>III</b>	<b>Documentation</b>	
<b>1</b>	<b>Detailed layout plan and prospect to be given</b>	Each Documents 3 sets of hard copy and 1 set of soft copy along with delivery
2	Operating instruction	
3	Installation and Commissioning instruction	
4	Quality Test records	
5	Maintenance / repair charts	
6	Preventive maintenance instructions	
7	Lifting instruction mentioned in packing list	
8	Detailed invoice and packing list of all items and devices and detailed prospect of machine and all other accessories enclosed in respective boxes	
<b>9</b>	<b>General operating condition</b>	
9.1	3 Phase 415V +/- 10%	Confirm
9.2	Frequency 50 Hz +/- 5%	Confirm
9.3	Protection level	IP54 or better
9.4	System should have capability to handle voltage, current and frequency fluctuation, necessary protection to be provided.	Confirm
9.5	Complete electrical system should be tropicalized for Indian condition +5 to 50 degree temp and RH 100% (Including additional accessories)	Confirm
<b>10</b>	<b>Installation and Commissioning</b>	
10.1	The complete installation and commissioning must be carried out by the supplier at the project site (at the final destination/premises). Certificate of acceptance is to be signed by customer and supplier.	Confirm
<b>11</b>	<b>Training at installation place</b>	
11.1	Operator training (No restriction to provide training regarding no. and minimum qualification of a person to be entertained).	15 days for complete system
11.2	Maintenance course mechanical, electrical and electronic (No restriction to provide training regarding no. and minimum qualification of a person to be entertained).	15 days for complete system
12	<b>Warranty:</b> Min 24 months from the date of installation and commissioning.	Confirm

#### **A-2: Lubricated Air Compressor Variable Type 500 CFM Minimum& Air Dryer (On Turn Key Basis)**

S.No.	Description of Requirement	Required
<b>I</b>	<b>Lubricated Air Compressor Variable Type</b>	Qty.-01 Set
	<b>Technical Specification</b>	
1	Operating & Design Conditions	
<b>1.1</b>	<b>Site Data</b>	
1.1.1	Site Location	Kanpur (U.P.)
1.1.2	Ambient Temperature	Up-to 45°C
1.1.3	Relative Humidity	Up-to 95 %
1.1.4	Electric Supply	50Hz, 415V, 3phase
1.1.5	Are Classification	Non-hazardous / safe
1.1.6	Compressor Motor Capacity (kW/HP)	75/100 (min.)
<b>2</b>	<b>Lubricated Air Compressor Detail Specification</b>	
2.1	Type	Stationary, Two stages, Air Cooled, Variable Speed, Direct drive, Electrical Motor Driven, Screw Compressor with Acoustic Canopy

2.2	No. of Stages of Compressors	Two Stages
2.3	Cooling	Air – Cooled
2.4	Location	Indoor/Outdoor
2.5	Capacity FAD	500 CFM at 7bar (Min.)
2.6	Operating range of free air delivery	200 CFM - 500 CFM
2.7	Discharge pressure capacity compressor	7 bar (Minimum)
2.8	Capacity control	40 - 100%
2.10	Duty	Continuous operation
2.11	Discharge Air Temperature (At after cooler outlet)	Ambient +10°C max.
2.12	Quality of Air required at Compressor outlet	As per ISO 8573
2.13	Noise Level	Up-to 74 ± 2 dB (As per ISO 3746:2010)
<b>3</b>	<b>Specification of Major Components of Lubricated Air Compressor</b>	
3.1	Oil Cooler: Radiator (Aluminum block) type, Oil cooler with fan of suitable capacity & size for efficient cooling of oil shall be provided	4 kW (Minimum)
3.2	After Cooler: Air cooled radiator (Aluminum block) type, After- cooler to cool the discharge air to ambient + 15°C.	Confirm
3.3	Motor: 3phase induction motor with TEFC enclosure Insulation class F, protection class: IP-55 and construction B3/B5	Confirm
3.4	Panel to be fitted with the following transducers- Air pressure and temperature , Hour Meter Suction air filter Vacuum Indicator Ampere meter Dew point indicator for dryer	Confirm
3.5	Minimum following protection Shall be provided- Pressure safety valve Low oil pressure High air temperature Motor overload	Confirm
3.6	Minimum following visual- indications Shall be provided- 1.Power supply ON 2.Compressor load Compressor unload 3.Motor overload 4.Discharge Air pressure	Confirm
<b>4</b>	<b>Construction material for various components</b>	
4.1	Oil Filter	Cellulose Polyamide Reinforced or Better
4.2	Condenser / Fan Assembly	Pipes: Copper Fins: Aluminum Fan: Aluminum Grating: Steel /MS
4.3	Inlet silencer	Polypropylene
4.4	Inlet Air filter	Outer and inner grating Zinc plated against corrosion
<b>5</b>	<b>Filter Data</b>	
5.1	3 micron filtration level at 99.9% efficiency (TO PREVENT DUST FROM AIR RECEIVER TANK, AND INSTALL AT AFTER AIR RECEIVER TANK AND BEFORE AIR DRYER)	Confirm
5.2	Cyclonic separation for pre filtration	Confirm
5.3	Filter body	Aluminum alloy or Better

5.4	Equipped with a differential pressure indicator to indicate the clogging of filter element to allow further action of element cleaning / replacement	Confirm
<b>II</b>	<b>Specification of Air Dryer</b>	
<b>1</b>	<b>Capacity</b>	
1.1	Type	Non-cyclic, Refrigerated, Air Cooled
1.2	Type of Unit	Integral with compressor in a single enclosure and same skid
1.3	Quantity	As given in schedule of quantity
<b>2</b>	<b>Inlet air detail</b>	
2.1	Flow (At inlet basis)	To suit included FAD capacity of compressor
2.2	Flow range	40 to 100%
2.3	Moisture content in inlet air	Saturated air with max 95% RH
2.4	Inlet air temperature	Up-to 55°C
2.5	Pressure	Minimum 7 bar
<b>3</b>	<b>Outlet Air Detail</b>	
3.1	Quality	As per ISO 8573
<b>4</b>	<b>Specification of Major Components of Air Dryer</b>	
4.1	Casing	Shall be sturdy enough to sustain the load of unit formed from steel panels/ structure (as needed) and finished with oven baked epoxy powder coating
<b>5</b>	<b>Refrigeration System</b>	
5.1	Refrigerant Compressor	Hermetically sealed Maintenance free refrigerant compressor with suitable anti-vibration pads.
5.2	Condenser	Air cooled Aluminum block type Aluminum bonded & Finned type condenser
5.3	Hot gas by pass valve	Confirm
5.4	Refrigerant suction stainer	The system shall also comprises with necessary instruments/ safety and control for automatic operation of the system
5.5	Heat Exchangers for- Refrigerant to Air (Evaporator) & Air to Air (Discharge air heater)	Shell and Tube type (material Copper) (Vendor to select suitable heat exchanger).
5.6	Automatic Condensate Drain	Auto-drain type.
<b>6</b>	<b>Filters:</b>	
6.1	1 No. coarse filter , Mesh Size: 5 micron 1 No. fine filter , Mesh Size:0.1 micron at outlet of the dryer shall be provided	Confirm
6.2	Cyclonic separation for pre filtration	Confirm
2.3.4	Filter body	Aluminum alloy or Better
2.3.5	Equipped with a differential pressure indicator to indicate the clogging of filter element to allow further action of element cleaning / replacement	Confirm
<b>III</b>	<b>Documentation</b>	
<b>1</b>	<b>Detailed layout plan and prospect to be given</b>	Each Documents 3 sets of hard copy and 1 set of soft copy along with delivery
2	Operating instruction	
3	Installation and Commissioning instruction	
4	Quality Test records	
5	Maintenance / repair charts	
6	Preventive maintenance instructions	
7	Lifting instruction mentioned in packing list	

8	Detailed invoice and packing list of all items and devices and detailed prospect of machine and all other accessories enclosed in respective boxes	
9	<b>General operating condition</b>	
9.1	3 Phase 415V +/- 10%	Confirm
9.2	Frequency 50 Hz +/- 5%	Confirm
9.3	Protection level	IP54 or better
9.4	System should have capability to handle voltage, current and frequency fluctuation, necessary protection to be provided.	Confirm
9.5	Complete electrical system should be tropicalized for Indian condition +5 to 50 degree temp and RH 100% (Including additional accessories)	Confirm
10	<b>Installation and Commissioning</b>	
10.1	The complete installation and commissioning must be carried out by the supplier at the project (at the final destination/premises). Certificate of acceptance is to be signed by customer and supplier.	Confirm
11	<b>Training at installation place</b>	
11.1	Operator training (No restriction to provide training regarding no. and minimum qualification of a person to be entertained.	15 days for complete system
11.2	Maintenance course mechanical, electrical and electronic (No restriction to provide training regarding no. and minimum qualification of a person to be entertained.	15 days for complete system
12	<b>Warranty</b>	Min 24 months from the date of installation and commissioning.

**B. Specifications of Air Piping Arrangement (On Turn Key Basis)**

**Description:** Vendor to design the complete system based on the layout given. The pipe layout attached here with is indicative and vendor to improvise based on his own design.

Sr. No.	DESCRIPTION OF REQUIREMENT	Required
1	<b>It is proposed to create a centralized piping system with close loop networking covering all the shop. This system will cover all the shop and connect the Fix and variable compressor to all working points.</b>	Vendor to Confirm
2	<b>No. of compressors/ reservoirs to be connected</b>	Vendor to note for design
2.1	500 CFM Fix type (Minimum)	3 Nos.
2.2	500 CFM Variable Type (Minimum)	1 No.
2.3	Reservoirs (Minimum)	
2.3.1	2000 L (Minimum)	2Nos.
2.3.2	1000L (Minimum)	4Nos.
2.3.3	500L (Minimum)	9 Nos.
2.4	Safety Valves (Minimum)	15 Nos.
2.5	Line Filter (Minimum)	15 Nos.
3	<b>Shop wise pipe requirement (With No. of drop locations)</b>	<b>Vendor to design</b>
3.1	<b>Work Centre-2 (Vendor to refer given Layout)</b>	1 Lot
3.1.1	Air Piping across the shop	Vendor to note for design
3.1.2	Main Grid (Shop header): 240 m (Approx.)	
3.1.3	Drop pipe(Shop leg point): 80 m (Approx.)	
3.1.4	FRL 12 nos. (Minimum)	
3.1.5	Flexible pipe 66m (Minimum)	
3.2	<b>Work Centre -3 (Vendor to refer given Layout)</b>	1 Lot
3.2.1	Air Piping across the shop	Vendor to note for design
3.2.2	Main Grid (Shop header): 200 m (Approx.)	
3.2.3	Drop pipe 65 m (Approx.)	
3.2.4	FRL10 nos. (Minimum)	
3.2.5	Flexible pipe 55 m (Minimum)	

<b>3.3</b>	<b>Work Centre -4 (Vendor to refer given Layout)</b>	1 Lot
3.3.1	Air Piping across the shop	Vendor to note for design
3.3.2	Main Grid (Shop header): 230m (Approx.)	
3.3.3	Drop pipe(Shop leg point): 105m (Approx.)	
3.3.4	FRL 16 nos. (Minimum)	
3.3.5	Flexible pipe 88m (Minimum)	
<b>3.4</b>	<b>Work Centre -6(Vendor to refer given Layout)</b>	1 Lot
3.4.1	Air Piping across the shop	Vendor to note for design
3.4.2	Main Grid(Shop header): 200 m (Approx.)	
3.4.3	Drop pipe(Shop leg point): 150 m (Approx.)	
3.4.4	FRL 24 nos. (Minimum)	
3.4.5	Flexible pipe 132 m (Minimum)	
<b>3.5</b>	<b>Work Centre -7A (Vendor to refer given Layout)</b>	1 Lot
3.5.1	Air Piping across the shop	Vendor to note for design
3.5.2	MainGrid(Shop header): 180 m (Approx.)	
3.5.3	Drop pipe(Shop leg point): 66 m (Approx.)	
3.5.4	FRL 10 nos. (Minimum)	
3.5.5	Flexible pipe 55 m (Minimum)	
<b>3.6</b>	<b>Existing Production Shop &amp; Wood Working (Vendor to refer given Layout)</b>	1 Lot
3.6.1	Air Piping across the shop	Vendor to note for design
3.6.2	Main Grid(Shop header): 410 m (Approx.)	
3.6.3	Drop pipe (Shop leg point): 125 m (Approx.)	
3.6.4	FRL 19 nos. (Minimum)	
3.6.5	Flexible pipe 105m (Minimum)	
<b>3.7</b>	<b>Existing Tool Room(Vendor to refer given Layout)</b>	1 Lot
3.7.1	Air Piping across the shop	Vendor to note for design
3.7.2	Main Grid (Shop header): 180 m (Approx.)	
3.7.3	Drop pipe(Shop leg point): 53m (Approx.)	
3.7.4	FRL 8 nos. (Minimum)	
3.7.5	Flexible pipe 44 m (Minimum)	
<b>3.8</b>	<b>HEPS (Otto-bock Shop) (Vendor to refer given Layout)</b>	1 Lot
3.8.1	Air Piping across the shop	Vendor to note for design
3.8.2	Main Grid(Shop header): 165 m (Approx.)	
3.8.3	Drop pipe (Shop leg point): 40 m (Approx.)	
3.8.4	FRL 6 nos. (Minimum)	
3.8.5	Flexible pipe 33m (Minimum)	
<b>3.9</b>	<b>Existing Assembly Shop (Vendor to refer given Layout)</b>	1 Lot
3.9.1	Air Piping across the shop	Vendor to note for design
3.9.2	Main Grid(Shop header): 200 m (Approx.)	
3.9.3	Drop Pipe (Shop leg point): 80 m (Approx.)	
3.9.4	FRL 12 nos. (Minimum)	
3.9.5	Flexible pipe 66 m (Minimum)	
3.10	All Connecting Headers Pipe in between the Shops is in vendor's scope ( refer given Layout)	Vendor to design and confirm
3.11	In view of smooth functioning, all the clamp and accessories to fix theheader piping such as Connector, Elbow, Tee,wall mounts,Safety Valve, Pressure Gauge, Stud, Pipe to Pipe Isolation Valve, Fixing Clip, Valve etc. is in vendor's scope	Vendor to design and confirm
3.12	In view of smooth functioning, all the clamp and accessories to fix the drop down piping such as Connector, Elbow, Tee, Safety Valve, Pressure Gauge, Stud,Fixing Clip,Compatible FRL Units etc. is in vendor's scope	Vendor to design and confirm
4	<b>Summarized Bill of Quantity:</b> Estimated BOM for the systems is as below, Vendor to take quantity as estimated or better to ensure safe & rigid installation of system.	Vendor to confirm and provide details
	<b>Supply of pneumatic pipe line for Various locations</b>	<b>Approx.Qty.</b>
<b>4.1</b>	<b>PLANT HEADER PIPING</b>	Vendor to confirm

4.1.1	Plant Header Pipes	840 m
4.1.2	Plant Header Connector	230 Nos.
4.1.3	Plant Header Elbow	20 Nos.
4.1.4	Plant Header Tee	10 Nos.
4.1.5	Plant Header Reducing Tee for compressor room	5 Nos.
4.1.6	Plant Header Reducing Tee for Work Centre	15 Nos.
4.1.7	Plant Header Flange	45 Nos.
4.1.8	Plant Header Drop for	2 Nos.
4.1.9	Plant Header Drop for Safety Valve	30 Nos.
4.1.10	Plant Header Drop for Pressure Gauge	18 Nos.
4.1.11	Plant Header End Cap	5 Nos.
4.1.12	Plant Header Fixing Clip	500 Nos.
4.1.13	Plant Header Isolation Valve	20 Nos.
4.1.14	Clamp and Accessories for fixing piping	Lump sum
<b>4.2</b>	<b>COMPRESSOR ROOM</b>	Vendor to confirm
4.2.1	Compressor Room Header Pipes	96 m
4.2.2	Pipe Connector	125 Nos.
4.2.3	Pipe Elbow	40 Nos.
4.2.4	Pipe Tee	8 Nos.
4.2.5	Pipe Flange	50 Nos.
4.2.6	Pipe Drop	4 Nos.
4.2.7	Pipe Drop for Safety Valve	4 Nos.
4.2.8	Pipe Male Stud to Connect Compressor	5 Nos.
4.2.9	Pipe Fixing Clip	100 Nos.
4.2.10	Pipe Isolation Valve	20 Nos.
4.2.11	Clamp and Accessories for fixing piping	Lump sum
<b>5</b>	<b>Pipe and Fitting Technical Specification</b>	<b>Vendor to Confirm</b>
5.1	Pipe	Extruded aluminumpipes
5.2	Pipe Manufacturing Standards	EN755.2 /EN755.8/EN573.3
5.3	Fittings	Made of Polymers
5.4	Pipe to Fitting Joint (No welding joint accepted)	Push Type/Threaded type (Leakage proof)
5.5	Allowable pressure drop in whole system	Between 0.4 bar to1 bar
5.6	Pipe internally should be corrosion and leakage free	Vendor to confirm
5.7	Weight per meter of pipe and design the support	Vendor to confirm
5.8	Working temperature:-20°C to+70°C	.-20 to+70Degree
5.9	Vacuum level: 0.13 bar absolute pressure Compatible with al compressor oils	0.13 bar absolute pressure
5.10	Minimum Working pressure	7 Bar
5.11	Maximum working pressure	13 Bar
5.12	All Piping and it's accessories shall be Fire-resistant(accordingtoUL94) Suitable for outdoor installation	Vendor to Confirm and note
5.13	Necessary tool for the fitting of pipe at site	Vendor to provide all necessary tool
5.14	Loading Pressure	Vendor to provide details
<b>6</b>	<b>Scope of work</b>	<b>Vendor to confirm</b>
6.1	Complete Design of piping network as per abovementioned details	Submit the Layout Diagramwith calculations
6.2	Supply of material as per Bill of material mentioned above	Vendor to confirm
6.3	Fabrication of Mounting bracket and Drilling at site	Vendor to confirm
6.4	Installation and commissioning of pipe across the shops at site	Vendor to confirm
6.5	Testing at required CFM and Pressure for 36 hrs.	Vendor to confirm
6.6	Spares for necessary operation (List to be Provide)	Vendor to confirm



<b>7</b>	<b>Documentation</b>	
7.1	Detailed layout plan and prospect to be given	Each Documents 3 sets along with delivery
7.2	Installation and Commissioning instructions	
7.3	Requirement/recommendation for power supply controlled stabilizing has to be given.	
7.4	Detailed invoice and packing list of all items and devices and detailed prospect of Table and all other accessories enclosed in respective boxes	
<b>8</b>	<b>Installation and Commissioning</b>	
8.1	The complete installation and commissioning must be carried out on turnkey basis by the supplier at the project (at the final destination/premises). Certificate of acceptance is to be signed by customer and supplier.	Vendor to confirm
<b>9</b>	<b>Service</b>	
9.1	The authorized Service Partners in India (Name & Address) must be certified by manufacturer and shown in the quotation	Vendor to confirm
<b>10</b>	<b>Warranty:</b> Min 24 months from the date of installation and commissioning.	Vendor to confirm
11	Vendor to confirm that he had done minimum 3 similar installations covering at least 2000 m long header piping.	Vendor to confirm
12	Vendor has to ensure following, while designing , Installing and Commissioning utility	Vendor to confirm
12.1	Vendor has to consider the pipe made of extruded Aluminum manufactured as per EN 755.2 standard (refer specification ) along with test certificates	Vendor to confirm
12.2	Vendor has to ensure that all pipe joints are CE certified and come with factory test certificates and are made of special polymer which can take pressure of 25 bar.	Vendor to confirm
12.3	Vendor has to ensure that the whole pipe line across the whole new factory as well as existing work centers will not have any welding joint. (100% weld free piping system) also there will not be any welding joint for safety and accuracy. The pipes will come in direct fitting condition and will just be installed on the space provided of structural. The installation fittings come along with pipes.	Vendor to confirm
12.4	Vendor has to ensure all drop downs from which the air is used is fitted with FRL (Compulsory Arrangement) as air leaving compressor is hot, dirty, and wet which can damage and shorten life of downstream equipment, Before air can be used it needs to be filtered, regulated and lubricated. An air-line filter cleans the compressed air. It strains the air and traps solid particles (Dust, Dirt and Rust) and separates liquids (Water, Oil) entrapped in the compressed air. Hence we do not need any Separate Air Dryer, As Air Dryer alone will not serve the purpose.	Vendor to confirm
12.5	Vendor has to ensure that in whole system pressure drop (which will be tested after installation) in 0.4 bar to 1 bar.	Vendor to confirm
12.6	Vendor has to ensure that he at least the working temperature of the pipe will be -20° to +70 ° to ensure that pipes are designed to take care of expansion and compression of air due to temperature variations.	Vendor to confirm
12.7	Vendor has to ensure that the system will be designed to give at least working pressure of 7 to 13 bar	Vendor to confirm
12.8	Vendor to ensure to give sufficient no. of reservoirs for providing uniform pressure across the whole line.	Vendor to confirm
12.9	Vendor to ensure the type of compressor should be of Direct drive type where there is no efficiency loss in the system between motor and drive.	Vendor to confirm
12.10	Vendor to ensure the compressor should be of positive displacement type and counter rotating screw type which gives the best output.	Vendor to confirm
12.11	Vendor to ensure that apart from giving End point fitted with FRL. The compressor exit and reservoir exit also has required filters.	Vendor to confirm
12.12	Vendor has to ensure the flexible pipe considered at machine use point is fixed type and at manual use point it is the auto retractable type (which is auto spring loaded system and retract automatically after the person has finished using).	Vendor to confirm
12.13	Vendor to ensure that the piping system should be designed in the close loop. In case there is a leakage in on particular section the same can be isolated with valves and rest of the plant can used compressed air work.	Vendor to confirm
12.14	Vendor to ensure to provide sufficient no of safety valves/closing valves to ensure safety of the whole system	Vendor to confirm

12.15	Vendor to ensure that all pipes and utilities used should be fire proof, enough safety and sensors are provided to detect the leakage and failures.	Vendor to confirm
12.16	Vendor should ensure that all designing, supply, installation, commission, test, synchronization of the complete system in his scope which will give 100 % smooth work.	Vendor to confirm

**DELIVERY PERIOD INCLUDING INSTALLATION & COMMISSIONING:**

The delivery, installation & commissioning period of complete Powder Coating Plant at the destination mentioned in Para 1 on page no. 02 of the tender documents will be 10 months for delivery and installation, commissioning & Prove-Out from the date of placement of Purchase Order/work contract.

**WARRANTY:**

The entire Powder Coating Plant inclusive of all system/accessories must be covered under warranty for a period of 24 months (minimum) from the date of Installation & commissioning.

**Note:**

1. Breakdown calls to be attended within 48 hrs.
2. Supply to be done on Turnkey Basis. ALIMCO shall provide electrical supply point, air supply and water supply near to the place of installation. (Civil Layout will be provided)
3. Civil foundation details and drawings with specifications to be provided by the tenderer.
4. Total power Electrical power consumption (in kW) to be provided by the tenderer.
5. Layout drawing should be provided in CAD format.
6. ALIMCO may at its discretion decide to visit & verify the facility and validate in case of discrepancy the vendor shall be technically disqualified.
7. All necessary Details as asked in Annexure-A to be duly full-filled failing which Bid shall be technically Rejected.
8. The Drawing/Layout attached along with details is for reference purpose and should be the minimum qualifying criteria in all aspect. However vendor is free to design its own plan & supply above standard inculcating minimum requirement of the plant and if any change should be submitted while filling bid.
9. Entire System shall be designed and commissioned for ease of access of all facilities and maintenance
10. The Bus bar trunking (BBT) for electricity has been provided at 8.5 meter (approx.) height.
11. Separate list of spares along with rate, required for smooth functioning of the plant & its accessories. The list is solely required with respect to future requirements/reference of Plant. Hence total cost of items from the list should not be the part of final price of tender quote.
12. Vendor may visit the site at its own discretion before quoting / submission of offer.

