Ingersoll Rand

Oil-Free Rotary Screw Air Compressor Systems

37-160 kW (50-200 hp), 4.5 to 10.5 bar g (65-155 psig)

Class 0
ISO 8573
Oil-Free Air

Your Trusted Partner in Compressed Air

Staying ahead of your competition with advanced compressed air systems and services that boost productivity, lower operating expenses and extend equipment life is critical to your success.

No matter the industry or application, you can count on Ingersoll Rand as a trusted partner for oil-free compressed air technologies and services. By focusing on you and your business, we provide collaborative solutions that make you successful, offering a total system approach to maximize efficiency and performance.

Take a Systems Approach

Delivering reliable oil-free compressed air to your facility goes well beyond the compressor itself. Optimize total cost of ownership (TCO) through a systems approach that employs the best air compression technologies to deliver reliability for life—from design to decommissioning.

Your business will benefit from Ingersoll Rand's partnership through our extensive experience and global expertise to ensure reliability, lower maintenance costs, ease of serviceability and system optimization.

Let's Get Started Together
Ingersoll Rand Contracting Services Video

Let's Get Started Together

Throughout the entire lifecycle, our systems approach helps you achieve the lowest operating cost.

When High Air Purity is a High Priority

There's a lot riding on the quality of your air. The presence of particles, condensation, oil and oil vapor in a compressed air system can lead to downtime, product spoilage and recall, damage to your brand reputation, or worse, harmed consumers and product liability.

For reliability

A robust product and system design delivers top quality air, protecting sensitive downstream equipment, lowering maintenance and extending equipment life

For productivity

The use of an oil-free Class 0 certified compressor guarantees contamination-free air, eliminating the risk of product spoilage and waste

For serviceability

Our oil-free equipment is designed specifically to make maintenance easy by providing clear access to consumable components

For lower cost of ownership

Higher initial costs for oil-free systems are more than offset by lower operational and maintenance costs over a system's life to maintain the highest air quality

ISO 8573 Class 0 Oil-Free Air

ISO 8573-1 Air Quality Classes

Quality Class	Oil & oil vapor mg/m³
0	< 0.01
1	0.01
2	0.1
3	1
4	5

Class 0 is the most stringent air class defined by ISO 8573, part 1. Our oil-free compressors are certified Class 0 for no oil content by TUV to ensure your air quality exceeds specifications.

Oil-Free Compressors for Your Application

Why You Need Class 0 Air
Contamination Risk in the Food & Beverage Industry

Ingersoll Rand offers a wide portfolio of reliable oil-free products that will adapt to your industry and application. We will assess and propose the best oil-free solution to increase the productivity of your installation, **providing zero risk of contamination of your final product.**

Food & Beverage

Product transportation, storage packaging, filling, capping cooling, spraying, cleaning, fermentation, aeration, PET blow molding

Pharmaceutical

Tablet production, coating, mixing, holding, product filling, packaging, bottling, aseptic applications

Electronics

PCB cleaning after production, pneumatic component transfer, sensitive values operation

Chemical

Process air, pneumatic valves, control cylinders, gas separation, pneumatic conveying, destratification, air blanketing, service air

Textile

Pneumatic valves, cylinder control, jet looms, spinning frames, sewing machines, blow guns

Utilities

Instrument air, pneumatic valves, control cylinders, fuel purging, service air, fuel atomization, air motors

Download Our Whitepaper
Maintaining Quality Compressed Air in the Pharma Industry

AIR COMPRESSORS

Energy makes up 70% of an air system's total cost, so matching the right compressor to your demand is critical. Choose Nirvana variable speed drive (VSD) compressors for fluctuating demand, or Sierra fixed speed compressors for constant demand.

NIRVANA AND SIERRA OIL-FREE COMPRESSORS

Best of Both Worlds

Base load with reliable Sierra fixed speed compressors and trim with Nirvana VSD compressors for best in class part load efficiency.

Launch The Video
See an Overview of Our Oil-Free Capabilities

What Makes Our 100% Oil-Free Rotary Screw Compressors Unique?

Robust Components

Proven, trouble-free airends with patented UltraCoat™ technology, dual-vented seals and a hydraulically actuated inlet valve provide reliability for life.

Efficient Design

Our variable speed compressors feature exclusive HPM variable speed technology with 4/6 rotor profile for maximum efficiency and turndown, as well as tested per ISO1217 and 3rd party verified.

Simple and Serviceable

No special tools are required to perform maintenance, and all components are easily accessible. Our durable consumables and wearables lengthen service intervals.

Sierra Fixed Speed Oil-Free Compressor

The Reliable Workhorse

Sierra fixed speed compressors provide 100% oil-free Class 0 compressed air, safe, continuous and efficient operation and a robust design.

Engineered to Order

Special requirements are no problem for Ingersoll Rand oil-free compressors. We provide a customized solution matching your exact specifications. Here are some examples:

- Heresite-coated coolers
- Special construction materials
- Epoxy-painted enclosures
- Additional electrical classifications
- Additional instrumentation
- Programmable logic controllers (PLCs)
- Stainless steel tags
- Special motors

Nirvana Variable Speed Oil-Free Compressor

Advanced Compressor Control

Our easy-to-use Xe-145 compressor controller will make a huge difference in managing your system efficiency as well as your bottom line. The intuitive, high-resolution color display makes important compressor information easy to find.

- Fully integrated controller with the variable speed drive
- No additional controller needed
- Remote communications capability
- Large graphical user interface
- Intuitive web-like navigation
- Integrated variable speed control
- Multiple connectivity options

View Products
See our entire portfolio of oil-free compressors

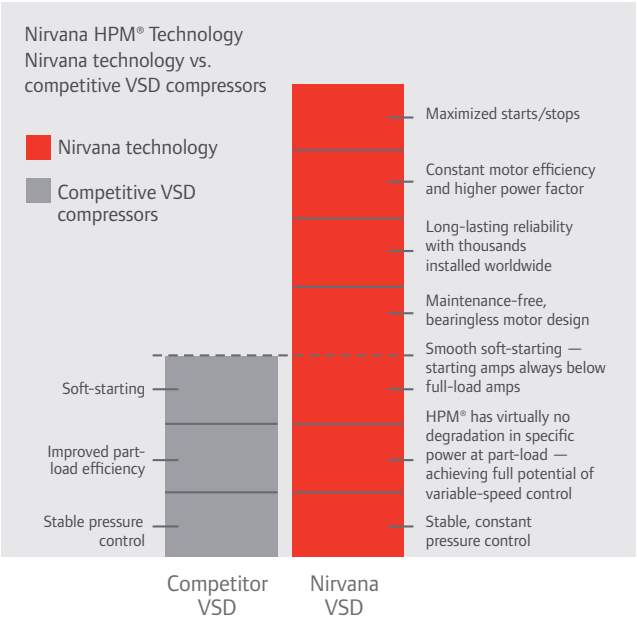
Purely Better with Nirvana Variable Speed

Nirvana is not just any variable speed compressor. It provides so much more value than competitive designs.

We fully integrate matched variable speed drives with the appropriate motors to maximize efficiency and reliability.

Exclusive HPM motor technology maintains the highest efficiency and a near unity power factor throughout the entire speed range.

Enjoy wide turndown while providing the ability to turn off immediately at minimum speed, so there's no need to continue running unloaded with Nirvana HPM technology.



How We Build Reliability into Every Component

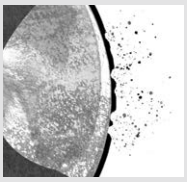
Rotor Performance—The Key to Reliable Compressor Operation

Compressor rotors take a beating. Over time, their surfaces can deteriorate, making rotors increasingly susceptible to compressed air impurities and temperature fluctuation.

Ingersoll Rand eliminates this problem with UltraCoat, an advanced rotor and housing protection process that ensures the most durable coating, with unmatched adhesion properties and temperature resistance.

Typical Problems of Coatings on Oil-Free Rotors

Rotor Coatings Wear Off



Contaminants cause coatings to deteriorate, leaving microcavities on the rotor surface.

Exposing Steel Rotors

Once the coating wears off, carbon steel rotors used in competitor's products will corrode.

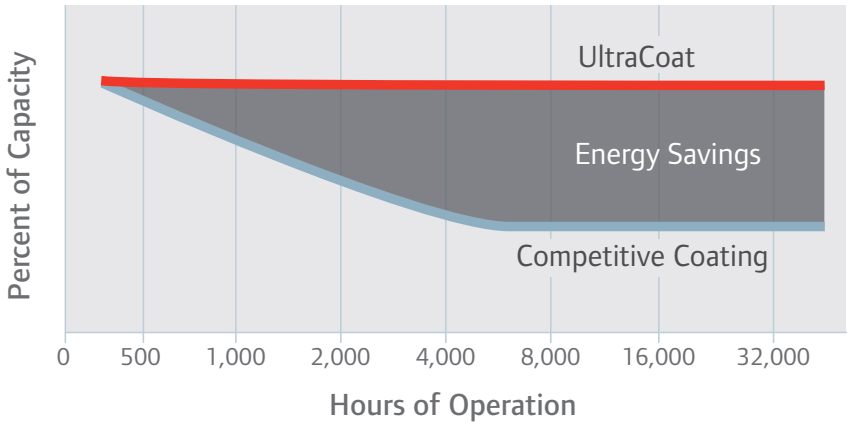
Resulting in Damage

Rust and pitting will develop, leading to damaged rotors, inefficient operation and possible compressor failure

UltraCoat—Energy Savings and Longer Life

Ultracoat is comprised of a patented MoS_2 (molybdenum disulfide) blend that forms a virtually unstoppable chemical and mechanical bond with the rotor's surface.

This long-lasting formula continuously delivers the precision and lubricity required for tight tolerance performance in the compressor's rotary screw. In conjunction with a best-in-class second-stage stainless steel rotor, UltraCoat delivers greater reliability in performance and air quality, rotor longevity, increased uptime, and reduced energy costs.



View Products
See our entire portfolio of oil-free compressors

Proven airends

Our rotary screw airends deliver their full potential through unparalleled rotor profile accuracy and repeatability for both fixed and variable speed oil-free compressors. Reliability is further bolstered by 4-point ball bearings and cylindrical roller bearings that require no additional thrust management.

Dual-vented seals

Our stainless-steel ring seals and labyrinth oil seals provide dual-vented, 100% guaranteed oil-free air.

Water-cooled and air-cooled options

Cooling systems are designed for 46°C (115°F) operation, ideal for harsh environments and preventing heat exchanger fouling.

Inlet valve superiority

Robust and very low maintenance hydraulic valve actuation, with mechanical linkage between inlet and blowoff, eliminates the need for periodic diaphragm replacement, preventing unnecessary downtime and maintenance costs.

100% maintenance-free motor

Leading HPM® technology for variable speed with near unity power factor delivers unmatched efficiency throughout the turn-down range, unlimited starts and stops and less power at start-up.

Sierra – 50 and 60 Hz Performance

Model	FAD at 7 bar g (100 psig) m^3/min (cfm)	FAD at 8.6 bar g (125 psig) m^3/min (cfm)	FAD at 10.3 bar g (150 psig) m^3/min (cfm)	Nominal kW (hp)
SL/SM/SH (50 Hz)	6.0-25.9 (212-915)	5.1-24.6 (180-869)	7.8-22.1 (275-780)	37-150 (50-200)
L/H/HH (60 Hz)	6.1-25.8 (216-911)	5.3- 24.2 (186-854)	7.6- 21.5 (268-759)	37-150 (50-200)

Nirvana – 50 and 60 Hz Performance

Model	FAD at 7 bar g (100 psig) m^3/min (cfm)	FAD at 8.6 bar g (125 psig) m^3/min (cfm)	FAD at 10.3 bar g (150 psig) m^3/min (cfm)	Nominal kW (hp)
IRN	5.7-25.6 (200-906)	5.1-24.1 (180-853)	7.6 -22.8- (269-807)	37-160 (50-200)

AIR TREATMENT

Moisture and contamination in compressed air cause significant problems in equipment operation, such as rust, scale and clogged orifices that result in product damage or costly shutdowns. Making our air treatment equipment an integral component of your compressed air system will improve productivity, system efficiency and product or process quality.

HOC Dryers: Maximum Performance, Minimal Energy Use

HOC dryers recover the heat that is a natural by-product of the compression process to provide moisture-free air, while consuming virtually no energy.

Desiccant Dryers

Choose desiccant dryers when very low dew points are necessary for high quality air and to prevent potential freeze-up. Depending on whether you require lower initial capital costs, or lower energy use, choose from heat-of-compression (HOC), heatless, externally heated or heated blower desiccant models.

Desiccant Dryer Features

- **Delivers reliable -40°C (-40°F) pressure dew point** in most operating conditions
- **High-strength desiccant** and durable valves
- **Low pressure drop design** saves energy
- **Advanced microprocessor control** is easy to use and maximizes uptime

View Products
Find the Right Dryer for Your Application

Refrigerated Dryers

Our cost-effective refrigerated dryers provide clean, dry air for most industrial applications. Choose efficient cycling dryers to maximize energy savings or non-cycling dryers for a lower initial cost.

Refrigerated Dryer Features

- **Dew points as low as 3°C (38°F),** meeting Class 4 requirements
- **Corrosion-free heat exchanger** design for reliable operation
- **Intuitive microprocessor control** for easy operation
- **Compact design** for easy serviceability

Cost-Effective Operation

Choose refrigerated dryers for lower capital, operating and maintenance costs for many industrial applications.

OIL-FREE PARTS AND ACCESSORIES

A compressed air system is a significant investment. You expect consistently reliable, clean dry air at the lowest possible operating cost. Choose our genuine parts and accessories to ensure that your compressor is running efficiently and productively.

F-Series In-Line Filters

Our advanced compressed air filters reduce contamination in your air stream to help protect finished goods, critical processes and valuable equipment.

Heavy-Duty No-Loss Drains

No-loss electronic and pneumatic drains are the most reliable, durable and energy-efficient wayto remove condensate from air compressors and system components.

Power Management

Lower your cost of ownership with our power management solutions, including disconnects, line reactors, fuses, transformers and variable frequency drives.

Airend Remanufacture

Our rotary airend program will maximize your compressor lifecycle while consuming less. It saves money, promotes reuse and eliminates unscheduled interruptions.

Filters

Ingersoll Rand provides the highest-quality OEM filters for preventative maintenance that eliminate the risk of using will-fit parts.

OEM Replacement Parts

We have the exact genuine OEM parts you need with extensive inventories maintained in strategic locations around the world.

Don't Settle for Knock-Offs
Learn about the True Value of Genuine OEM Parts

Installation Solutions

We offer a complete range of products and services in compressed air system installation, integration and commissioning. Regardless of the size and scope of the job, Ingersoll Rand has the capability to manage your project from start to finish.

Project Management Services

Fully integrated services managed by experts that ensure efficient operation

SimplAir® Piping Systems

Durable aluminum piping and “quick-connect” fittings enable easy installation

Air System Accessories

Everything you need to deliver clean, dry air from the compressor to point of use

View OEM Parts
See our Portfolio of Oil-Free Accessories

MAINTENANCE

Ensure reliability for the life of your compressed air equipment with our CARE service programs. With CARE, we have one goal —to earn the right to be be your trusted partner.

The CARE Service Program Advantage

Compressed air is critical to your operation. A proper maintenance strategy is crucial to avoiding unplanned, unbudgeted downtime and production interruptions. By choosing an Ingersoll Rand CARE service program, you are investing in your future with a trusted partner.

Depending on your oil-free compressor system maintenance requirements, choose from one of these two programs:

PackageCARE™ Total Protection, Eliminate the Risk

PackageCARE™
We Protect You

- Greatest value for asset management
- Transfer operational risk for up to 10 years
- Includes all scheduled maintenance
- Predictive and analytical tools prevent production interruptions

PlannedCARE™ Comprehensive Parts and Service Coverage

PlannedCARE™
We Help You

- Predictable, on-time planned maintenance
- Preventative diagnostics to catch potential problems
- Up to 5-year coverage on major airend components in new rotary compressors

Find the Best CARE Plan for You
Answer 7 Questions to Find Out!

IT ALL ADDS UP TO PEACE OF MIND

Lower Cost of Ownership
CARE service programs provide the most cost-effective solutions based on your customized maintenance strategy.

Quality Results
Ingersoll Rand factory-trained service technicians are backed by more than 145 years of industry experience.

Increased Uptime
Our CARE 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.

Productivity is reduced by air loss caused by emergencies, maintenance and ongoing inefficiencies in your facility. Use our comprehensive products and services to minimize short term production losses and meet longer term sustainability goals.

Ingersoll Rand Rentals

Minimize costly interruptions using Ingersoll Rand's comprehensive Rental Services. You'll get quick response, a broad line of robust products and unparalleled on-site experience that satisfies your exact requirements when you need it, for emergencies or long-term planning.

The Air You Need, the Way You Want it

- Oil-free compressors 75-300 kW (100-400 hp)
- Extensive compressor inventory
- Air dryers with dew points from -40°C to +3°C (-40°F to +38°F)
- Heavy-duty, outdoor-ready designs
- Connection accessories
- Short- and long-term agreements
- Multiple depot and service locations
- Comprehensive contingency planning
- Electric systems for low-cost operation

Air the Way You Want It
Learn more about our rental services

PERFORMANCE SERVICES

Electronic Assessment

Air Leak Assessment

System Assessment

Whether you need to manage costs, increase reliability or plan for future growth, our portfolio of assessment tools will provide you with detailed diagnostics that give you the proper insights to help lower total cost of ownership.

- Track System Performance
- Increase System Efficiency
- Improve Production and Reduce Waste
- Eliminate the Guesswork

Lower Your TCO
Learn More about Performance Services

System Automation

System assessments often identify waste caused by lack of adequate controls. Our suite of system automation solutions lower energy costs and stabilize pressure.

IntelliFlow In-line Controller

Visualization (VX)

X-Series System Controls

Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a $14 billion global business committed to a world of sustainable progress and enduring results. For more information, visit www.ingersollrand.com.

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