Quincy
COMPRESSOR

Air Compressor Buying Guide

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Air Compressor Buying Guide

Air compressors are a convenient way to complete many jobs, whether you're a homeowner looking for an efficient way to wash your patio or a warehouse manager looking to streamline production.

People began using compressed air as far back as the 1500s with an invention called bellows. These small, handheld devices blew air into fires, creating hotter temperatures. Inventors soon found ways to make the first air compressor more efficient, creating new instruments to perform the same task. At the start, air compressors were limited in their function.

However, air compressor technology continued to develop as the years went on, and there are now multiple applications for the many different devices. Industries of all types use air compressors, and many homeowners own an air compressor. These devices can speed up many processes and help businesses reduce their overall costs.

Air compressors are pneumatic devices that convert a power source into energy stored and utilized as pressurized air. Modern air compressors generally come with a tank, where the air is stored, creating additional pressure. The tank holds the pressurized air until it's time to use it, and then the air is released as a powerful stream. The air compressor turns on when the tank's supply gets low to repressurize the tank, allowing for a continuous air supply.

Modern air compressors come in numerous models, allowing for various applications. With the many different types available, it can be hard to choose a single option. For example, reciprocating piston air compressors can power many tools for homeowners and businesses alike. On the other hand, rotary screw air compressors typically have industrial uses since they deliver powerful airflow.

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This guide will help you learn how to buy an air compressor and what you should look for before purchasing. We'll go over the types of air compressors you'll come across in your search and the power sources and specs for various air compressors. Some air compressors will work better in specific settings than others, so it's essential to understand your available power supply and specifications.

We'll also cover the many uses of air compressors to show you how variable these devices can be. You may even find new ways to use air compressors in your home or for your business. We'll review some questions you should ask before purchasing an air compressor to help you choose the correct device. These questions will serve as a starting point, though you can always add more questions to your personalized list to ensure you're getting everything you're looking for.

Lastly, we'll go over where to buy an air compressor to save you the hassle of searching for a quality device. The experts at Qunicy Compressor can help you find a device that's suited to your needs. We'll also help you find a location near you to use your air compressor as soon as possible. Continue reading to learn everything you need to know about buying an air compressor.

Chapter 1:

Types of Air Compressors

Air compressors use different mechanical components to increase the air pressure and reduce the amount of trapped air. When choosing an air compressor, you'll want to consider the different types to ensure you make an informed choice. Here are the different air compressors you'll find in your search.

Rotary Screw

Rotary screw compressors use two screws to reduce the volume of trapped air, with the meshed twin spiral screws working together to maximize air payout and intake. These compressors use a positive displacement system, meaning the air fills a sealed chamber and moves between the two rotating screws. The air in the chamber becomes compressed to adequate pressure for various applications.

Rotary screws can be used in heavy-duty situations where precise air control is necessary, and the flow rate is higher than some other air compressors. These compressors are extremely durable, making them reliable for all kinds of uses. They can also operate safely under extreme temperatures. Rotary screw compressors are ideal for the automotive industry because they can withstand these temperature fluctuations, especially since they require less regular maintenance and can perform for long periods.

Reciprocating Piston

If you're looking for a commonly used and trusted air compressor, reciprocating piston compressors are the way to go. These air compressors are often used for refrigeration, manufacturing, agriculture, automotive and other numerous applications.

Reciprocating piston air compressors work by using a crankshaft, which moves the piston back and forth, reducing the amount of air. The extending piston helps push compressed air into the tank until it builds to an adequate level.

These compressors are easy to transport and don't require a lot of maintenance. However, they can produce more heat and noise than other types of compressors. As a result, these compressors don't often run continuously, making them better for short, powerful bursts of compressed air.

Scroll

Scroll compressors are excellent for industries requiring varying levels of intensity. These compressors work by using a spiral-shaped scroll, which moves in a circular motion to reduce air volume. These compressors are usually quieter and can last a long time, making them a popular choice.

Many industries use scroll compressors, including automotive, refrigeration and manufacturing. They produce high-quality, clean air, which many consumers love. There are oil-free models, but some require lubrication if they work at a higher pressure.

Portable vs. Stationary

You can choose air compressors that are either portable or stationary. You can easily move portable compressors across your work site or home, while stationary compressors are generally only used in one location. Mobile models tend to be lightweight and can support many tasks but sometimes don't have a large enough tank size or specs to get bigger jobs done.

Stationary generators are larger and can't move much, if at all, but they're excellent for industries that need a consistent, high supply of air pressure in one location. You can choose from many different models of each type to find one that suits your needs.

Oil-Flooded vs. Oil-Free

There are two categories of oil pumps to consider when buying your air compressor: oil-flooded and oil-free.

Oil-flooded air compressors lubricate walls and bearings using oil, and the oil can sometimes splash. These systems are often very durable but can be noisy and produce a lot of heat due to their design.

Oil-free air compressors provide adequate lubrication without letting the oil contaminate the pressurized air. These compressors tend to produce less noise and aren't as prone to overheating as oil-flooded compressors, which can help reduce the need for maintenance or repairs.

Two-Stage vs. Single-Stage

Reciprocating piston air compressors use pistons to pressurize the air in a cylinder using either a single- or two-stage process. Home air compressors often use single-stage, while compressors in businesses or industries are often two-stage.

Single-stage compressors use a single piston stroke to fill the cylinder, while two-stage compressors use two-piston cylinders to pressurize air through two different chambers. Two-stage compressors tend to make compressors more effective so you can run more tools off of a single compressor.

If you're looking to buy a new air compressor, you'll want to understand the differences between each type of compressor. Certain units will work better in some industries than others. Quincy Compressors can help you find the air compressor that suits all of your needs. Our experts have serviced all types of industries for nearly a century, so we have the knowledge and experience to pair you with the best unit for your requirements. Find one of our locations near you, or contact us today!

Chapter 2:

Air Compressor Power Sources and Specifications

Every air compressor relies on a power source and comes with different specifications to help you determine if they're suitable for your needs. Some industries need a heavy-duty air compressor, while others only require something smaller yet portable. Understanding the two primary power sources and specifications can help you make an informed decision when purchasing your next air compressor. This chapter guides you through the two power sources for air compressors and the different specs to look for before purchasing one for your work.

Electric-Powered Air Compressors

Electric-powered air compressors rely on electricity, as the name implies. People often use these compressors inside, where electrical outlets are more common. Some of the benefits of choosing electric air compressors include:

- **Portability:** Electric-powered air compressors are generally portable, allowing you to take them from one location to the next. However, they have limited mobility, meaning you can't take them everywhere with you. These electric-powered air compressors require at least a 120-volt household current, so ensure your location has the proper setup before purchasing this type of compressor.

- **Quietness:** On top of being portable, electric-powered air compressors are also very quiet compared to gas-powered compressors, primarily due to the absence of a gas-powered

motor. Your job site can benefit from the quietness of these air compressors, allowing you to continue your work in peace.

- **Tendency to have better air quality:** In most cases, electric compressors provide superior air quality since they don't rely on gas or oil. As a result, there is less risk of contamination, which could impact the compressed air quality. Electric-powered compressors are your best option if you want consistent, high-quality pressurized airflow.

- **Commonality:** These air compressors are simpler to operate and require less maintenance than other models. The easy function and minimal requirement of a 120-volt outlet for some models make them more common for many industries, especially those in enclosed spaces, meaning it can be easy to find an electric-powered air compressor that suits your budget and needs.

While electric-powered air compressors are an excellent option if you have access to an outlet, some job sites don't always have these outlets readily available. Electric air compressors are useless without these outlets, so you'll want to know what is available at your job site before choosing this type of air compressor.

Gas-Powered Air Compressors

Gas compressors rely on a fuel source, typically gasoline or oil. These compressors are usually used in outdoor settings as indoor work with a gas-powered compressor can be

dangerous for the people inside. Before you buy one of these compressors, there are a few things you should know about gas-powered air compressors:

- ✓ **Large and hard to move:** Gas-powered air compressors tend to be larger than electric-powered compressors, making them heavier and harder to move. The lack of mobility can be detrimental to some work sites that need to move their air compressors consistently. However, if your job site only requires an air compressor in a few select locations, gas-powered compressors can provide you with the air pressure you need to get the job done.

- ✓ **Noisy:** Gas air compressors often use a loud motor, distracting workers and others nearby. This further limits these compressors to outdoor settings where the noise won't bother as many people or the environment.

- ✓ **Efficient, heavy-duty and suitable for industrial applications:** You can recover the waste heat these compressors generate and use it for other means, making gas-powered air compressors an efficient tool. These compressors can also handle industrial needs, making them an excellent option for many industries. Their efficiency and heavy-duty applications make these air compressors stand out against electric-powered compressors in specific sectors.

If you're trying to decide between an electric- or gas-powered option, consider the functions of air compressors in your industry. Will you predominantly be using the compressor indoors? Do you need to move the compressor around consistently? What

is the standard in your line of work? These questions and others can help you make a final decision. On top of the function, you'll also want to consider what features of air compressors are essential to your field.

Air Compressor Specifications

Each air compressor model has different specifications. Knowing these specifications is essential to ensure you choose the right fit for your needs. Some air compressor specs you should look for include:

- **Horsepower and pounds per square inch:** Horsepower ratings help determine how much power the air compressor's motor can produce. The higher the horsepower, the more air pressure the compressor can generate. The air pressure is measured in pounds per square inch (PSI). Most compressors have a limit on the PSI they can produce. For example, single-stage compressors can only reach 125 PSI. A higher PSI generally allows you to use the air compressor for extended periods. Additionally, many compressors with a higher PSI will switch off on their own once they've reached maximum air pressure inside the tank.

- **Cubic feet per minute:** Cubic feet per minute (CFM) refers to the machine's ability to compress a specific volume or air at a set PSI. Your air compressor's CFM will be higher when your PSI is lower. When looking for an air compressor, you'll want to consider what CFM rating your air tools need. Then, you'll add about 50% to the required CFM to ensure it can provide the appropriate air compression you need.

- **Average CFM:** The average CFM refers to the air tool rating that measures intermittent use, usually a 25% duty cycle. This rating is best utilized for tools that aren't used continuously, as those you use frequently require more calculations to determine the necessary CFM for continuous use. If you want to use your air tools constantly, you can try multiplying the CFM average by four to estimate what rating you'll need for continuous use.

- **Tank size:** The tank's size is the amount of pressurized air you can have at once. Many manufacturers will mark this number in gallons, with smaller tanks ranging from four to six gallons. The tank size you need will depend on the compressed air you need on your job site. For example, industrial applications often need bigger tanks to complete large-scale jobs.

The specifications of an air compressor will help you make an informed decision on your next purchase. Carefully consider your needs before choosing a model so you don't have to worry about making an unnecessary secondary purchase.

If you're looking for a new air compressor, whether electric or gas-powered, find a Quincy Compressor sales and service location near you!

Chapter 3:

Uses of Air Compressors

Air compressors have numerous applications, making them an excellent option for all industries. Air compressors are likely even present in your home, even if you don't know it. Your refrigerator and HVAC system relies on air compressors to operate as expected. Most air compressors come in one of two designs — reciprocating piston air compressors and rotary screw air compressors.

With just these two designs, numerous models and tank sizes are available to meet your needs. Learn more about the many applications of air compressors.

Air Compressors in the Home

Consumer-grade air compressors can help you complete household tasks. Homeowners use air compressors for work or fun, simplifying many tasks and maintenance. You can choose from handheld, portable or stationary models to get all kinds of work done. Here are some of the best uses for air compressors at home:

- ✓ **Pumping tires:** Consistent air pressure in your vehicle's tires helps ensure a smooth ride and prevents a flat while driving. You can also easily add air to bike tires to keep you moving as you please.

- **Inflating things:** In addition to inflating your tires, you can use air compressors to inflate other items, such as air mattresses, sports equipment or pool toys and floaties. Air compressors make it easier to complete these tasks than rely on other tools that don't work as efficiently.

- **Pressure washing:** Pressure washers use air compressors to provide high water pressure to complete various tasks, including cleaning the home's exterior, removing chemicals or improving the appearance of worn-out patios. Pressure washers speed up these tasks that would otherwise take hours to do using different tools or by hand.

- **Carpentry:** Carpentry has many tasks that require air compressors, such as powering nail guns and other tools, preparing different surface types for treatment and removing rust or dust from items or your workstation. Without air compressors, you would have to rely on traditional methods to get the job done, which are limited and time-consuming.

- **Crafting:** Many people enjoy crafting in their free time or use it as a source of income, and air compressors help get many jobs done efficiently. Many air compressors are lightweight and portable, allowing you to carry them around the home wherever you may need them. You can use air compressors for airbrushes, paint sprayers and air-blow guns for cleaning up after a busy day of crafting.

- **Yard work:** Yard work is a menial task many avoid, but air compressors simplify various outdoor jobs. Professional groundskeepers or gardeners often use air compressors in their work, and the average homeowner can do the same. Different ways you can use an air compressor for yard work include shifting pooling water, sweeping debris or spraying weed killers across large yards.

Air Compressors for Business

Small and large businesses can benefit from using air compressors for their many needs. Air compressors can even be necessary to keep specific businesses running as they should. Some companies use their compressed air as a regular power source, supplying power to different tools and equipment. Using an air compressor can help small and large businesses streamline their tasks, including industries such as:

- **Auto body shops:** These businesses can use air compressors for numerous applications, including painting or sanding vehicles and powering different tools. Air compressors help speed up many of these processes, making it easier to complete various tasks promptly and efficiently.

- **Construction and carpentry:** Air compressors are an important part of construction work and carpentry, powering essential tools such as drills and nail guns. These compressors can also clean different machinery, streamlining tasks and allowing workers to move on to the next project as soon as possible.

- **Dental and medical services:** Air compressors are often used in the medical field, such as for the tools used at a dentist's office for suction. These tools help ensure the cleanliness and efficiency of different medical procedures, making them an essential part of the industry.

- **Dry cleaning:** A reliable air supply is a big part of dry cleaning businesses. Compressed air helps these businesses reliably clean clothes by assisting with applying chemicals through cleaning guns and operating different tools, such as steam cleaners.

Air Compressors for Industrial Use

Air compressors are the only option for safety requirements in some industrial fields. Air compressors have had industrial uses for years, and as technology advances, different types of air compressors have become available for specific fields. The various industrial sectors that use air compressors include:

- **Agriculture:** Compressed air can help farmers save on costs and streamline processes. Compressed air is used in the agricultural industry to spray crops with insecticide, ventilate greenhouses and power different types of machinery. Air compressors help farmers keep their crops healthy and on track for distribution.

- **Manufacturing:** Manufacturing covers a broad spectrum of businesses, but air compressors can assist in each one. Air compressors can assist in quickly performing basic tasks, operating various air tools, completing packaging and cleaning up mold or debris. Air compressors help manufacturers complete projects more efficiently and promptly, allowing them to distribute products sooner rather than later.

- **Pharmaceutical:** This industry requires a high level of precision and cleanliness to create products ready for human consumption. Air compressors can help with pressure regulation in mixing tanks, bottling products and spraying medications or other products with a specific coating. Air compressors help streamline these processes so the pharmaceutical industry can deliver products promptly.

- **Energy:** The energy industry requires air compressors to help with maintenance and can even prevent the need for repairs, helping save on costs. The different ways these tools

are utilized in the industry include controlling valves or cooling circuits and powering ventilation systems and various tools. In the energy industry, air compressors help keep workers safe from harm.

- **Food and beverage:** Air compressors are commonly used in this industry for keeping refrigerators cool, packaging products and maintaining equipment that fills drinks.

Other Air Compressor Applications

Apart from the above, you can do many other things with an air compressor, including leisurely activities and specialized industries. Some of the miscellaneous uses for air compressors include:

- **Diving:** Scuba divers often use air compressors in their diving equipment to fill their oxygen tanks to very high pressures. Air compressors ensure the diver's safety while underwater. Other professions also use air compressors to provide clean air, including firefighters, marine contractors and hospitals.

- **Amusement parks:** Air compressors keep amusement parks up and running as they help keep roller coasters, animatronics and other devices operational. Without these devices, amusement parks wouldn't be what we know and love. Air compressors also help ensure the safety and reliability of these rides, such as operating the braking system on a roller coaster.

- **Ski resorts:** At ski resorts, air compressors are used for making snow, particularly when the weather has been stubborn or when things get busy at these resorts. Compressed air helps keep these businesses operating throughout the season, reducing the risk of lost profit due to unnecessary downtime.

- **Paintball:** Another fun activity that utilizes air compressors is paintball. Paintball guns rely on compressed air to propel the paintballs forward, creating pressure behind the loaded paintball before launching it at the target. Without air compressors, the game of paintball likely wouldn't exist as we know it today.

Quincy Compressor serves all of these industries. If you're looking for an air compressor to help you keep up with production or streamline existing processes, contact Quincy Compressor today or find a location near you!

Chapter 4:

Questions to Ask Before Buying an Air Compressor

When buying an air compressor, it's best to get all the details rather than picking something that seems right. Once you understand the specifications of different air models, it can still be challenging to know what type of air compressor you should buy. Asking yourself some questions can help you narrow down what to look for in an air compressor.

Rather than risking getting the wrong air compressor, asking the right questions can help save you time and ensure that you pick the best air compressor for your use from the start.

General Questions to Ask

Here are some general questions to ask yourself before looking for and purchasing an air compressor, which will cover everything you need.

Where Will You Be Using Your Air Compressor?

You first need to determine where you will be using your new air compressor. For example, you may want to use your air compressor across your work site rather than in a single location. In this case, you'll want to look at portable models, many of which come with wheels so you can easily roll the compressor from one location to the next.

Remember that a portable option will likely have less power than a stationary option. If you need a high power level but still something portable, you could consider using longer hoses on a stationary model to reach different locations, so long as the distance between uses isn't too large. This approach allows you to reach the necessary CFM without risking a quick burnout with a portable model or using too much electricity.

Is There a Dependable Electrical Supply?

Some air compressor models require electricity to run, meaning you'll need access to an outlet and a dependable electrical supply. Knowing whether or not you have electricity on site will help you determine if you can go with an electric model or if you'll need gas. Using a gas generator is generally not recommended if you can avoid it, as the fluctuations with generators can cause damage to your air compressor, impacting its life span. It can also affect your warranty from some manufacturers.

Extension cords also tend to be an unreliable fix for air compressors since the power supply from these cords often can't deliver the appropriate amount of power to your unit. Rather than trying to use extension cords, you can use long hoses instead, which will help you reach areas further away while still using electricity. Your owner's manual can also help you determine what types of power cords you can use and how to extend your reach for use.

You'll want to pick a gas model if you cannot find a dependable electrical supply. If you have to use a gas-powered unit, perform regular maintenance and service to keep it functioning at its peak for as long as possible.

What Tools Do You Want to Use With Your Compressor?

The types of tools you want to use will come with different requirements. Knowing what tools you want to use beforehand can help you determine what type of air compressor meets your required specifications.

You'll want to look for the average CFM rating on each tool to help you better understand what you're looking for and what compressor will give you the power you need.

Determining Specifications

Once you know what tools you want to use with your air compressor, you can determine what specifications you'll need to look for during your search. Failing to meet these specifications when buying a compressor could mean that your tools won't work as efficiently, impacting your ability to complete tasks. Consider these specifications when choosing an air compressor.

What Is the Maximum Operating Pressure You'll Require?

Knowing your maximum operating PSI will help you choose the right air compressor since you'll want the same PSI rating. You'll also be able to determine if you need a single-stage or two-stage compressor. Two-stage compressors have an additional compression step, which increases the PSI. The higher your required PSI, the more likely you'll need a two-stage compressor.

You can determine your required PSI by looking at the specifications of your tools. Choose the highest PSI to decide which air compressor you should select. For example, if you have multiple tools and the highest PSI rating is 90, you'll want to pick an air compressor with a PSI rating of at least 90.

What Is the Maximum Air Volume You'll Require?

You'll also want to determine how many CFM you'll need the air compressor to produce. Most tools are marked with an average CFM, which is only about a fourth of its continuous CFM. If you plan on running your air compressor regularly, you should multiply your average CFM by four. This number will help prevent you from underestimating how much air power you need to do the job. Do this calculation with your highest-rated tool to ensure your air compressor will continue to perform during the most demanding uses.

You'll also want to consider whether or not you'll be using one or more air lines for your tools at a time. If you plan on using two or more lines, add together the minimum CFM rating of all the tools you'll use at once to be sure you'll have enough air power.

For example, if you plan to run two lines and one of your tools has a CFM rating of 7 and the other of 6, you should look for a compressor with a CFM rating of at least 16.

What Size Tank Will You Need?

Most manufacturers measure their tank sizes in gallons, and your tank size will affect your ability to use particular tools. For example, continuous-use tools will need larger tanks since they rely on an ample supply of pressurized air. It's not as easy to determine what tank size you need to find the CFM. Instead, the best thing to do is go with the biggest tank you can reasonably afford and house.

Going bigger is better since you won't have to worry about waiting for the tank to fill up as often, making you wait longer to complete jobs and putting a strain on your compressor's motor. Air compressors with bigger tanks can last longer since they won't have to run as often, allowing you to get the most out of your investment.

What Horsepower Is Needed for the Motor of Your Air Compressor?

The horsepower rating helps you determine the motor or engine's power. While it's not directly related to tools, horsepower does help you determine how efficiently the air compressor can deliver the air. Higher horsepower means that your tank will fill more quickly and efficiently, which can save you time and help you complete jobs sooner.

Once you've answered these questions, you can move ahead with your purchase. You can always ask more specific questions, such as what air compressors are commonly used in your industry, but the questions above will help you find the right option for your needs.

Quincy Compressor will help you find an air compressor that meets all your required specifications. We work with numerous industries, and our years of experience give us the knowledge and expertise to help you choose the right air compressor. If you're looking for a high-quality, reliable air compressor, find a Quincy Compressor location near you or contact us today!

Choosing the Right Air Compressor With Quincy Compressor

Ensuring you choose the suitable air compressor is essential since the device will help streamline many processes and keep your home or business in the best condition. When selecting an air compressor, you must first determine what power source you'll use or what you have available. For example, you may conduct much of your work inside, meaning you won't be able to use a gas-powered air compressor since the fumes can be hazardous to workers. If you choose an electric-powered compressor, you'll want to make sure you have access to an outlet nearby.

Once you know your power source, you can start looking at specifications. For example, you might want an air compressor with a higher horsepower to generate more air pressure. You may also look at tank size to ensure you have enough space to accommodate all the pressurized air you need for your processes. Figuring out the specs will help you narrow down your options and choose from the different types of air compressors.

Some types are more suited to different industries and uses than others. Rotary screw compressors are often used in industrial settings since they provide high-powered air with extreme precision. If you're a homeowner, you'll likely want to choose a smaller, more portable unit better more suited to your needs, whether it's inflating different items or pressure washing your home.

Quincy Compressor can help you find the right air compressor to meet your requirements. Our experts have the knowledge and expertise to help you choose the right compressor, whether you're a large manufacturer or a small-scale business in your local area. We serve many industries, including agriculture, amusement parks, manufacturing, plumbing and woodworking! Since 1920, we've provided solutions for businesses around the world. Our extensive line of products means you'll find everything you're looking for, and one of our experts can help you find the right fit for your business.

Our products are high-quality and can meet even the most demanding application needs. We protect our compressors under industry-leading warranties, which cover your compressor as long as you perform regular maintenance while using Quincy parts and fluids. We also offer extended warranty plans for reciprocating and rotary screw products. Quincy Compressor also provides reliable service 24 hours a day to ensure your air compressor continues to serve you for as long as possible.

With Quincy Compressor, you can rest assured that you'll continue to see the value in your purchase for years to come. Contact our network of professional and knowledgeable air experts to help you choose the appropriate product or find a location near you to talk to one of our representatives in-store!

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