Ingersoll Rand

Large Rotary Screw Single- and Two-stage Air Compressors
100-500 hp (75-350 kW)

Innovation
Reliability
Efficiency
Competing in today’s business environment requires manufacturers to keep their operating systems up and running. When systems go down, production stops. **Reliable, flexible and easy to use equipment is essential for efficient operation.**

**The Reliability Imperative**

Focusing on reliability, Ingersoll Rand rotary screw air compressors are designed with a unique, maintenance-free drive system — a simple gear drives the airend. Since the motor and airend are permanently aligned, no adjustments are needed during the course of normal operation. Additionally, since no inspection covers are required, the gear drive provides a user-safe means of turning the airend.

At the core of Ingersoll Rand rotary compressors is a rugged airend that uses duplex tapered roller bearings. These roller bearings provide linear contact for thrust loads, dramatically improving airend life.

The compressors also incorporate an exclusive bearing coolant dam, assuring that coolant is present during the compressor’s critical start-up phase, significantly extending the life of the bearings. Used in thousands of compressors throughout the world, Ingersoll Rand’s airend has earned a reputation for trouble-free operation and minimal maintenance.
Precise One-touch Control with Intellisys®
Whether the application requires eight hours of continuous-duty compressed air or an intermittent supply over a 24-hour period, the Intellisys® microprocessor is in complete control. The Intellisys controller provides quick, comprehensive access to your compressed air system at the touch of a button — nothing could be more intuitive and user-friendly. The compressor’s operating parameters can be quickly and easily adjusted to meet the plant air system's requirements and minimize operating costs.

Automatic Service Prompts for Ensured Maintenance
Intellisys indicates when it is time to perform maintenance. This function encourages routine service in a timely fashion, thereby increasing uptime.

Timesaving Diagnostics
Intellisys provides a fast diagnosis of system demand, displays a warning and stops the compressor if it exceeds operating parameters. It also provides a history of events leading up to the condition. This will keep troubleshooting expenses and downtime to a minimum. An easy-to-read, liquid crystal display (LCD) provides you with the critical details of the compressor’s operation, allowing fast adjustments when necessary.

Digital Motor Control for Option for Maximum Precision*
Our exclusive digitally-controlled stepper motor inlet valve system precisely matches the airflow to the system demand. Simply set the preferred system pressure and the built-in Intellisys microprocessor controller takes care of the rest.

For additional reliability, the inlet control system requires no routine maintenance. There are no pressure switches to manually recalibrate, no diaphragm valves that can stick open and no manual adjustments are required during the course of normal operation.

*Standard in some markets
Innovative Energy Efficient Design

Energy efficiency is one of the most important considerations in judging the successful operation of a compressed air system. Energy costs can often exceed the purchase price of equipment, even during the system’s first year of operation.

On average, compressed air systems use 10% of the energy consumed by a production facility, so even small improvements help maximize plant energy efficiency. Ingersoll Rand’s rotary screw air compressors are designed to help you reduce waste and lower your operating costs — here’s how we do it.

Energy Efficient Airend...for 15% Energy Savings

If you’re looking for the greatest efficiency possible, look no further than Ingersoll Rand two-stage compressors. The heart of the compressor is our time-proven two-stage airend. By compressing the air in two stages instead of one, energy savings of up to 15% are realized. The airend rotors are precision machined in a twenty-step process, ensuring unsurpassed rotor profile accuracy, repeatability and efficiency.

Reduced Bearing Loads, Increased Life

A lower compression ratio in each stage reduces bearing loads and increases airend life. The use of the highest quality bearings available ensures years of reliable, efficient service.
Coolant Curtain…for Even More Energy Savings
One of the keys to the efficiency of the two-stage design is the coolant curtain. Significant cooling of the air is achieved by injecting atomized oil into the compressed air stream leaving the first stage. Lowering the air temperature prior to entering the second stage significantly decreases the energy required for compression. The coolant curtain also eliminates the need for an intercooler.
Superior Features That Reduce Operating Costs

Ingersoll Rand rotary screw compressors add unequalled reliability, efficiency and productivity to virtually any compressed air system, and could save you 25-50% of your compressed air system operating costs.

Convenient Top Exhaust
The cooling air flow discharges from the top of the package facilitating easy ducting for removal and/or recovery of exhaust heat.

Air-cooled or Water-cooled Packages
To fit the needs of the compressed air system Ingersoll Rand offers the choice of an air-cooled or water-cooled design.

Easy Serviceability
Our total package is remarkably uncluttered, making servicing easy. All components are readily accessible behind easily removable panels.

Star-delta Starter
This advanced starter gives the compressor a controlled, cushioned start, eliminating current surges and extending component life for increased system reliability.

Inherent Leak-free Design
Using O-ring fittings significantly reduces the potential leakage problems associated with conventional threaded fittings.
Superior Features That Reduce Operating Costs

8,000 Hour/2-year Lubricant

Ultra Coolant™ reduces maintenance costs by lasting longer between changes. Also, because of its superior separation properties, less coolant is passed downstream to the air system, further minimizing coolant replacement costs. Finally, Ultra Coolant’s biodegradable properties eliminate the need for an oil-water separator, thereby reducing the problems associated with condensate disposal (Subject to local approval).

Up to 115°F (46°C) Operating Ambient
Our rotary screw compressors operate in high ambient conditions, making them suitable for locations around the world. Even if the compressor is not operated in sweltering climates, the high temperature rating ensures fewer nuisance shutdowns caused by fouled coolers.

End-to-end Cooling
The aftercooler is located at the inlet end of the package. This allows cool compressed air as low as 46°F (8°C) above the ambient temperature to pass downstream to the air system.

Rugged Motor
The extra toughness built into our electric motor means it will run when other motors do not. Maintenance and repair of the motor are just like any other electric motor.

Easy Connectivity
The compressor is fully piped and wired, resulting in simple external connection of all utilities.

Quiet Enclosure
A low sound enclosure is standard and keeps sound levels to a minimum.

Factory Tested
Every rotary screw compressor undergoes state-of-the-art testing to ensure that you get the best possible performance under varying conditions.
Engineering the Right System for Your Application

When Do I Use Integrated Dryers with My System?

Compressors with integrated dryers make sense for smaller systems of typically 50 hp (37 kW) and below, and point-of-use applications where a single compressor often carries the load of the entire system. In those cases, the compressor’s discharge pressure is the system pressure and, as such, control issues do not arise.

Avoid Problems of Compressed Air Trains

As systems grow, multiple compressors with connected or integrated air treatment can have negative effects on optimization and pressure stability. Multiple dryers and filters — in what are known as “compressed air trains” — cause significant system losses and make control optimization impossible.
Proper Design of Larger Centralized Systems

Eliminating integral compressed air trains allows for system design optimization. There are a number of benefits associated with a centralized air system with fewer dryers, such as:

- Dryers can be sized to optimize the system
- Lower energy losses through lower pressure drop with lower loads
- Better dew point control
- Compressor controls manage a single air treatment system
- Energy savings and minimized CO₂ emissions through reduced compressor pressure setting
- Stabilized pressure

They can also cause:

- Higher energy losses due to pressure drops
- Dew point variability
- Increased maintenance due to frequent compressor cycling from variable pressure drops across each train
- Artificially higher supply pressure required to account for variable pressure drop and control issues
- Reduced effective pressure control band due to need to respond to the highest pressure drop in the train

Multiple compressors with optimized air treatment
Auditing, Service and Maintenance

Papermaking
Even in the harshest manufacturing environments, rotary screw compressors add unequalled reliability, efficiency and productivity to your air system.

Food Packaging
Ingersoll Rand drives productivity within this and other continuous or batch process industries by delivering advanced technology compressor solutions that provide low life-cycle costs.

Textiles
Garment manufacturing requires a reliable source of clean, dry compressed air, which is why Ingersoll Rand has been a critical supplier to this industry for many years.

No matter what the industry or location, Ingersoll Rand is committed to serving you 24 hours a day, seven days a week. Our worldwide network of distributors, engineers and certified, factory-trained technicians are a phone call away — ready to support you with innovative and cost-effective service solutions that will keep you running at peak performance.

PackageCare is a service contract designed to help customers get the most out of their air system investment. Whether it’s Ingersoll Rand equipment or a competitor’s, a new compressor or used, with PackageCare customers get hassle-free system reliability, backed by the most comprehensive service program in the industry. We’re the only OEM in the industry offering this type of service coverage.
Compressed air is too important to take chances, so engineers can maximize production uptime by specifying Ingersoll Rand rotary screw compressors, featuring our unique maintenance-free drive system.

Few industries have a greater need for energy efficiency — our single- and two-stage rotary screw compressors offer the best efficiency over the widest operating range.

The printing industry relies heavily on compressed air, from pre-press through printing to shipping. High quality air and stable pressure are critical to minimize production interruption.

Ingersoll Rand Audit Portfolio

**Intellisurvey**
- Automated compressor audit
- Detailed air profile
- Identify fast-track savings opportunities

**Feasibility Study**
- Analysis by walking around
- Interview operations, finance, management
- Identify potential opportunities from a supply-side audit or full-system audit

**Supply-side Audit**
- Differentials, signals and set point management
- Pressure-drop management yields significant energy savings
- Air-quality management results in significant productivity improvements

**Full-system Audit**
- All audit components previously identified, plus...
- An exact match of optimal demand-side requirements minimize compressed air consumption
A Configuration for Every Need

### 60 Hz Single-stage 250-450 hp Performance

<table>
<thead>
<tr>
<th>Nominal hp</th>
<th>XF 100 psig</th>
<th>EP 125 psig</th>
<th>HP 140 psig</th>
<th>XP 165 psig</th>
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### 60 Hz Two-stage 100-500 hp Performance

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<th>HXPE 200 psig</th>
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### 50 Hz Single-stage 200-250 kW Performance

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<th>Nominal kW</th>
<th>ML 7.5 bar g</th>
<th>MM 8.5 bar g</th>
<th>MH 10.0 bar g</th>
<th>Free Air Delivery m³/min</th>
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### 50 Hz Two-stage 75-350 kW Performance

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### Notes:
- FAD (Free Air Delivery) cfm and m³/min are ratings of full package performance in accordance with CAGI-PNEUROP acceptance test standard PN2CP2C2 or ISO1217: 1996 Appendix C.
Count on Ingersoll Rand for All Your Air System Requirements

Air Quality
- Filtration
- Dryers
- Point-of-use air treatment
- Air sampling test kits
- Dew point meters

Environmental
- Condensate management
- Lubricants
- Water filtration

Installation
- SimplAir piping system
- Fusible disconnects
- Intelliflow system pressure control
- Drains

Maintenance
- Hard parts
- Consumables
- PM contracts

Power Management
- Variable speed drives
- Line reactors
- System controllers
- Safety switches

Energy Efficiency
- System air pressure controllers
- Automated air system controls
- No-loss drains
- System audits
Ingersoll Rand (NYSE:IR) advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Schlage®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; secure homes and commercial properties; and increase industrial productivity and efficiency. Ingersoll Rand products range from complete compressed air systems, tools and material and fluid handling systems. The diverse and innovative products, services and solutions enhance our customers’ energy efficiency, productivity and operations. Ingersoll Rand is a $14 billion global business committed to a world of sustainable progress and enduring results. For more information, visit ingersollrand.com or ingersollrandproducts.com.

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