Choosing the Right Air Compressor: Consider Power and Storage Needs

Ingersoll Rand manufactures compressors to serve each segment of the air market. Compressors range in size from small, portable tanks to 400 hp systems used in industrial applications.

Vehicle service and repair shops commonly rely upon 5-to 10-hp compressors that have 80- to 120-gallon tanks to power the garage's pneumatic tools.

There are several things to consider when buying a new - or upgrading an old - air compressor for your business, say Ingersoll Rand officials. For example:

- What do you want the air compressor to do?

- How often will it be used during the day?

- What types of applications, equipment and tools does it need to support?

- Should I purchase a stationary or portable compressor?

- Does the compressor have to support multiple users?

Based on the answers to these questions, a tool and equipment professional can help you determine what size air compressor is best suited for your application, the officials say.

"A lot of customers tell me, 'Mike, I need an air compressor with an 80 gallon tank,'" says Mike Purtell, vehicle services strategic channel manager for Ingersoll Rand. "While the tank is a necessity, it shouldn't be the deciding factor in the buying process."

Cubic feet per minute

Purtell explains that it is more important to select an air compressor that provides enough cubic feet per minute (cfm).

“CFM is going to determine how many tools you can run, and how much power you’re going to have.”

Every air tool has an operational cfm requirement, and every air compressor has a maximum cfm output. The air compressor’s cfm output must be greater than the cfm requirement to keep all the pneumatic tools in the shop operating efficiently.

There is no perfect formula for calculating your shop’s peak cfm demands, but a general rule of thumb is 5 cfm per technician.

Demanding tools

“For example, a ½″ impact wrench typically requires 5 cfm at 90 pounds per square inch (psi). This means your air compressor’s cfm output needs to be greater than 5 cfm to get optimal performance from that tool,” says Purtell. “If two technicians want to operate ½″ impact wrenches simultaneously, you’ll need a compressor that produces at least 10 cfm.”

Buyers should select a compressor with enough cfm to support the most demanding tools in the garage to ensure you have enough capacity to complete tough applications. Continuous-use air tools, like cut-offs, grinders and sanders, typically have much higher cfm requirements than intermittent use tools, like an impact wrench or ratchet.

“Service technicians will use an impact wrench for 20 to 30 seconds, and then put it down to change the tire,” says Purtell. “But a body shop may use a sander or grinder for 20 to 30 minutes at a time, and that constant use of air is going to require a higher cfm. If you have to stop working and wait for pressure to build up, your compressor is too small.”

PSI rating

All compressors have a psi rating that should also be taken into consideration when evaluating the right size for your application. Single-stage models compress the air in one stroke and typically have a maximum rating of 135 psi; two-stage models compress the air in two strokes and typically max out around 175 psi.

Most air tools require 90 psi, so the most significant benefit of a higher rating is greater air storage.

“When you compress air to a higher pressure, you are basically taking up less space in your air tank,” Purtell explains. “As a result, you have more ‘usable’ air in a tank at 175 psi than 135 psi. For a professional shop, two-stage air compressors are a must.

“Remember, cfm is for power. PSI is for storage.”

Performance factors

Air compressors can be a significant investment for business owners, so it is important to understand the factors that affect its performance before you buy.

“As you weigh your options, evaluate your shop’s current cfm requirements, but also forecast your future demands,” says Purtell. Are you planning to add technicians or equipment to expand your business? Then, you may want to purchase a larger compressor.”

Contact your Ingersoll Rand tool and equipment professional for help identifying the best air compressor for your shop. To learn more about the complete line of Ingersoll Rand air compressors, visit ingersollrandproducts.com.

[photo caption]

Continuous-use air tools, like, grinders and sanders, typically have much higher cfm requirements than intermittent use tools, like an impact wrench or ratchet.

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