

SECTION XXXXX

**POSITIVE DISPLACEMENT BLOWER WITH SOUNDSEAL COMPACT  
ENCLOSURE**

**PART 1 – GENERAL**

*1.01 SECTION INCLUDES*

- A.) Provide one (1) rotary positive displacement blower and all related appurtenances assembled as a complete system.

*1.02 GENERAL BLOWER CONSTRUCTION*

- A.) Provide blower, drive unit and accessories required for complete blower unit assembly. 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 EQUIPMENT*

- A.) Sutorbilt **5MP-RHC** with a SoundSeal Enclosure 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 Equipment as Substitute Items.

*2.02 DESIGN CONDITIONS*

- A.) The blower shall have a capacity of **180** SCFM at a discharge pressure of **7.5** psig. Calculate CFM based on local elevation and an ambient temp of 100 F.
- B.) Blower speed shall not exceed **1400** RPM.
- C.) Operation of blower at design conditions shall not exceed **15** HP.

*2.03 BLOWER CONSTRUCTION*

- A.) Casing:
  - 1. One-piece close-grained cast iron with separate headplates
  - 2. Horizontal arrangement of blower so that inlet and outlet are on opposite sides of blower and in the same vertical 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: Blower and Enclosure
1. Approved Manufacturers: Solberg or approved equal.
  2. 4", reusable, dry type complete with weather hood.
  3. Provide two (2) additional filter elements
  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 (6") water column when blower operates at full capacity.
  6. Inlet filter restriction indicator for 0-20" water column.
- B.) Silencer Base Combo with Belt Guard:
1. Approved Manufacturers: Solberg or approved equal.
  2. Discharge silencer:
    - a. 4" connection.
    - b. Multiple chambered design.
- C.) Pressure Relief Valve:
1. 2" weighted-type set at 8.5 psig, adjustable by selecting proper weights.
- D.) Valves:
1. Check Valve:
    - a. Approved Manufacture: Flexi-Hinge, or approved equal.
    - b. 4" Model 518 with epdm seats installed down stream of the discharge silencer.
  2. Butterfly Valves:
    - a. Approved Manufacturer: Bray, or approved equal.
    - b. Isolation: 4" 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 flush mounted in the enclosure.
- F.) Thermometer:
1. Bi-metal with tree inch (3") dial and indicating range from 0 to 300 degrees F flush mounted in the enclosure.

#### 1.05 MOTOR AND DRIVE

- A.) Motor:

1. Operate 460 volt, 3 phase, 60 cycle, 1800 rpm.
  2. Horsepower: 15 HP Premium Efficiency, 92.4%, Rated at 50C
  3. 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.

#### 2.08 ENCLOSURE

1. The sound enclosure shall be suitable for Indoor/Outdoor application and shall enclose the entire machinery package.
2. The blower assembly with sound enclosure shall not exceed 80 dBA measured at 3 feet from the enclosure with no reflective surfaces.
3. The exterior of the enclosure shall be fabricated of 12 gauge steel. The exterior must be designed to withstand potential impacts without substantial damage. The top of the enclosure shall have a positive pitch.
4. The enclosure is to be of a unitized welded construction.
5. A separate inlet filter shall be supplied on the inlet to the enclosure
6. Access Panels
  - a. The top of the enclosure shall be removable without the use of any tools. This access shall allow removal of the blower and motor vertically upward
  - b. Two full access side panels.
  - c. Checking, changing and adding lubricant shall be capable of being performed through the two full access panels on either side of the enclosure.
  - d. All access panels shall have a water tight seal.
7. Cooling and Insulation
  - a. The enclosure shall be fabricated so that ambient process air flows through an internal sound plenum, built integral to the enclosure, directing air across the motor.
  - b. The interior surface of the enclosure shall be 2" urethane foam with a protective film that is washable and free of

perforations and/or materials that would accumulate oil and dust.

8. Required Features:

- Power Coated Finish
- Pre-Assembled and Skid Mounted
- Integrated Forklift Pockets
- Flush Mount Gauges and Thermometers
- ½” Rubber Vibration Isolation

N. ENCLOSURE THERMOMETER/TEMPERATURE SWITCH

1. The enclosure thermometer/temperature switch shall have a 5A SPDT snap action switch. The enclosure temperature switch shall be flush mounted in the enclosure by the blower package supplier and shall be wired in the field by the contractor to shut the blower off when the temperature setting is exceeded. Restarting the blower shall be done manually after troubleshooting is complete. Controls supplied by others.

O. WIRING

1. The electrical contractor shall provide the wiring and controls for the drive motor and the enclosure temperature switch. It is recommended that the contractors wiring enter through the concrete base as indicated on the approved shop drawings.

**PART 3 – EXECUTION**

*1.01      INSTALLATION*

A.) Piping and Blower System 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 support piping to eliminate pipe strain on the blower system.
3. Blower shall be piped as shown on the plans.
4. 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.

