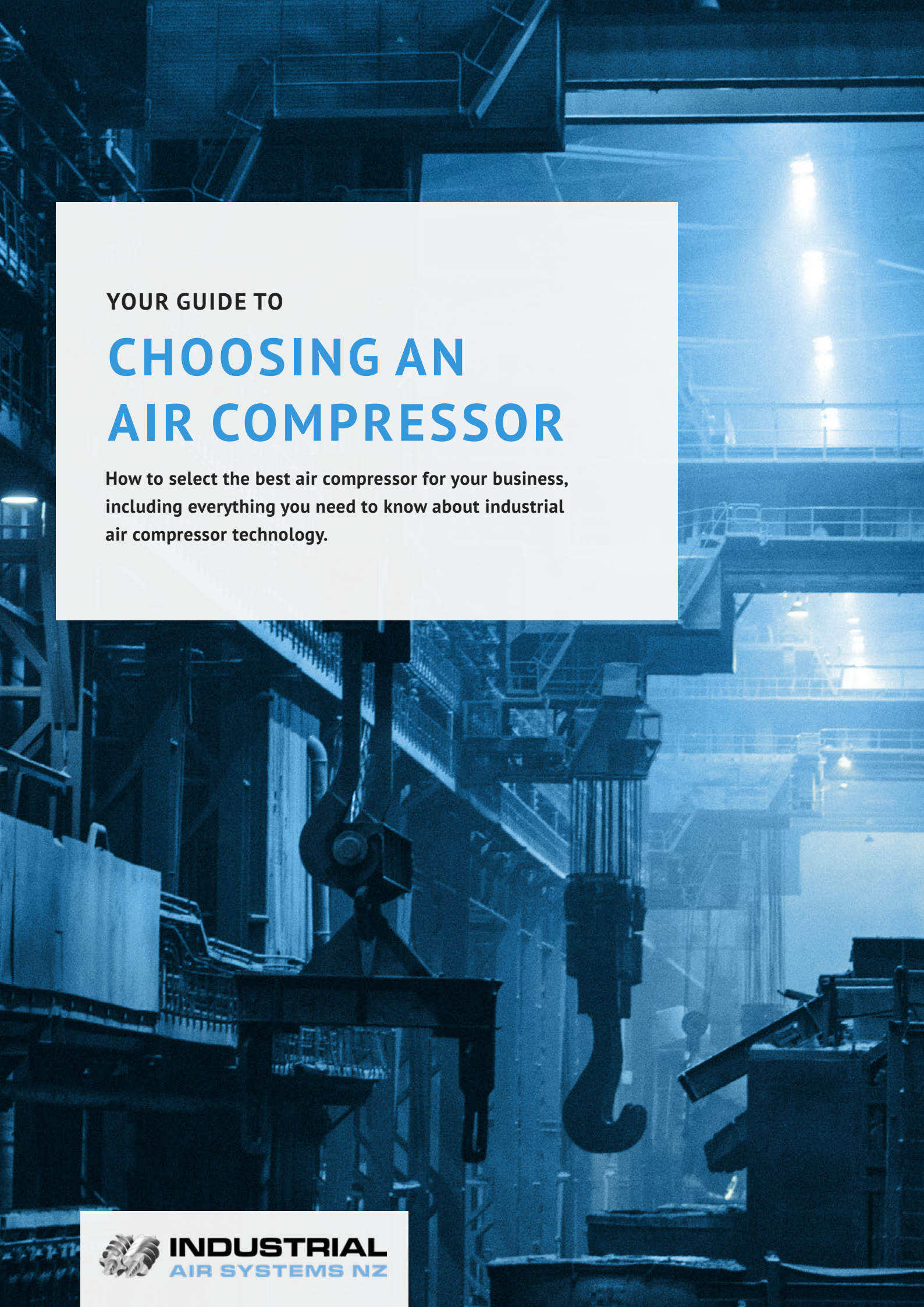


YOUR GUIDE TO

CHOOSING AN AIR COMPRESSOR

How to select the best air compressor for your business, including everything you need to know about industrial air compressor technology.

INDUSTRIAL AIR SYSTEMS NZ

HELPING YOU CHOOSE THE RIGHT COMPRESSOR FOR YOUR BUSINESS

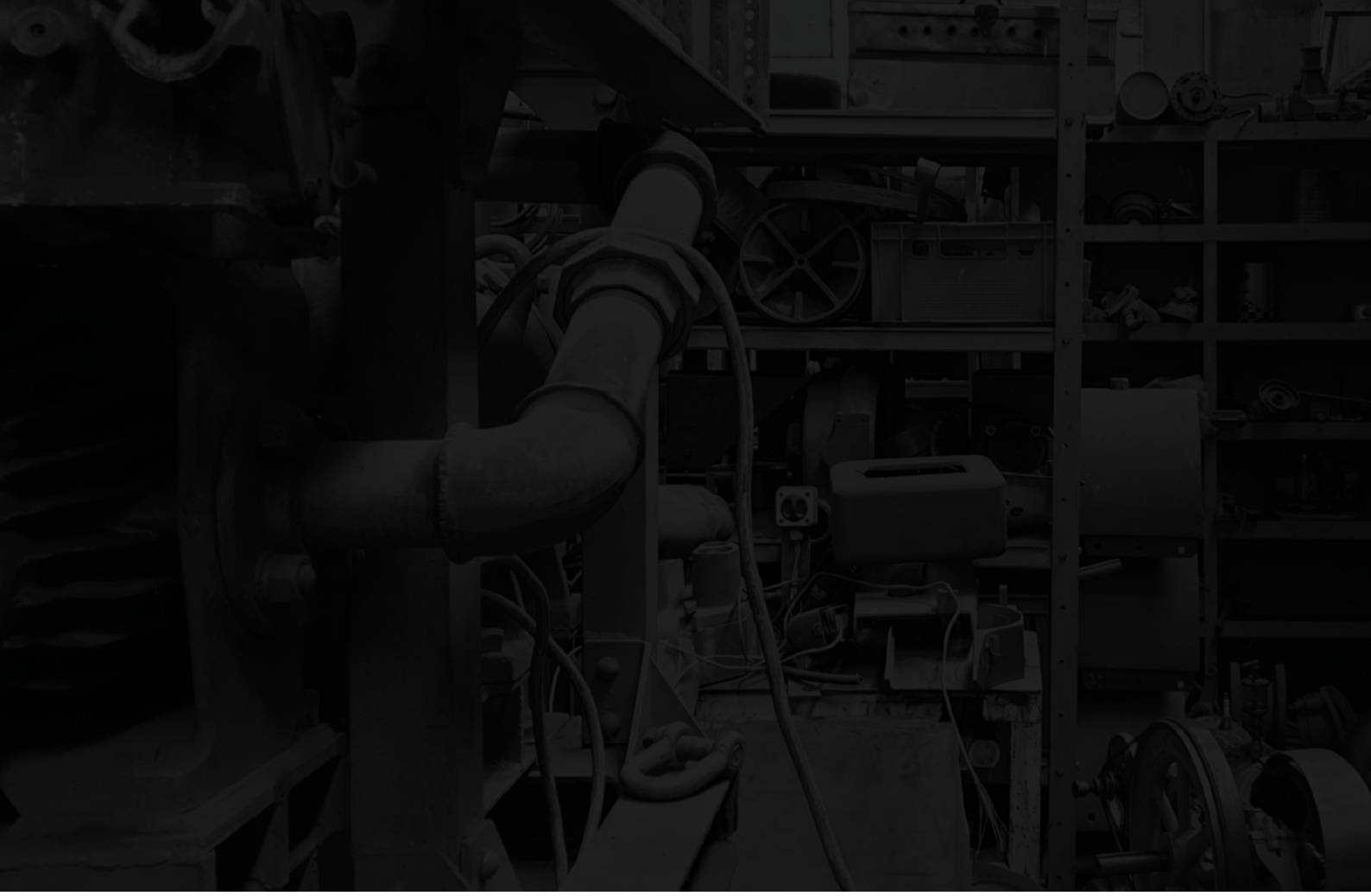
When selecting an air compressor, it's important to make sure that you're choosing the model that's right for you and the needs of your business. We are fortunate that air compressors now come in a range of shapes, sizes and power outputs. However, this can make it difficult to decide which compressor you need.

If you're purchasing an industrial air compressor for the first time or looking to upgrade, it always helps to have expert advice to guide you through the process. That's where we can help!

As industrial compressed air experts, we've put together this simple guide which explains the different types of air compressors available and what environments they're most suited to. This way, you can be confident that you are well-equipped with all of the information you need to select the right air compressor.

Sincerely,

The team at Industrial Air Systems



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COMPRESSED AIR FUNDAMENTALS

As you may already know, an air compressor is used to supply air to a range of tools and equipment, which can be vital to the effective operation of factories, workshops, and even breweries!

Before air compressors came along, most workplace machinery was powered through complicated manual systems using belts and wheels. These older systems were often bulky, hard to use, and not practical for smaller workplaces.

Air compressors have streamlined the use of various types of machinery, making many workplaces considerably more efficient. From filling car tyres to powering dental tools, the applications for compressed air are virtually endless.

Some common environments that you will find use compressed air include:

- Food and beverage
- Engineering and laser cutting
- Woodwork and metalwork
- Automotive
- Painting
- Packaging manufacturers
- Medical and pharmaceutical
- Electronics and robotics
- Pneumatic equipment
- Pressure cleaning
- Plumbing

Air compressors have become common in many workplaces. In fact, you would be hard-pressed to find a mechanic or food manufacturer that doesn't use compressed air in some shape or form.

DIFFERENT TYPES OF AIR COMPRESSOR

There is a vast range of different air compressors available and it's important to select the right machine for the job at hand. **Three of the most common options on the industrial market are:**

- Piston air compressors
- Rotary screw air compressors
- Scroll compressors

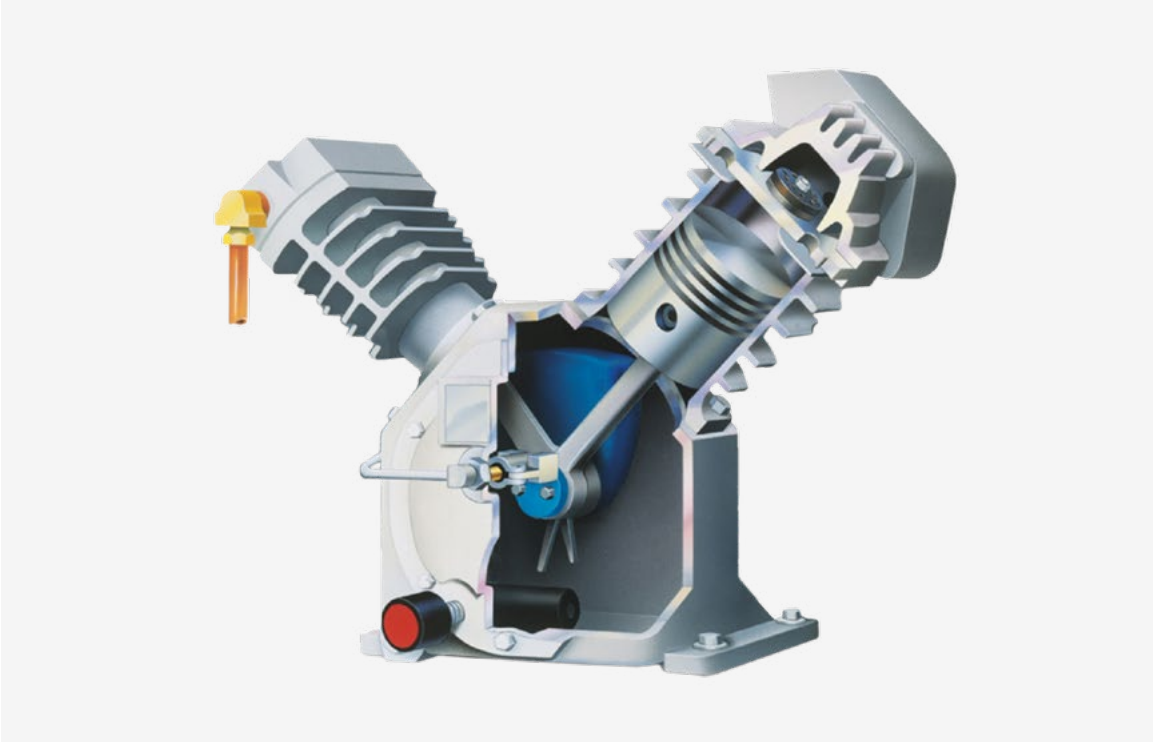
While each type of compressor produces compressed air, they differ in the way they work and the advantages they provide. In the next section of this guide, we've covered everything you need to know to make an informed decision and select the best compressor for your workplace.

PISTON AIR COMPRESSORS

A piston air compressor, commonly referred to as a 'reciprocating compressor', is one of the more economical air compressors on the market. The piston moves back and forth in a reciprocal motion, allowing air to move inside a cylinder and compress.

A piston air compressor is small and robust, making it relatively easy to maintain. However, they're only meant for short-term use so would not be suitable for an environment where the air compressor needs to be running 24/7.

Generally, piston air compressors work better when they can take a break. This is why piston air compressors are most suited to workshop environments where they're less of an upfront cost and will only be used in short increments. The most common applications for piston compressors include workshops, tyre shops, and small manufacturing operations.

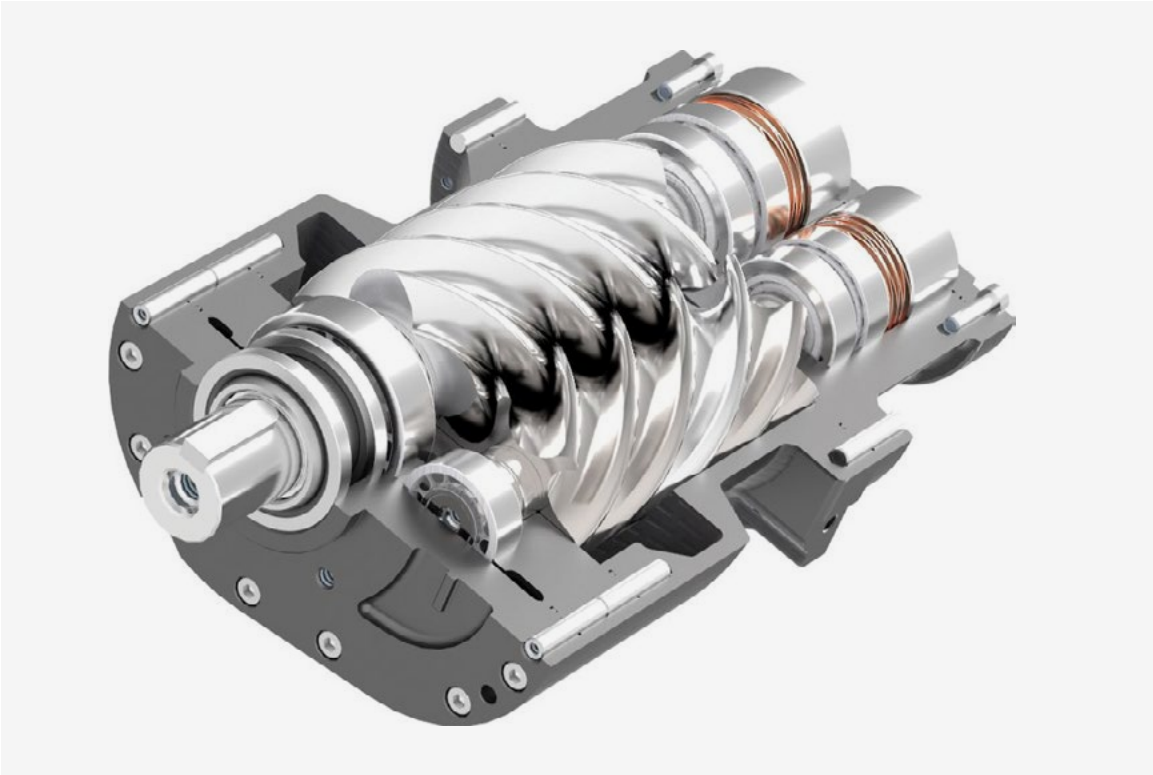


ROTARY SCREW AIR COMPRESSORS

Rotary screw compressors consist of two closely interlocking rotors in a sealed chamber. The rotors turn continuously and, as air enters the chamber through an inlet valve, suction pushes the air into the space between the two rotors. The rotary screw compressor ejects the air when it reaches a certain pressure.

Rotary screw compressors are some of the most efficient air compressors available. The rotors are designed to operate continuously, resulting in little surging. This type of operation also results in a quieter air compressor.

Compared with a piston air compressor, rotary screw air compressors are more heavy-duty and can be used in an environment with more constant air demand. These benefits make this type of air compressor perfect for large-scale manufacturing and factory environments.



SCROLL COMPRESSORS

Unlike piston and rotary screw compressors, scroll compressors operate using two interleaved spiral-shaped scrolls or spirals. One scroll remains stationary while the other orbits eccentrically, without rotating. As the orbiting scroll moves, it creates a series of gas pockets that gradually decrease in size, compressing the air.

Scroll compressors are highly efficient due to their continuous compression process and minimal internal leakage, resulting in reduced energy consumption compared to other compressors. Additionally, scroll compressors are smooth and vibration-free, making them quieter and more suitable for environments requiring minimal noise levels.

Scroll compressors are compact and have fewer moving parts, making them easier to install and maintain. As such, scroll compressors typically experience fewer mechanical failures, resulting in higher reliability and longer service life.

Our scroll compressors are also oil-free, guaranteeing 100% pure air that meets Class-0 air quality standards for ISO Class 1 air or ISO Class 0 air. This ensures strict cleanliness standards are met and ensures quality production for a variety of industries, including medical, food and beverage, research, electronics, and pharmaceutical.

AIR COMPRESSOR TECHNOLOGY

As technology advances, there's no universal solution in terms of how an air compressor operates. Most leading air compressor manufacturers give you the option between fixed-speed and variable-speed air compressors. Your choice will come down to the application.

FIXED-SPEED COMPRESSOR TECHNOLOGY

Fixed-speed technology keeps the compressor speed constant at all times. The compressor will run at a consistent RPM and the inlet valve will alter based on when air needs to be used, instead of ramping the engine up and down. This technology allows compressors to run at full throttle, making them ideal for applications where there is constant demand for compressed air.

VARIABLE-SPEED COMPRESSOR TECHNOLOGY

Variable-speed drives allow an air compressor to run at the speed and voltage required, giving you the exact amount of compressed air for the job at hand. Variable-speed drive technology can run a compressor on 100% airflow or fluctuate to use less air and power. This is a great option for those businesses that aim to be more energy efficient.

VARIABLE-SPEED + PERMANENT MAGNET COMPRESSOR TECHNOLOGY

The most efficient air compressors use a combination of Permanent Magnet motors paired with Variable Speed drives. However, an efficient permanent motor can come to a complete stop in as little as 60 seconds of no air use, saving up to 60% on compressed air power costs in your factory.

OIL-FREE VS OIL-LUBRICATED AIR COMPRESSORS

An oil-lubricated air compressor uses oil to lubricate the compressor parts, seal the air, and keep it cool. On the other hand, oil-free air compressors are designed to operate without oil lubrication and an intercooler is used to keep heat down instead.

While oil-lubricated air compressors are suitable for many industrial applications, there are certain instances where an oil-free compressor is a better fit. We've highlighted the benefits of each to help you decide.

BENEFITS OF AN OIL-LUBRICATED AIR COMPRESSOR

An oil-lubricated air compressor uses oil to operate. These compressors need regular checks and oil changes to ensure everything works correctly. This regular monitoring and maintenance can prove beneficial in the long run, ensuring your compressor runs efficiently and reducing the risk of breakdowns.

Oil-lubricated air compressors are also quieter and produce less heat. Oil also helps to draw heat away while the air compressor is running which keeps the machine as cool as possible.

BENEFITS OF AN OIL-FREE AIR COMPRESSOR

In oil-free compressors, the air-end does not use oil to operate. This results in less contamination, which is crucial to businesses that must adhere to strict quality controls and only use clean, uncontaminated compressed air.

For example, PneuTech's RSCRD-V series oil-free compressors produce 100% oil-free air with Class 0 certification. This is the highest purity level of oil-free air, guaranteeing there is no risk of contamination from the air supply at the source. This eliminates the need for oil contamination testing and guarantees safety for any application, from food packaging to laser cutting.

THE PNEUTECH RANGE OF AIR COMPRESSORS

Here at Industrial Air Systems, we work with leading air compressor manufacturers, under the PneuTech global network, to provide you with the right air compressor for you and your business. So whether you run a small car workshop or are the owner of a large food manufacturing company, we'll work with you to find the right PneuTech compressed air solution.

The PneuTech range has been designed and manufactured to:

1. Sustain constant use in the harshest of environments.
2. Guarantee high performance.
3. Be reliable and economical to operate.

The air compressors we recommend for most industries are the permanent magnet (PM) range. This includes the Vixen integrated compressor (including an air receiver) up to 15kW and the stand-alone series up to 250kW.

The PneuTech PM series air compressor uses a permanent magnet and variable speed drive technology to seamlessly speed up and slow down, or even completely stop, the compressor to match your air demands. After 60 seconds of no air demand the motor simply stops. When installed in a business with an air demand that varies throughout the day, the savings can be significant – as much as 60%!

Along with being very energy efficient and the potential power savings you could see, there are many other benefits to the PM compressor range. **These include:**

- Unlimited motor start/stops per hour.
- Dual cooling system.
- Low noise.
- Direct connection (no gearing).
- Easy to maintain.
- Easy to use with a full function controller.

For more information on the Permanent Magnet range, you can **visit the product page here »**

GET IN TOUCH: EXPERT ADVICE ON CHOOSING YOUR IDEAL COMPRESSED AIR SYSTEM

We know that there are many things to consider when choosing the right compressed air system that's perfect for your business and we hope this guide has provided some guidance to get you started.

If you have further questions on choosing an air compressor or you'd like more information on the range of air compressors available from PneuTech, we'd love to hear from you.

Our friendly team is happy to answer any questions you may have and help you choose the compressed air system that is right for your business.

CONTACT US HERE