

INGERSOLL RAND WHITE PAPER | SEPTEMBER 2022

# The Importance of Compressed Air in the Woodworking Industry





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## Introduction

Woodworking is a craft that was developed during ancient civilization. What started out as a way to simply make tools needed for both hunting and building shelter, has since turned into a fine art where woodworkers and carpenters not only design and build beautiful architecture, but also skillfully create items like cabinetry and furniture.

Numerous types of stationary machinery, like sprayers, lathes, planes, routers, bandsaws and bench grinders are used in a variety of industries. Portable hand tools, like sanders, jig saws, miter saws, reciprocating saws and nail guns are also needed. In order to power these tools and equipment, as well as to run an assembly line, air compressors are needed. They keep equipment running and production moving.

Air compressors also help to keep workers safe and the work environment free from saw dust, glue, sealant and paint particles. Using a compressed air system for woodworking not only helps to improve the quality of work, but also the well-being of workers in the shop.



## Global Woodworking Market

According to the United States Department of Agriculture, the COVID-19 pandemic disrupted supply and demand of forest products and labor, including trucking and transport. During 2020, prices of processed wood products, like softwood lumber and plywood, nearly quadrupled. In addition, the demand for woodworking machinery around the world dropped significantly. Fortune Business Insights noted that the global market exhibited a decline of -0.4% in 2020.

However, current business analysis predicts that the market will grow from USD 4.62 billion in 2021 to USD 6.05 billion in 2028 at a CAGR (Compound Annual Growth Rate) of 3.9%. This is as a result of the desire for more sustainable and environmentally friendly solutions, like prefabricated wooden houses, since they can reduce material usage and significantly increase production efficiency. Keeping your workplace clean and moisture-free are important to keep your workplace efficient and able to handle growth.



## Compressed Air in the Woodworking Industry

Woodworking processes would be slow and inefficient by today's standards if it hadn't been for the power of air. Pneumatic tools not only offer more power, but also are lightweight and easier to work with when compared to other woodworking tools.



From large manufacturing companies to small carpenter workshops, compressed air is used throughout the entire woodworking cycle. Whether the job is sanding, painting, cutting, nailing, drying, varnishing or sawdust removal, woodworkers benefit from a compressed air system in their facility. Since compressed air is used from start to finish in the woodworking process, selecting the right air compressor for each application is important.



## Choosing The Right Air Compressor for Woodworking Applications

Choosing the right air compressor system is determined by your current process workflow, meaning the air compressor or compressors should be able to handle the requirements of all woodworking tools and equipment involved. When compressors do not supply enough air to meet the demands of your tools, you can experience significant production downtime.

For this reason, it is necessary to consider several factors before making a purchase, including a compressor's air volume (CFM), air pressure (PSI), and horsepower (HP), as well as the size of the associated receiving tank. Other considerations include how to handle contaminants and moisture in the system, and whether to use a single stage or two-stage compressor to meet your application's needs.

### Compressor Technology

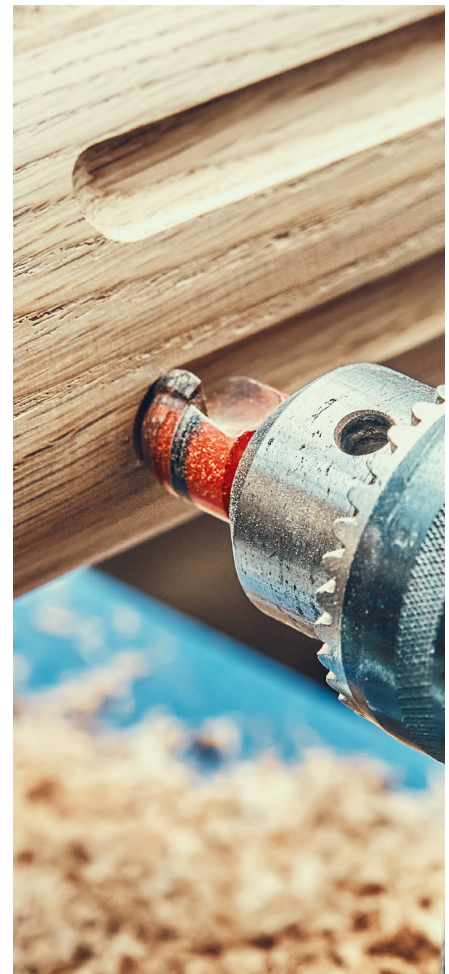
- How much airflow is required?
- How many hours will the compressor operate each day?
- Will the flow demand fluctuate?
- Are there any space constraints?
- What are the pressure requirements?
- Is noise a concern?

### Air Quality

- How clean or dry does my air have to be?
- Which filters or dryers do I need?

### Systems Approach

- Are you going to expand your operation in the future?
- Do I need external help with parts and maintenance?



**Once you answer these questions, you should be well on your way to deciding which compressor is right for you.**

## Matching Your Demand to Compressor Technology

Choosing the right compressor boils down to one important factor – you must match your compressor technology to meet your specific application needs. Ingersoll Rand offers a broad portfolio of oil-flooded compressors in two technologies that are sure to meet virtually any requirement in the woodworking industry. Our team of knowledgeable experts will help you find the solution among our innovative air products and services to keep your business operating at full capacity.

### Reciprocating Compressors

Ingersoll Rand offers single- and two-stage reciprocating compressors, which have lower initial costs, but higher energy use. They are a perfect choice for lower demand applications that require a reliable air supply for everyday use. Although noisier than some other compressors, it is a true workhorse with unsurpassed performance by maximum operating pressure, increased air flow and extended duty cycles. These compressors offer:

- Products that range up to 20 kW
- 100% continuous duty for maximum power and flexibility
- Easy to access components that simplify maintenance and service
- Lowest initial cost



### Rotary Compressors

Rotary compressors are the most efficient on the market and guarantee continuous supply of compressed air, making them ideal to power any woodworking pneumatics. They have the highest initial cost but can lower your total cost of ownership over the life of your compressor by reducing energy use, especially when a variable speed drive (VSD) model is purchased that automatically adjusts its compressed air output to achieve the highest efficiency for your operation. Rotary compressors:

- Offer a wide product range from 4 to 100 kW or more
- Achieve maximum reliability for increased productivity
- Operate quietly
- Have the highest initial cost, with lower life cycle and energy costs



## More Than Just Choosing the Right Compressor

### Improving Air Quality

Clean air is crucial in the woodworking industry. Moisture and contaminants in compressed air can produce significant problems in equipment. Particulates from dust pose a real danger to workers as well as to the equipment and the production process. Since a wood shop is not the cleanest place, the ambient air could be full of dust, likely causing damage to your compressed air system over time. Making air treatment equipment an integral component of your compressed air system will improve productivity, system efficiency and product or process quality.

#### Air Dryers

Excessive moisture causes damage to your compressed air system, which can impact the entire operation of your woodworking shop. At Ingersoll Rand, we understand that air quality is a crucial aspect of success. This is why we offer a vast range of high-quality air treatment equipment to enhance your air compressor system by improving productivity and efficiency as well as making the overall running of operations more manageable.



#### Air Filters

By pairing your compressor system with the proper air filter, you can protect both your tools and employees from harmful contaminants by effectively removing solid particles, water, oil, and aerosols from compressed air. Rugged, durable and easy to maintain, F-Series advanced inline filters will provide years of reliable performance by reducing contamination in your air stream.

### Use The Proper Lubricant

You can successfully keep your compressor operating efficiently and prevent overheating by using a high-quality lubricant combined with thorough monitoring of your system. Ingersoll Rand offers genuine OEM synthetic lubricants formulated to increase efficiency, reduce wear and maximize service hours between change-outs. Choose All Season Select lubricant for reciprocating compressors, and our family of Ultra lubricants for rotary compressors.



## Find A Service Partner You Can Trust

Ingersoll Rand is your trusted partner for the long haul. We take a systems approach, providing expert services that go beyond providing just a compressor. Our services included skilled project management, installation for start-up, system expansion or decommissioning, as well as flexible maintenance programs that meet your specific requirements.

We work with you to enhance your operation's compressed air system by adding additional high-quality, low-cost critical equipment; running consultations; as well as maintaining your system to ensure that it runs at peak performance.



## Protect Your Investment with Ongoing Preventative Maintenance

Ingersoll Rand offers a variety of high-quality parts and maintenance kits with everything you need to run preventative maintenance yourself. We also offer maintenance services and CARE programs, like **PartsCARE** to ensure you always have the quality OEM parts you need for basic maintenance and **PlannedCARE** for trained technicians who are always ready to help you.

Our main goal is to offer you the highest efficiency and quality while supporting your business with the very best equipment, accessories and service repair at the lowest possible cost.

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