

SECTION 22 48 50 - COMPRESSED AIR SYSTEMS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.
- B. Section 224850 applies to the Plumbing Contract.

1.2 SUBMITTALS

- A. All items specified under Part 2 of this Section.

PART 2 - PRODUCTS

2.1 FLEXIBLE CONNECTIONS (AIR PIPING)

- A. Microflex Part No. HSS-1212, stainless steel flexible hose, arranged for compressed air systems. Flexible connectors shall have a minimum rating of 550 psi at 200°F.
- B. Locate in both inlet and outlet lines of air compressor, and in outlet lines of air dryer.
- C. Locate in horizontal lines only and parallel to compressor shaft where possible.

2.2 PRESSURE REGULATION VALVES

- A. 2 in. and Smaller:
 - 1. Bronze body with screwed ends, bronze trim, brass strainer screen, Neoprene diaphragm, stainless steel seat, Hyear composition seat disc and carbon steel pressure spring.
 - 2. Equal to Cash Acme E-55, arranged for compressed air.
 - 3. Size as indicated on the drawings. Each regulator shall have a range of 50-250 psi.

2.3 AIR COMPRESSOR

- A. Provide air compressor equal to Quincy model QT1 vertical simplex reciprocating air compressor rated at 17.2 ACFM at 175 PSIG.
 - 1. The compressor and motor shall be mounted on an 60 vertical gallon receiver tank and powered by a 5 hp, 208/3/60, ODP, premium efficiency motor with the compressor operating at 658 rpm. The receiver shall

include a check valve, ASME coded safety valves, a manual tank drain, and a pressure gauge. A manual service valve is also standard. It shall be ASME coded and National Board approved.

2. The compressor shall be a splash lubricated, single-acting, two stage, air-cooled, reciprocating type. The crankcase and cylinders shall be individual piece construction made of class G3000 cast iron, with deep cooling fins on the cylinders. A ductile iron crankshaft shall have integral counterweights and shall be supported on both ends by industrial ball bearings that will provide precise shaft alignment and take both radial and thrust loads. There shall be an ASME coded pressure relief valve at the entrance of the intercooler, between the first and second stages. A 10 micron inlet air filter/silencer shall also be standard.
3. Provide Beko compressors model RAHT20 high inlet temperature refrigerated air dryer (115 v) rated at 20 SCFM at psig full load discharge pressure with built in pre-filter.
4. Provide Wilkerson model R26-04-H00 pressure regulator.
5. Provide Wilkerson, WFH, 1 micron particulate separator.
6. Provide new low oil level sensor compatible with the existing air compressor
7. Wilkerson belt-guard after coolers, with separator, model WA/WO.
8. All piping, valves, unions and trim as detailed on Drawings.

B. Provide Control Panel:

1. NEMA 1 enclosure.
2. Magnetic starter with three phase overload protection and thermal release.
3. Hand-off-automatic selector switches.
4. Fused control circuit transformers.
5. Indicator and warning lights as follows:
 - a) Compressor on.
 - b) Thermal overload.
6. Automatic duplex alternator.
7. Mounted on wall as shown on plans.

C. Provide Air Pressure Reducing Station: Provide at dryer outlet, complete with stop valves, regulating valves, and pressure gauges on high and low pressure sides.

2.4 AIR OUTLETS

- A. At each air drop/outlet, provide the following:
 - 1. Shut-off valve.
 - 2. 6" dirt/moisture leg.
 - 3. Quick disconnect fitting: 1", Quick Disconnect Type, locking.
 - 4. Quick disconnect fitting: ½" Quick Disconnect Type, locking.
 - 5. Refer to detail on Drawings.

2.5 AIR DROP WITH HOSE REEL

- A. Provide Reelcraft model #5635 OLP automatic spring driven retractable lubricated hose reel (HR-1) assembly for compressed air. All welded steel construction, heavy duty bracket fitted with the following: 3/8" ID x 35 feet hose rated for 300 psi, Reelcraft model 601024-2 flexible hose inlet assembly, Samson model 938, 3/8" FPT coupler.

PART 3 - EXECUTION

3.1 PRESSURE GAUGES

- A. All pressure gauges, including gauges applied temporarily for testing purposes, shall be manufactured especially for that purpose.

3.2 PIPING INSTALLATION

- A. Provide rigid support for all valves or other equipment, operation of which might place strain on tubing joints.
- B. All tubing in buildings adequately supported in accordance with schedule below.
- C. Install valves in accessible locations and support individually in manner that will prevent force used in operation from placing strain on tubing or joints.
- D. All valve boxes, recessed, large enough to provide adequate space for operation and maintenance.

3.3 TESTING

A. Section Testing:

1. Made while Work is in progress for every 100 feet of header line at 200 lb. pressure, with oil free dry air.
2. Each joint tested for leaks by means of soap suds.
3. All sectional tests made before any station outlet installed.
4. All leaks repaired and that section retested.

B. Blowing Out:

1. After erection of tubing but before installation of outlet valves, lines blown clear.

C. Final Testing:

1. After completion of section testing, as specified above, make final 24-hour standing pressure test with compressed air to a pressure of 200 lbs. in presence of Owner; provide 48-hour notice of time of test.
2. There shall be no drop in pressure.

3.4 EQUIPMENT INSTALLATION

- A. For the compressed air plant, the Manufacturer and Plumbing Contractor shall provide one day start-up supervision and instruction to Owner by a qualified technical representative.
- B. Provide Operations and Maintenance information for system and all components as required by Section 13010.

END OF SECTION