



## Hi-Vac® Model 450 Portable

### I. General

The Hi-Vac® Model 450 is a heavy-duty industrial vacuum loader consisting of a powerhead, material collection hopper, support frame and airlift. The Hi-Vac® Model 450 is an ideal industrial vacuum source to power permanent in-plant piping systems.

### II. Power Module

The Hi-Vac® Model 450 is electrically powered and features a 50 horsepower, 480 VAC, 3 Phase, 60 Hz, TEFC, electric motor. A NEMA 12 control panel is provided with all necessary controls and motor starters. All Hi-Vac® units feature a positive displacement rotary lobe type vacuum producer with ductile iron impellers and high temperature seals. A cast aluminum flap on the vacuum pump discharge silencer acts as a check valve to prevent the vacuum pump from reversing direction and pressurizing the system.

### III. Material Collection Hopper

The Hi-Vac® Model 450 features a large 1.5 cu. yd. (1.15 cu. m.) capacity main material collection hopper. The hopper is constructed of reinforced carbon steel and is designed to handle negative pressure over 18" Hg. The collected material enters the hopper through the centrifugal separator located at the side of the powerhead. The centrifugal action of the air as it enters the hopper assures that only the finest particles get carried into the linear separator and the baghouse for final separation from the air stream.

### IV. Air Lift

The Hi-Vac® Model 450 is equipped with an air lift device to raise the Power Module from the Material Collection Hopper allowing the hopper to be removed for emptying. The Air Lift requires an external compressed air supply of 80 PSI at 1.0 CFM.

### V. Filtration System

The Hi-Vac® Model 450 features a unique three stage filtration system consisting of the initial centrifugal separator, a linear separator and a fabric dust collector. The centrifugal separator removes the majority of the material, usually more than 90%, entering the Hi-Vac®. The linear separator is located between the centrifugal separator and the dust collector. It incorporates changes of speed and direction in the airflow to further reduce the amount of material in the air stream. This unique stage also removes water and entrained moisture allowing the Hi-Vac® to convey virtually any material that will fit through the hose. The dust collector is the third stage of separation. It includes 12 envelope style filter bags having a total filtration area of more than 300 sq. ft. (27.9 sq. m.). Filter cleaning is accomplished by a shaker mechanism. When the filters become dirty the Hi-Vac® automatically turns off, shakes the filters clean and restarts. An additional set of re-usable metal filters is located between the dust collector and the vacuum pump. In the event a filter in the dust collector fails, these dust passage filters collect the material thus preventing damage to the vacuum pump. A pressure differential switch detects when these filter become dirty and automatically turns off the Hi-Vac® and activates a warning light on the control panel.



## Hi-Vac® Model 450 Portable (continued)

### VI. Anticipated Performance

The Model 450's 50 horsepower motor and positive displacement rotary lobe type vacuum producer provide the following performance specifications:

|                       |                    |                            |              |
|-----------------------|--------------------|----------------------------|--------------|
| <b>Horsepower:</b>    | 50 HP (30 KW)      | <b>Conveying Rate:</b>     |              |
|                       |                    | Nominal =                  | 240 lbs/min. |
| <b>Vacuum Rating:</b> | 18" Hg (457 mm Hg) | Maximum =                  | 480 lbs/min. |
| <b>Air Flow:</b>      |                    | <b>Conveying Distance:</b> |              |
| No Load =             | 1039 CFM           | Nominal =                  | 225 ft.      |
| Full Load =           | 873 CFM            | Maximum =                  | 500 ft.      |

Material handling rates and conveying distance will vary based on the bulk density and particle size of the material, as well as the skill and efficiency of the operating personnel.

### VII. Controls

The Model 450 Hi-Vac® features a complete package of instrumentation for operation at 120V/1PH/60HZ and product protection controls. Standard features include the following:

- Solid State programmable controller with LED display of all machine functions
- Start and Stop pushbuttons with system "Running" pilot light
- Filter bag differential gauge and automatic shutdown, clean, and restart cycle
- Vacuum gauge and high vacuum relief valve
- Hopper full level control with automatic shutdown and "Hopper Full" pilot light
- Vacuum pump high temperature gauge and automatic shutdown
- Vacuum pump low oil level switches and automatic shutdown
- Broken filter bag detection and automatic shutdown

### VIII. Miscellaneous

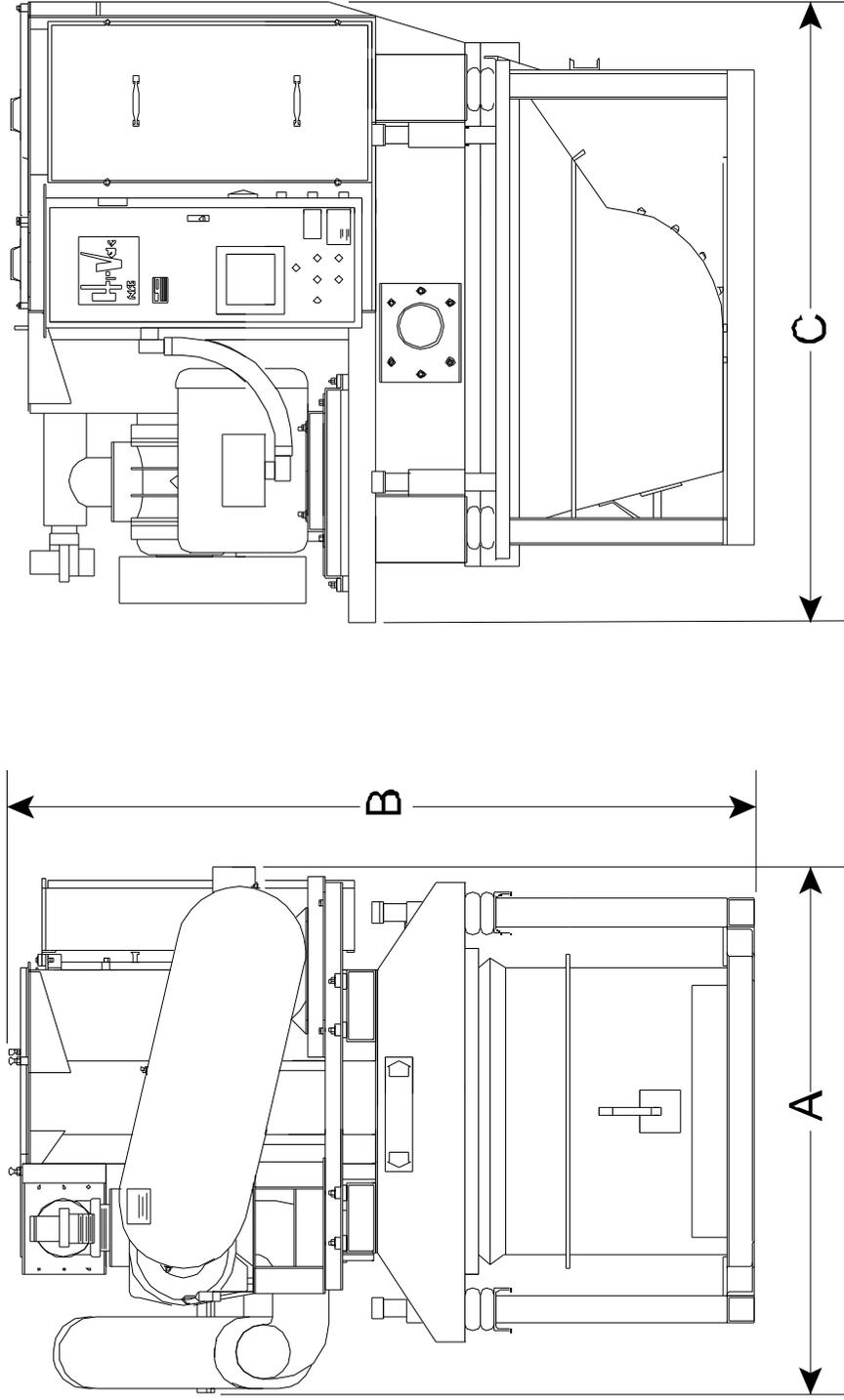
All Hi-Vac® units include ten (10) Operation and Maintenance Manuals as standard. Additional manuals are available at \$100.00 each. Units are primed and painted with a durable industrial enamel. Standard color is yellow or your choice of any single color specified on written order. All Hi-Vac® equipment is covered by our twelve (12) month warranty covering defects in materials and workmanship excluding normal wear components such as filters and hose.

### IX. Additional Equipment

The proposed Hi-Vac® model 450 includes the following equipment in addition to the features listed above:

- NONE

# STANDARD PORTABLE HI-VAC DIMENSIONS



| HOPPER SIZE | 300 Series |     |     | 200 Series |      |     | 200LC Series |     |     | 400 Series |      |     | 200D Series |      |      | 400D Series |      |      |  |
|-------------|------------|-----|-----|------------|------|-----|--------------|-----|-----|------------|------|-----|-------------|------|------|-------------|------|------|--|
|             | A          | B   | C   | A          | B    | C   | A            | B   | C   | A          | B    | C   | A           | B    | C    | A           | B    | C    |  |
| 10 CU. FT.  | 47"        | 77" | 45" |            |      |     |              |     |     |            |      |     |             |      |      |             |      |      |  |
| 1.0 CU. YD. | 60"        | 70" | 74" | 73"        | 95"  | 74" | 70"          | 75" | 90" | 73"        | 102" | 88" | 97"         | 95"  | 134" | 97"         | 102" | 148" |  |
| 1.5 CU. YD. | 60"        | 84" | 74" | 73"        | 109" | 74" | 70"          | 89" | 90" | 73"        | 116" | 88" | 97"         | 109" | 134" | 97"         | 116" | 148" |  |
| 2.0 CU. YD. | 60"        | 84" | 74" | 73"        | 109" | 74" | 70"          | 89" | 90" | 73"        | 116" | 88" | 97"         | 109" | 134" | 97"         | 116" | 148" |  |

