PART 1 - GENERAL

1.01 WORK INCLUDED

* Provide air compressors, disconnect switch, starter, air filter, piping, etc.
* Install air distribution piping and quick disconnect outlets (coordinate type with Owner) as shown on the plans and in accordance with these specifications.
* Provide and install all equipment, piping, fittings, wiring and accessories for a complete compressed air delivery system. Mount compressor on 4” high housekeeping pad.

1.02 RELATED WORK

A. Drawing and general provisions of Contract, including General and Supplementary Conditions and General Provisions Division 01 00 00 Specification sections, apply to work of this section.

B. Although such work is not specifically shown or specified all appurtenances and devices incidental to or necessary for a sound, secure, safe and complete installation shall be furnished and installed as a part of this work.

1. Mechanical Division 23

2. Electrical Division 26

1.03 QUALITY ASSURANCE

A. Codes and Standards: Comply with the current provisions of all codes Federal, State, County and City related to work being accomplished and following codes, specifications and standards except where more stringent requirements are shown or specified.

* Underwriters Laboratories (U.L.) Codes.
* National Fire Protection Agency (NFPA) Codes.
* National Electric (NEC) Codes.
* OSHA Codes and Guidelines.
* American Society for Testing Materials (ASTM).
* Manufacturer's Installation and Operational Guidelines.

1.04 SUBMITTALS

A. All submittals shall follow guidelines as specified in Design Guidelines Basic Mechanical and Electrical Requirements.

B. Shop Drawings: Provide and submit shop drawings and details for piping, venting, electrical wiring, and equipment installation as required for this project.

C. Templates: The Contractor shall provide and submit templates for anchor bolts, and other items set in concrete.

1.05 DELIVERY, STORAGE, AND HANDLING

Division 01, General Requirements, and products/handling/delivery/storage shall conform to the minimum recommendations of the manufacturers of the products herein specified.

1.06 ERRORS AND OMISSIONS

If, due to an error or omission in the scope of work, a particular item is not specifically included but is necessary to provide the Owner with a fully functional compressed air delivery system, then that item is considered to be included in the scope of work just as if it had been listed in detail herein.

1.07 PRODUCT SUBSTITUTIONS

A. Follow requirements specified in Division 1, General Requirements.

B. Additional costs resulting from substitution of products other than those specified, including drawing changes and construction, will be at the expense of the Mechanical Contractor.

PART 2 – PRODUCTS

2.01 COMPRESSED AIR PIPING

1. Specialty Contractor to furnish and install compressed air piping which shall be threaded Sch. 40 galvanized with banded fittings for 2” and smaller, Sch. 40 black steel, ASTM A-120, with 300 lb. welded steel fittings or at contractor's discretion schedule 80 black steel with 300 lb. extra heavy fittings may be used, ASTM-197A for 2 ½” and larger. All piping shall be run overhead except where otherwise indicated. Throughout the main run of piping the compressed air line shall have a slight negative slope for approximately the first 40-50 feet, a dip leg with blow off valve positioned 20 inches off of grade and then a slight positive slope for the next 40-50 feet. This repetition of a negative slope, dip leg and positive slope will continue with main run until the end is reached. At the end of the main run an additional drip leg and blow off valve will be installed. All outlet branch lines shall takeoff from the top of the main line.
2. All exposed black iron or black steel piping shall be painted per 09 90 00, Painting and Coating.

2.02 COMPRESSED AIR VALVES

Specialty Contractor to furnish and install compressed air valves as shown on the plan and at each outlet drop. Valves shall be ball type rated at 400 psig.

2.03 COMPESSED AIR COMPONENTS

A. Specialty Contractor to furnish and install compressed air components shall be provided where shown on the plan and where not indicated shall be provided if needed to supply a complete, safe and reliable compressed air system.

B. Specialty Contractor to furnish and install filter, regulator with gauge as required which shall be manufactured by ARO Fluid Management (ARO) and sized in accordance with a supply pressure of 175 psi and the outlet pressure to be regulated for each particular line.

2.04 AIR COMPRESSOR AND ACCESSORIES

A. Pump Features

1. Oil-less, high efficiency, low maintenance, and long life.
2. Stainless steel valves for lasting performance.
3. Balanced eccentrics provide smooth, low vibration operation and reduce noise level.
4. Rugged die-cast aluminum parts reduce unwanted and unnecessary weight.
5. Splash lube models feature aluminum pump body with cast iron liners, aftercooler with condensate drain.
6. 125 psi maximum pressure operation.

B. MOTOR FEATURES

High efficiency, single-phase, thermally protected induction motors with permanently lubricated bearings on electric models.

C. TANK MOUNT FEATURES

1. Electric models operate on 115V, 15 amp circuit
2. Oil-less models include regulator, tank, and outlet gauges; ¼” (F)NPT outlet
3. Splash oil lube models have a steel belt guard to protect and operator; 3/8” (F)NPT outlet; 17 oz., oil capacity.
4. UL listed pressure switches set to turn on at 95 psi and 125 psi
5. Solid brass fittings
6. Thomas tank designs are lightweight and compact with handles for easy moving and positioning; built with center of gravity for exceptional stability.
7. 140 ASME safety valve
8. Red finish

D. Compressors shall be Thomas Industries Model T-2820WT by Thomas or approved substitute by Dayton or Champion.

E. Automatic Drain: Provide automatic drain to eliminate condensation from compressed air tank each time compressor cycles. Shall be Grainger Catalog # 5Z380 as manufactured by Wilkerson, Wright-Austin, or Speed-Aire.

F. Combination Filter/Regulator: Provide piggyback filter/regulator. Filter shall be 50 micron reusable type with metal bowl, Pyrex sightglass, and manual drain cock.

PART 3 – EXECUTION

3.01 AIR COMPRESSOR PREPARATION

A. Check location of rough-in work utility stub-outs to assure match with equipment to be installed.

B. Inspect equipment for damage from exposure to weather prior to removing and report any damaged components to the Owner/Engineer.

C. Report damaged, missing, or incomplete scheduled equipment and improper rough-in work or utility stub-outs to Architect/Engineer.

3.02 AIR COMPRESSOR INSTALLATION

A. Install equipment in accordance with plans, shop drawings, and manufacturer’s instructions:

1) Positioning: Place equipment in accordance with any noted special positioning requirements generally level, plumb, and at right angles to adjacent work.

2) Fitting: Where field cutting or trimming is necessary, perform in a neat accurate, professional manner without damaging equipment or adjacent work.

3) Anchorage: Attach equipment securely to prevent damage resulting from inadequate fastenings. Installation fasteners shall be installed to avoid scratching or damaging adjacent surfaces.

4) Upon completion of work, finish surfaces shall be free of tool marks, scratches, blemishes, and stains.

B. Contractor to provide a qualified manufacturer’s representative at site to supervise work related to equipment installation.

3.03 COMPRESSOR STARTUP AND TESTING

Contractor to provide a qualified manufacturer's representative at site to perform work related to equipment check out and startup in presence of Architect/Engineer. Copies of all test reports shall be submitted to the Architect/Engineer and the Owner.

3.04 MISCELLANEOUS EQUIPMENT INSTALLATION/CLEAN UP/TRAINING

A. Painting: Paint air distribution piping in accordance with ASME to clearly identify piping run for maintenance. Field painting is work of Section 09 90 00 – Painting and Coating.

B. Testing: As work progress, perform testing of components and systems to verify compliance. Perform tests in presence of Owner and Architect/Engineer. Perform tests on subsurface and concealed items prior to cover-up. Copies of all test reports shall be submitted to the Architect/Engineer and the Owner.

C. Perform operational tests on system when work is completed and at time of Substantial Completion.

D. Instructions to Owner’s Personnel: Instruct Owner’s personnel in the proper operation and maintenance of equipment.

E. Clean-Up and Adjust: Remove all debris, sweep broom clean, and wipe clean to remove dirt, oil, and grease. Adjust all equipment for proper operation.

**END OF SECTION**