CVAC™ Systems, Inc. Pre-Installation Information

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This document contains the necessary information for a Standard CVAC System Installation and assumes the availability of a finished space. If you are planning or desire a custom CVAC System installation that differs from the information contained in this document, please notify your CVAC Systems, Inc. sales representative.

From a footprint/space requirement standpoint, the CVAC System consists of a CVAC Pod™ and a Control Unit connected by electrical cabling and air flow hoses. Dimensions, weights and temperatures listed in the document are in U.S. Customary Units. The following table provides the weights, dimensions and temperatures considered for the installation of a CVAC System provided in U.S. Customary Units and their metric equivalents.

Table-Weights, Dimensions and Temperature Conversions

	U.S. Customary Units	Metric
Unoccupied floor space	8’ by 10’	2.44m by 3.01m
Ceiling height	8’	2.44m
Control Unit dimensions	24”D x 28”W x 72”H	60.96cm D x 71.12cm W x 182.88cm H
Control Unit operational weight	368 lbs.	167kg
Air filter (sound dampener)	6” H	15.24cm
Air inflow filter	9” H	20.32cm
CVAC Pod dimensions-closed	40”W x 84”L x 54”H	101.6cm W x 213.36cm L x 137.16cm H
CVAC Pod dimensions-open	40”W x 84”L x 93”H	101.6cm W x 213.36cm Lx 236.22cm H
CVAC Pod approximate weight	340 lbs.	154 kg
Optimal measured doorway width	Greater than 42”	Greater than 270.97cm
Measured doorway widths that require CVAC Pod disassembly	32” to 41”	81.28cm to 104.14cm
Electrical power cord 110v	10’	304.8cm
Electrical power cord 220v	7’	213.4cm
Optional Outflow (Copper pipe)	1 ¼“ Diameter	3.175cm Diameter
Distance between CVAC Pod and Control Unit with standard connections	6’	1.83m
Maximum temperature allowed when a CVAC System is in use	75°F	24°C

1. Space-Planning Considerations for a Standard CVAC System Installation

1.1. CVAC System Components-The Control Unit

The Control Unit stands six feet high. Two filters, six inches high and nine inches high, will be installed on top of the Control Unit. The need for access to these filters will require additional vertical space.

Image 1: Control Unit
24”D x 28”W x 72”H;

1.2. CVAC System Components-The CVAC Pod

When closed, the CVAC Pod measures 54” high (see Image 2). When open, the CVAC Pod measures 93” high (Image 3).

Image 2: CVAC Pod (closed)
40”W x 84”L x 54”H

Image 3: CVAC Pod open)
40”W x 84”L x 93”H

1.3. Site Space Planning

i. 8’ by 10’ of unoccupied floor space with a ceiling height of 8 feet conforms to a standard installation of a single CVAC System. Smaller spaces may be feasible based upon custom site design. Contact your CVAC Systems, Inc. sales representative.

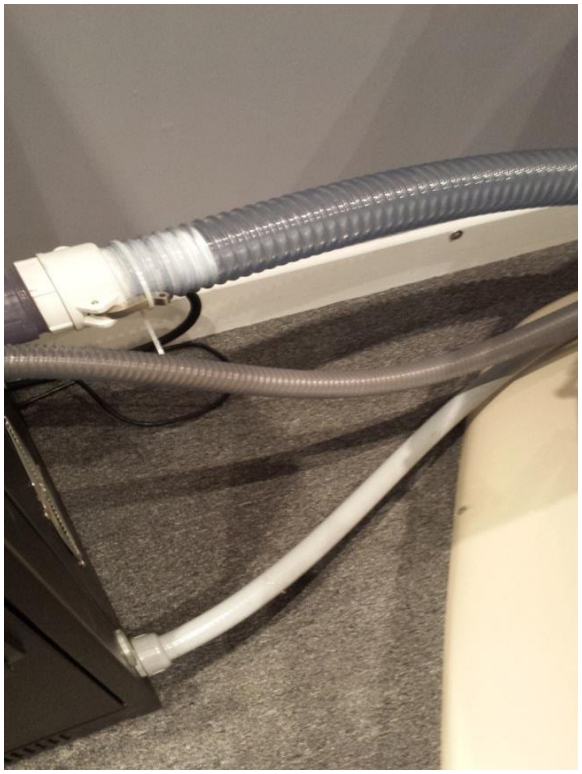
ii. The ideal measured width for all doorways encountered for accessing the space where the CVAC System is to be installed is forty-two inches (42’’) wide or greater. Moving a CVAC Pod through doorways measuring less than 42 inches requires the CVAC Pod to be disassembled. CVAC Systems, Inc. personnel will need protected spaces to perform disassembly and re-assembly of the CVAC Pod.

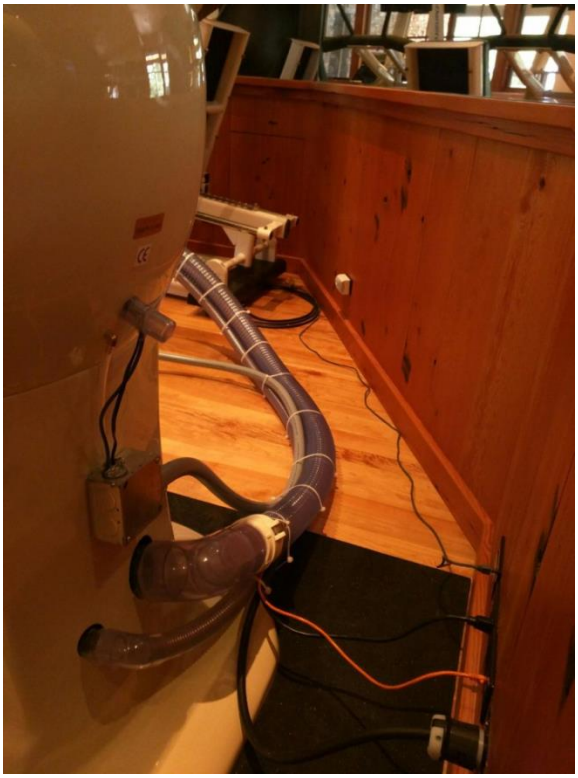
iii. The minimum measured door width is thirty-two inches (32”).

iv. All connections (including air hoses and electrical cords) will require floor space. The 110v electrical power cord is 10 feet long. The 220V electrical power cord is 7 feet long. Images 4 and 5 show CVAC Pod to Control Unit connections.

- Please provide your CVAC System, Inc. installation representative with the measurements for all doorways that will be encountered during installation.

- All modifications to the lengths of connections must be arranged as part of the Sales and Service Agreement. Please contact your CVAC Systems, Inc. sales representative.





Images 4 and 5: Standard Connections between the CVAC Pod and the Control Unit

v. The Control Unit's airflow connection requires the Control Unit to be placed on the left side of the CVAC Pod as viewed from the front looking at the CVAC Pod; this view is depicted in Image 6. Also, the red arrow shows the airflow connection on the CVAC Pod. Contact your CVAC Systems, Inc. sales representative to address any potential modification to the s CVAC System Installation as it must be arranged as part of the Sales and Service Agreement.

Image 6: Looking at the CVAC Pod from the front

Image 7: A Standard CVAC System Installation

1.4. Temperature Control Considerations for a Standard CVAC System Installation

i. More than half of the heat produced by the CVAC System exits through the output flow of the high-performance blower located in the Control Unit. This outflow pipe exits the Control Unit through the air filter (sound dampener) at the top back-left corner.

ii. The heat load produced by the Control Unit will vary based upon duty cycle, Tier level used and whether or not air outflow is directed outside of the space.

- If the air outflow is not directed out of the air-conditioned space, the peak heat output is 20,500BTU per hour.

- If the air outflow is directed out of the air-conditioned space, the heat output is approximately 500BTU per hour.

- The air can be directed outside of the building with 1 ¼" diameter copper pipe to further reduce heat and noise. Although CVAC Systems, Inc. knows that this directed outflow is an effective modification, it is not part of the Standard CVAC System Installation. The buyer of a CVAC System is responsible for any modification to the piping or the building. Notify your CVAC Systems, Inc. sales representative if you choose this option.

iii. The installation space must be air-conditioned and capable of maintaining a constant temperature at or below 75°F when the CVAC System is in use. We recommend that the installation space has a dedicated thermostat to control the temperature.

1.5. Electrical Service for a Standard CVAC System Installation

Please note that the CVAC System requires two separate electric services; one for the high-performance blower and another for the computerized automation systems.

1.5.1. High-Performance Blower

i. A 200V to 240V, 30A three-phase power connection is preferred; however, if this connection is not available; you may choose one of the following two power connection options:

- 240 to 250 Volts 30 amps single-phase; neutral is not used; or
- Single-Phase voltage < 240 VAC requires a Booster Transformer to 240 volts and fused for 30 amps at the load end. Please contact CVAC Systems, Inc. for further instructions if this option is chosen.

Many different connections can be accommodated as part of a custom CVAC System Installation. Contact your CVAC Systems, Inc. sales representative for further information.

ii. CVAC Systems, Inc. will provide one 30 amp L-15 30R (twist-lock) receptacle and a faceplate for each CVAC System installed. We recommend that a licensed electrician installs the receptacle prior to the installation of the CVAC System.

iii. Peak Power Draw: Approximately 6.4KW (on 3-phase). Note: power draw is somewhat higher on single-phase. Power draw varies based on site elevation and specific pressure sequences.

1.5.2. Computerized Automation Systems

110V 15A single-phase power or 220V 7amps fused at or below 20 amps with one operational 110V or 220V receptacle that is not connected to an ON/OFF switch.

1.6. Internet Service for a Standard CVAC System Installation

A dedicated, hard-wired (land line) high-speed internet connection is necessary for normal operation of the CVAC software. This internet connection will also be used for offsite technical support and software upgrades as needed.

After the decision to purchase a CVAC System has been made, the purchaser should provide a floor plan or other drawing indicating the following:

- Room dimensions
- CVAC System placement within room
- Access doorway dimensions
- Pathway that the CVAC System will need to take through the building to its specific location.
- Stairs
- Changes in floor level other than stairs
- Elevator

1.7. Noise Reduction Options

The Control Unit generally produces a noise level below 72dB and typically ranges between 67 and 78dB while operating. Noise level can vary from site to site based upon size of site, site configurations, technical variations, and whether or not the air outflow is directed out of the room (as mentioned previously in this document).

At most sites, directing of the air outflow outside reduces the noise level. The following are additional measures that you can take to help reduce the sound level in a noise-sensitive environment. Please note that this listing represents options known by CVAC Systems, Inc. to be useful; they are not part of the Standard CVAC System Installation.

- Place or hang acoustic baffling tiles around the CVAC System.
- If the CVAC System is placed in a corner it may cause constructive interference because the sound can bounce off of the two walls that create the corner. Consider installing acoustic baffling fabric panels on the walls.
- Install the CVAC System in a carpeted room or area. If full carpeting is not feasible, obtaining a heavy area rug (as large as possible) is recommended.
- If a dedicated room for the CVAC System is not available, install a padded partition if possible, (e.g., cubicle wall or partition with acoustic baffling fabric).
- Hang heavy curtains on the walls surrounding the CVAC System.