

GENERAL:

1. The purpose of this design guide is to:
 - 1.1. Standardize the types and quality of vacuum air provided that is considered part of the facility systems.
 - 1.2. Standardize both the type of Vacuum Pump used and the installation details to facilitate the operation and maintenance of air compressors.

DESIGN GUIDELINES:

1. Types of Vacuum.
 - 1.1. University facilities may have 2 types of vacuum systems. These are:
 - 1.1.1. Laboratory Vacuum. For general lab use.
 - 1.1.2. Medical Vacuum. Utilized in hospitals and vet facilities
2. The facility Vacuum system will provide lab vacuum. If medical vacuum is required, it is the responsibility of the department to provide and maintain this system. All medical vacuum systems shall be separate and independent of the facility system.
3. Sizing.
 - 3.1. Vacuum air sizing shall be based on generally accepted methods, using 1 scfm per lab outlet and applying a diversity factor based on the number of probable outlets in use.
 - 3.2. Run time. The compressor shall be selected to provide a 30% run time based on a single compressor running. Duplex compressors shall be selected such that the combined run time shall not exceed 30%.
4. Vacuum Pumps shall be located in accessible locations for maintenance. A minimum 3 ft access space in front of serviceable belts, machine guards, oil reservoirs and electrical components shall be provided. Location shall not expose staff to other hazards such as hot piping, or heights.
5. All compressors shall be provided with a house keeping pad.
6. Vibration isolators shall be provided. Slab on grade may utilize rubber cork pads.
7. Installations on upper level floors should be analyzed for vibration and spring isolators/inertia pads provided if necessary.
8. Provide piping vibration isolators between compressor and fixed piping.
9. Compressors should be Simplex/Duplex, alternating design, as directed by the project manager.
10. Power and Controls. On duplex compressors, provide a power circuit for each compressor motor and a separate power circuit for the controls.

11. Submittals should include catalog data, certified sound power ratings, Motor ratings and electrical characteristics plus motor and fan accessories. Shop drawings from the manufacturer detailing dimensions, weights, required clearances, components, and location and size of each field connection for each product specified
12. Close out manuals should include both Installation and Operations and Maintenance Manuals
13. Specification Requirements
 - 13.1. Typical codes, standards and warranties shall apply and as indicated below
 - 13.2. Provide a simplex/(duplex) tank mounted, two stage, reciprocating air compressor complete with tank, motors, drives and controls as specified herein.

Capacity	SCFM @ 125 psig
Tank size	Gallons
Motor HP	HP
Compressor RPM	RPM (maximum)
Electrical Service	_____Volts/3 PH/60Hz