

# Important things to know about compressor installation sites

(NOTE: IF YOU ARE NOT COMFORTABLE CHECKING ELECTRICAL POWER HAVE A TRAINED ELECTRICAL PERSONAL CHECK THE POWER)

## When checking for electric power on land line powered packages

(This Process requires a voltmeter/amp probe)

1. Make sure your voltmeter/amp probe has a good battery installed
2. When checking for voltage on single phase applications
  - A. Put one probe of voltmeter/amp probe on L1 (Line 1 of incoming power) and the other on L2 (Line 2 of incoming power). This will ensure that you have an accurate reading of the current volts supplied to the existing compressor that you are replacing, or for the new installation you will be selling.
    - Reading to ground will not give you an accurate reading for current volts.
    - If voltage is below 207 volts at any time, a 200 volt motor would be required for the application. These motors come with added cost.
  - B. When applying a 10hp 1 phase compressor package. For the compressor and compressor package drive motor to perform properly. The voltage needs to be above 210, amperage available for the compressor needs to be 100, and the wire size needs to be #6 or larger. If one of these requirements is not meet you will see premature compressor package motor failure.
3. When checking voltage on 3 phase applications
  - A. Put one probe (of voltmeter/amp probe) on L1 (Line 1 of incoming power) and the other probe on L2 (Line 2 of incoming power). Then put one probe on L1 and one probe on L3 (Line 3 of incoming power). Next put one probe on L2 and one probe on L3. Record all three of these readings. This will ensure that you have an accurate reading of the current volts supplied to the existing compressor that you are replacing or for the new installation you will be selling.
    - Reading to ground will not give you and accurate reading for current volts.
    - If voltage is below 207 volts, a 200 volt motor would be required for the application. If voltage is above 506 volts, then a 575 volt motor would be required. These motors come with added cost.

## When checking compressor install location

1. Make sure that the area the compressor is going to be installed in has adequate room around the compressor for proper ventilation and service access. A general rule of thumb is a minimum of 18 inches on all sides of the compressor for service access on reciprocating compressors and 24 inches on rotary screw compressors.
  - A. Under heavy operation a screw compressor can reach temperatures of 230F and the head of a reciprocating compressor can exceed 350F. Make sure there is adequate ventilation for cooling air to reach the compressor package. Also make sure there is adequate ventilation/exhaust to remove the hot air from the area.
2. On standard packages, make sure the area is weather tight and that liquid water or direct sunlight will not be on the compressor package.
  - A. You can add TEFC drive motors, NEMA 4 controls and other features to the units if the compressor package is going to be in an outdoor or uncovered application. These features add to the cost of the package; some more than others.
3. Since rotary screw compressors are cooled by flowing clean fresh air through their oil cooler, it is important that the area of installation is as clean and free from flying dust or contaminant that may clog the compressor oil cooler. In some cases a special remote cooler installation is needed. This can be done for an added cost to make the compressor package work in the application.
  - A. For rotary screw compressor packages going into excessively dusty or hot environments, there are additional feature that can be added to the package to aide in normal operation in those environments.
4. If installation location is on the 2nd story or higher, on a mezzanine or other structure that elevated off the ground then you will need to take into account resonance noise from the compressors that can be transferred through the structure to the areas below the compressor package. In some cases mezzanines or like structures can amplify the compressor noise. This need to be taken in account for when selecting the location for the compressor installation.
  - A. In general the best location for a compressor is in its own equipment room on the ground floor of a facility this makes the package more accessible for maintenance. It cost considerably less money to run air piping to the 5th floor than to put the compressor on the 5th floor of a building.

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5. If mounting the compressor in a mobile application (trailer, box truck, sea container etc.) The floor will need to have enough structural support to hold the compressor package and account for the operational vibration

**A.** On all compressor packages that will be going into a mobile application (trailer, box truck, sea container etc.) make sure that the package is not located near combustible materials as some parts of the compressor during operation will heat up to 230F on screw compressors and 350F+ on reciprocating compressors. (Engine driven packages exhaust temperatures will exceed compressor package radiant heat. See engine manufactures manual for proper installation sites)

**B.** On engine driven compressor packages consult driven engine installation/operational manual for proper mounting locations for engine driven equipment.

## Compressor package maintenance

1. Always be aware of the standard maintenance required on the compressor package. All air compressors require maintenance some more than others. The more defined and executed the maintenance schedule the better the compressor package will operate. It is always recommended to have the compressor package on a maintenance plan.

**B.** The below is an example of a reason for a proper maintenance plan.

- 500hrs of operation on a personal vehicle is approximately 15,000 miles of driving, with temperatures around 210 degrees
- A rotary screw compressor can operate up to 230F, and a reciprocating compressor can operate up to 350F+ in heavy duty cycle applications.

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