

SECTION XXXXX

POSITIVE DISPLACEMENT BLOWER

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A.) Provide three (1) rotary positive displacement blower and all related appurtenances.

1.02 GENERAL BLOWER CONSTRUCTION

- A.) Provide blower, drive unit and accessories required for complete blower unit assemble and installation of assembly by Contractor.
- B.) Blower shall be suitable for continuous operation at the conditions stated herein without excessive noise, vibration, heating or any damage to blower.

1.03 SUBMITTALS

- A.) Provide eight (8) sets of shop drawings and Operation and Maintenance Manuals.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

- A.) Sutorbilt **2LP-RHC** as supplied by C. Emery Nelson, Inc.
- B.) Equipment and training shall be provided by the local factory authorized distributor and warranty center.
- C.) Bid other manufacturers as Substitute Items.

2.02 DESIGN CONDITIONS

- A.) The blower shall have a capacity of **60 SCFM** at a discharge pressure of **6.0** psig. Calculate CFM based on local elevation and an ambient temp of 100 F.
- B.) Blower speed shall not exceed **2800** RPM.
- C.) Operation of blower at design conditions shall not exceed **5 HP**.

2.03 BLOWER CONSTRUCTION

- A.) Casing:
 - 1. One-piece close-grained cast iron with separate headplates
 - 2. Vertical arrangement of blower so that inlet and outlet are on opposite sides of blower and in the same horizontal plane.
- B.) Impeller:
 - 1. Straight, two lobe, involute type, balanced, carried by cylindrical roller bearing at drive shaft and ball bearings at headplate locations.
 - 2. Timing gears shall be alloy steel or ductile iron, accurately machine and securely attached to impeller shaft with a taper pin.
 - 3. Lubrication: Drive end grease, gear end oil splash.
 - 4. The impeller side of the oil seals shall be vented to the atmosphere to relieve air pressure on the seals.
 - 5. Seals shall be Viton.

- C.) Bearings:
 1. Anti-friction bearings, ball or roller type. Designed for a minimum life of ten years per AFBMA B-10 Standards.
- D.) Base:
 1. Silencer base combo for blower, motor, and drives. Fabricated steel, reinforced to withstand normal loading.
- E.) Inlet and Outlet Connections:
 1. Factory supplied flexible connector for the outlet.

2.04 ACCESSORIES

- A.) Inlet Filter:
 1. Approved Manufacturers: Universal Silencer or approved equal.
 2. 2", reusable, dry type complete with weather hood.
 3. Provide two (2) additional filter elements for blower
 4. Filter efficiency shall be 97 percent with particles of one (1) micron diameter and larger.
 5. Pressure drop through filter shall not exceed three inches (3") water column when blower operates at full capacity.
 6. Inlet filter restriction indicator for 0-20" water column
- B.) Silencers:
 1. Approved Manufacturers: Universal Silencer, or approved equal.
 2. Discharge silencer:
 - a. 2" connections.
 - b. Multiple chambered design.
- C.) Pressure Relief Valve:
 1. 2" weighted-type set at 7 psig, adjustable by selecting proper weights.
- D.) Valves:
 1. Check Valve:
 - a. Approved Manufacture: Flexi-Hinge, or approved equal.
 - b. 2" Model 518 with epdm seats installed down stream of the discharge silencer.
 2. Butterfly Valves:
 - a. Approved Manufacturer: Bray, or approved equal.
 - b. Isolation: 2" Series 30 with epdm seats and a manual handle lever.
- E.) Gauge:
 1. Liquid filled with a 4" dial and indicating range from 0-15 psig installed on discharge line of unit.
- F.) Thermometer:
 1. Bi-metal with tree inch (3") dial and indicating range from 0 to 300 degrees F installed on discharge line of unit.

1.05 MOTOR AND DRIVE

- A.) Motor:
 1. Operate 460 volt, 3 phase, 60 cycle, 1800 rpm.
 2. Comply to EPAC design for minimum efficiencies.
 3. Horsepower: 5 HP Premium Efficiency

4. Type: Totally Enclosed Fan Cooled (TEFC).
- B.) Provide extra set of belts.

2.06 PAINT

- A.) The blower and motor shall be to the blower assembly manufacturer with their standard prime coat paint suitable for indoor application.
- B.) All other steel surfaces shall be prime painted.

2.07 SOURCE QUALITY CONTROL

- A.) The blower package supplier must be an Authorized Distributor and Factory Authorized warranty center for the geographical area in which the blower is being installed.

PART 3 – EXECUTION

1.01 INSTALLATION

A.) Piping and Base Installation:

1. Blower assembly shall be installed on a concrete pad and shall be leveled and anchored by Contractor as shown on the plans.
2. Contractor shall install and anchor silencers.
3. Contractor shall support piping to eliminate pipe strain on the blower casings.
4. Blower shall be piped as shown on the plans.
5. Contractor shall supply all hardware necessary to anchor unit per manufacturer specifications.

B.) Lubricants:

1. All initial blower lubricants to be supplied by the blower supplier and applied by Contractor.

1.02 START-UP AND TRAINING

- A.) Blower package supplier shall be factory authorized and shall provide training and start up services. Supplier to instruct the Owner in operation and maintenance procedures and to certify to the Engineer that the equipment is installed and operates correctly.