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Compressed Air Applications for Distribution Centers

Ingersoll Rand®

What's Inside

Introduction: A Constantly Growing Market

The distribution center and fulfillment industry is highly competitive and constantly growing. In 2020, the value of the global distribution market reached approximately $245 billion and is predicted to touch the $326 billion mark by the end of 2024.

The COVID-19 pandemic has brought many new challenges to sustainable operations. Despite this, Europe, North America and some parts of Asia-Pacific have continued to pursue new levels of maturity and advanced technology appropriation in the distribution center and fulfillment industry.

In such a growth-oriented and fast-paced industry, being out of step can come very easily. Thus, to maintain a top place in the market and keep providing the best services possible, manufacturers and distribution professionals have set their sights to equip their facilities with efficient and highly reliable air compressors.

What's the Goal of an Efficient Compressed Air System in a Distribution Center?

Overall, the main goal of a compressed air system is to provide a reliable supply of clean, dry, compressed air at a stable pressure and at the lowest cost possible. However, designing a compressed air system that ensures efficiency, reliability and safety requires thorough consideration and extensive technological knowledge about distribution center applications.

Air-Powered Dock Levelers

Compared to hydraulic levelers that use a hydraulic cylinder to position the leveler platform, dock levelers powered by compressed air use an airbag to raise and lower the dock. This technology uses air as the working media, instead of fluid, to inflate the airbag with a high-volume, low-pressure compressor. This simple method eliminates the problem of messy hydraulic fluids and leaky seals.

Pneumatic Conveyors

Pneumatic (air operated) conveyors are used to transfer a wide variety of products. The process begins with creating a vacuum within the hopper. This enables the materials to be suctioned for further discharge to their destination, like a container or packaging machine. A pneumatic transfer guarantees minimal contact with external factors, making it ideal for the pharmaceutical, food and beverage industries where a clean operation is not only required, it is essential.

Packaging Equipment

Compressed air technologies are utilized for blow-off applications that clean containers before filling them with products, or to cut, shape and convey the products from one place to another. Thanks to high-quality compressed air, it is possible to prevent product contamination to ensure customer safety and satisfaction.

Air-powered equipment can simplify operation and eliminate messy hydraulic leaks.

Benefits of Air-Powered Equipment

Compressed air is often referred to as the fourth utility. It is safe, economical and easily conducted. Equipment powered by an air compressor, instead of a heavy internal motor, offers many benefits. It is lighter, more compact and operator-friendly. The risk of electrical shock is eliminated.

Air tools are faster and more efficient. They also decrease the amount of strain on the user. When compared to electric-powered equipment, air tools have fewer moving parts, and require much less maintenance. This translates into decreased operating costs.

Selecting the Right Air Compressor

Various applications used in distribution centers call for different types of air compressors. The key to making sure you select the right unit for your distribution center is to choose one that not only meets all your compressed air demand, but also keeps maintenance and operating costs low.

Let's face it, powering distribution center equipment is absolutely crucial to getting daily work done and making your facility operate at full capacity. Choosing an air compressor for a specific application requires careful consideration of several things, including intended use, performance specifications and available resources.

The common misconception regarding powering either pneumatic conveyors or air-powered levelers in distribution centers and warehouses is that more horsepower equates to more compressed air output. In fact, today's air compressor's technology is highly advanced, so if sized properly for the application, an air compressor can produce the same overall power with less horsepower. For example, the Next Generation R Series 11-22kW that delivers from 15 to 30 horsepower can produce 18% more airflow than its predecessor with the same horsepower capacity.

Consider This Before Purchasing

Depending on the size of your distribution center and the pressure demands of your equipment on the production line, you may need a rotary screw air compressor, which can be the ideal choice for moderate pressurization; a reciprocating air compressor, for operations with high levels of air pressure; or a two-stage reciprocating air compressor, for maximum pressurization.

Whatever the equipment, it is essential to address key questions before making a purchase:

- **How much airflow is required?**
- **Have you defined the pressure requirements?**
- **Do you need clean or dry air?**
- **Which filters or dryers do you need?**
- **How many hours will the compressor operate per day?**
- **Will the flow demand fluctuate?**
- **Are you going to raise the scope of your operations in the near future?**

Ingersoll Rand's Solutions for Distribution Centers

Ingersoll Rand has long been a leader in providing compressed air solutions for various industries. Known for its high reliability and customer-oriented mindset, the company has an extensive product portfolio and application know-how, which allow it to deliver the highest quality, reliability and dependable performance.

Managers of distribution centers and warehouses rely on technologically advanced equipment and do not want to gamble with poor compressed air quality. To help them achieve this goal, Ingersoll Rand offers products that will ensure maximum productivity and the longest service life possible.

Two-Stage Electric Driven Reciprocating Air Compressor 5-7.5 hp

With its durable cast iron construction, the two-stage reciprocating air compressor is able to operate flawlessly for over 15,000 hours. Thanks to 175 psig maximum operating pressure and an 80-gallon ASME receiver tank, the compressor guarantees plenty of punch for the most demanding applications.

Next Generation R-Series Oil-Flooded Rotary Screw Compressor 11-22 kW (15-30 hp)

The R-Series rotary screw compressor is characterized by a low total cost of ownership due to its reliable components and industry leading capacity. Its V-Shield™ technology translates to an integrated, leak-free design, whereas the PartsCARE™ service program allows for longer compressor life.

Non-Cycling Refrigerated Dryers 0.2-8 m^3/min, 7-212 cfm

Ingersoll Rand's non-cycling refrigerated dryers offer a unique combination of components and features that provide high reliability and no maintenance with maximum productivity. With efficient heat exchangers, a built-in stainless steel demister, and an electronic drain valve, non-cycling refrigerated dryers can significantly reduce energy consumption and minimize air loss.

Global Service and Support Network

Renowned for its market-leading reliability, quality and superior performance, Ingersoll Rand brings over 149 years of innovative solutions to the compressed air market. In addition to a comprehensive portfolio of state-of-the-art compressors, Ingersoll Rand offers various maintenance programs as well as genuine OEM components for air compressor repairs.

Depending on your distribution center's needs, Ingersoll Rand offers a variety of service programs, ranging from comprehensive plans that assume total operational risk to simple plans that deliver the right part at the right time. We understand that deciding on a service package takes time and consideration. Our engineers are here to help. They will perform a deep analysis to help you determine which maintenance plan is best for your specific distribution center and compressed air needs.

IT ALL ADDS UP TO PEACE OF MIND

Lower Cost of Ownership

Our service programs provide the most cost-effective solutions based on your customised maintenance strategy.

Quality Results

Ingersoll Rand factory-trained service technicians are backed by more than 149 years of industry experience.

Increased Uptime

Service programs help decrease unplanned downtime and costly production interruptions.

Efficient Energy Use

Peak system efficiency is achieved through properly performed maintenance and inspection.

Peace of Mind

Our world-class services will help you achieve the results you need, while you focus on what's important to your business.

There's a lot riding on the quality of your air.
Let Ingersoll Rand help you get it right.

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