Supply, Installation, Painting & Pressure Testing of Compressed Air Line in PIL Annex, Vacuum Furnace Room, Metal Cutting Rooms, SEM Room, Hardinge Lathe Shop and Trial Assembly Area

Description:

Proposed pneumatic line is meant for supply of moisture free dry compressed air at working pressure of 8 bar from Air compressor to various High precision CNC machine tools / Equipments in Precision Labs under ISMP/MDPG/IISU.

Various Labs are spread across different locations in the campus. Air line work should be started from the air- compressor which is located at the compressor room to various tapping points in the ground floor as per the schematic sketches shown in Annexure 2.

Scope of Supply:

S/N	Item Description	Qty
1	Dia 2 inch SS pipe (Outside Dia: 2.375", Wall Thickness: 0.154").	10 meters
2	Dia 1¼ inch SS pipe (Outside Dia: 1.66 inch, Wall Thickness: 0.140 inch).	300 meters
3	Dia 1 inch SS pipe (Outside Dia: 1.315 inch, Wall Thickness: 0.157 inch).	20 meters
4	½" Dia SS pipe (Outside Dia: 0.84", Wall Thickness: 0.17").	100 meters
5	1 inch PVC Pipe 4kg/sq cm	20m
6	2 inch SS Tee Joints	5 Nos
7	1¼ inch SS Tee Joints	60 Nos
8	1 inch SS Tee Joints	20 Nos
9	½ inch SS Tee Joints	50 Nos
10	2 inch SS Elbows	4 Nos
11	1¼ inch SS Elbows	20 Nos
12	½ inch SS Elbows	50 Nos
13	1¼ inch SS Flange Joint	70 Nos
14	1 inch SS Flange Joint	20 Nos
15	½ inch SS Flange Joint	40 Nos
16	1¼ inch SS Ball Valve	4 Nos
17	1 inch SS Ball Valve	20 Nos
18	2 inch SS Ball Valve	2 Nos
19	½ inch SS Ball valve	50 Nos
20	1¼ inch SS Clamp for mounting the pipe line against the wall	175 Nos
21	½ inch SS Clamp for mounting the pipe line against the wall	75 Nos
22	Pressure gauge (0 to 10 bar) (Festo / Janatics make preferred)	40 Nos
23	½" Filter + Regulator Unit (Festo / Janatics make preferred)	40 Nos
24	½" Air Gun (Festo / Janatics make preferred)	40 Nos
25	8mm pneumatic quick coupling (Festo / Janatics make preferred)	150 Nos
26	8mm pneumatic helical hose for air gun (Festo / Janatics make preferred)	40 Nos
27	Stainless Steel Flanges for Air Receiver (inlet and outlet)	6 Nos
28	Metal primer	As required
29	Enamel paint "Sky Blue colour, Shade: 101" as per BIS-05 standard	As required

Note: Supplied pipe should be Seamless Stainless Steel AISI 304 pipe, Grade ASTM 312, Schedule No: 40S, with a Designed Pressure of 12 bar.

Scope of Work:

1) The air line should be installed as per schematic sketch in Annexure 2.
2) Necessary safety equipments such as safety relief valves, gauges, suitable safety reinforcement / enclosure where the pipe line needs to be laid between buildings or crossing through corridors etc. need to be provided.
3) Compressed air line should be wall mounted (as per the schematic sketch shown in Annexure 3) along with necessary outlet points as shown in Annexure 2.
4) Air line for the outlet points should be of ½ inch dia Stainless Steel pipe, tapped from 1 ¼"airline which is running at a height of 3.5 m above the floor level.
5) Total number of Outlet Points - 35 Nos. Each outlet point should be installed as per the schematic sketch shown in Annexure – 4 and consist of SS ½ inch Ball valve, Pressure gauge (0-10 bar), Filter-Regulator unit, Air Gun with helically wound 8mm pu hose for a minimum stretchable length of 5m, 8mm pneumatic quick couplings with ½" BSP thread and ½"Tee-Joint.

   Festo / Janatics make fittings preferred.
6) Joints in the Air line should be with high quality stainless steel Union joints to avoid leak, trouble free operation and to facilitate easy maintenance activities when ever required.
7) SS Flanges, Tee , Elbow, Unions, Clamps etc along with necessary fixing elements for holding the pipe line against the wall should be fixed rigidly and ensure leak tightness.
8) 2", 1¼", 1" and ½" SS Ball valves should be installed in the airline as per schematic sketch shown in Annexure 2 and Annexure 4.
9) Compressor and Air receiver should be connected to the airline as per the schematic sketch shown in Annexure 2 with a provision for operating the two sets of Compressor, Air receives and dries in any required combination.
10) Exact position of the outlet points should be decided in consultation with Engineer-in-Charge, PIL and Engineer-in-Charge, Metrology Lab.
11) The pipe line should be pressure tested for leak tightness at 12 bar pressure.
12) The pipe line and air receivers should be painted with "Sky Blue colour, Shade: 101" as per BIS-05 standard
13) The paint should be of good quality from reputed manufacturer like Asian / Berger.
14) Painting includes single coat of primer and double coat of enamel.
15) Party should specify the brand and supply the color shade along with the offer.
16) Party has to show the color and quality of the paint before painting.

17) Painting shall be carried out only after approval.

18) Air Line and Air receiver should be thoroughly cleaned before painting.

19) Scope of painting work includes supply of paint and painting charges.

20) Total length of the pipe line given in estimate is approximately. Actual length of the pipe line may be varying.

Terms & Conditions:

1) The cost quoted shall include supply of material as per scope of supply mentioned above, installation of airline with 35 Nos of Outlet points (Ball Valve + Pressure gauge + Filter + Regulator + Air Gun with hose + pneumatic quick couplings + Tee Joint) and Pressure testing.

2) Leak testing of the air line should be conducted by pressurizing the air line at 8 bar pressure and ensure a pressure drop not more than 5% over duration of 12 hours.

3) Payment shall be made after satisfactorily completion of work & leak testing of air line for leak tightness.

4) Warranty: Pipe line should be warranted for a minimum period of 12 months for its leak tightness and maintenance free operation.

5) Party may visit the site, assess the functional as well as safety requirements before submitting the offer.