Rotary Screw Compressor Sizing

Body Shops

To properly size a body shop application, first find the total number of workers in the shop. Second multiply that number by 8. Which is the average amount of Cfm used by any one person through out the day. This makes sure that the compressor stays within its desired 50% duty cycle. (or any shop that does a lot of sanding and grinding)

Example: Total number of workers-7

7 People x 8 cfm=56 Cfm

*For this shop to operate within the desired 50% duty cycle you would need **56 cfm** of air delivered.*

Mechanic Shops.

To properly size a mechanic shop first find the total number of workers in the shop. Second take that number and multiply it by 5. The average amount of cfm used by a mechanic through out the day. This makes sure that the compressor stays within its desired 50% duty cycle.

Example: Total Number of workers - 6

6 People x 5 cfm = 30 cfm

*For this shop to operate within the desired 50% duty cycle you would need **30 cfm** air delivered.*

Total cfm Usage.

To properly size a shop based in total cfm. First get the manufacturer recommended cfm for all the tools that are used on a daily basis in the shop. Second take their total cfm's together and multiply that number by 1.3 to get the total cfm needed for the shop.

Example:

DA Sander	10 cfm
Air Impact	6 cfm
HVLP Paint Gun	15 cfm
	Total 31 cfm
	31x2=62 cfm

*For this compressor to operate within the desired 50% duty cycle you would need **62 cfm** of air delivered.*

Symptoms of improperly sized rotary screw compressors

1. Excessive Heat
2. Low air pressure
3. Unit never unloads
4. High temp shutdown

Compressor Knowledge.

Rotary screw compressors are constantly running machines, they do not start and stop like piston compressors. Rotary screw compressors require a tank for storage, too ensure proper inlet valve life.

Rotary Screw compressors are temperature controlled by an oil cooler, so they must have adequate ventilation to ensure proper cooling.

The oil and filters for rotary screws are specifically designed for the units, so that they operate to certain CAS specifications The oil in a rotary screw compressor is changed once a year in 9-5 Mon-Fri applications. It would be changed twice a year in applications that run more than one shift or put more than 4000hrs per year on the machine

Oil filters are changed 4 times a year in typical 9-5 applications, and separators once a year. In applications were the business runs more than one shift you change the oil filter 8 times per year and the separator 2 times per year.

Things to remember.

When you are sizing a shop be sure and check for air leaks, in older shops there is generally more air used because of leaks than employees working.

If there are leaks then the customer will need to either upgrade to a larger compressor, or get the leaks fixed before the new compressor is installed. This is to ensure proper duty cycle on the new compressor.

Always make sure that the electrical breaker for the compressor is sized appropriately according to local and state electrical code. This helps to ensure proper motor and electrical component life.

All compressors have electrical components so they must be located in a place that water, excessive heat, and heavy dust will not affect them, as this can cause pre-mature failure of these components.

Customers do not complain about too much air, but they will always complain if they do not have enough.

If a customers properly maintained compressor suddenly fails its probably due to its duty cycle being extended past what it is capable of.

So be sure to check to see if new employees or equipment have been added that use air. This will ensure that the new compressor has a long and trouble free life.

All Compressor are pre-set and tested at the factory, contact the factory if you feel like anything needs to be changed.

Compressed Air Systems

Simplicity. It's What We Do.

compressed-air-systems.com | 1-800-531-9656 | Fax 972-352-6364

© Compressed Air Systems, LLC 7-2016