Ingersoll Rand

Oil-Free Rotary Screw Air Compressor Systems

37-160 kW (50-200 hp)

ISO 8573 Class 0 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 maximise efficiency and performance.

Take a Systems Approach

Delivering reliable oil-free compressed air to your facility goes well beyond the compressor itself. Optimise 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 optimisation.

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 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

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

ISO 8573 Class 0 Oil-Free Air

ISO 8573-1 Air Quality Classes

Quality Class	Oil & oil vapor mg/m^3
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.

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

Oil-Free Compressors for Your Application

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 atomisation, 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 variable speed drive (VSD) compressors for fluctuating demand, or fixed speed compressors for constant demand.

Best of Both Worlds

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

Launch The Video
See Our Oil-Free Capabilities

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

Efficient Design

In addition to the advanced airend and package design that delivers best-in-class mechanical efficiency, the hybrid permanent magnet (HPM) motors in our variable speed compressors provides best-in-class motor efficiency throughout the speed range.

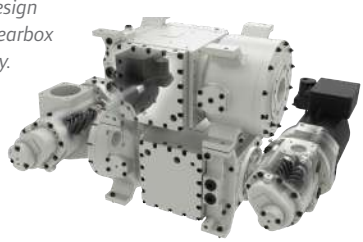
Robust Components

Proven, trouble-free airends with advanced rotor coating technology, along with superior leak-free seal designs provide reliability for life.

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.

The E-Series features a unique dual motor design that eliminates the gearbox to maximise efficiency.



The Very Best in Efficiency

With up to 13% additional power savings versus conventional variable speed oil-free rotary air compressors, the E-Series VSD platform is like no other compressor on the market. Its unique drive design uses a revolutionary dual motor and "digital gearbox" to continuously monitor and adjust individual airend speeds. The water-cooled airend jacket provides superior cooling, significantly reducing the amount of oil required for lubrication, ensuring maximum performance. E-Series features include:

- Ultra-efficient dual HPM motors eliminate gearbox
- Meets Class 0 standards for oil and silicone free air
- Best-in-class footprint, 37% smaller than industry standard
- Significantly reduced noise levels (69 db(A) water-cooled, 70 db(A) air-cooled)
- Robust and unique sealing design prevents leakage
- Intuitive, advanced controller with IoT connectivity
- Heat recovery option recoups up to 98% of the heat generated during the compression process

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 maximise efficiency and reliability. 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.

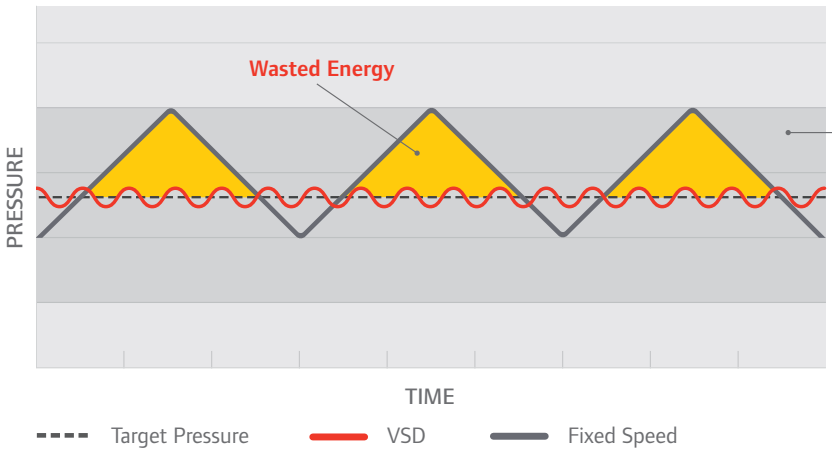
Our easy to use Xe-Series controller will make a huge difference in managing your system efficiency, as well as your bottom line. The intuitive, high-resolution color display makes important compressor information easy to find.

Nirvana Variable Speed Oil-Free Compressor

View Products
See our entire portfolio of oil-free compressors

The Variable Speed Advantage

We fully integrate matched variable speed drives with the appropriate motors to maximise efficiency and reliability in our E-Series and Nirvana compressors. The high-performance HPM motor provides wide turndown and the ability to turn off immediately at minimum speed, so there's no need to continue running unloaded. VSD air compressors maximise energy savings while delivering reliable, clean air.



Achieve Up to
35% Savings
Over Traditional Fixed Speed

Fixed speed compressors usually require a larger control band, while VSD compressors operate much closer to the target pressure. Every 1 bar (15 psi) over required pressure costs an additional 7% in power!

AIR COMPRESSORS

The Reliable Workhorse

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

Engineered to Your Application

Special requirements are no problem for Ingersoll Rand oil-free compressors. We provide a customised solution matching your application with our extensive options list.

- Freezing temperatures
- Construction materials
- Enclosure coating
- Electrical classification
- Instrumentation and tagging
- Controls and connectivity
- Motors and starters
- Remote mounted variable speed drives
- Material certification and acceptance testing

View Products
See our entire portfolio of oil-free compressors

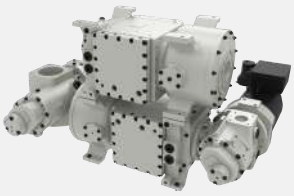
The Choice is Yours

Type	Reliability	Efficiency	Air-cooled and Water-cooled Options	Intuitive Controller with Remote Access	Variable Speed Drive	Dual Drive Digital Gearbox	Integrated Heat Recovery Option	Silicone-free Air
Sierra	✓++	✓	✓	✓	-	-	-	-
Nirvana	✓++	✓+	✓	✓	✓	-	-	-
E-Series	✓++	✓++	✓	✓	✓	✓	✓	✓

Optimise Your Demand

Mix and match motors and airends to achieve the exact level of performance and economy your operation and budget require.

Sierra — **Efficiency for Constant Demand:** Fixed speed compressors featuring the reliable and efficient IE3 TEFC induction motor



Nirvana — **Efficiency for Variable Demand:** VSD compressors with the highest efficiency motor available

E-Series — **Premium Efficiency for Variable Demand:** VSD compressors with enhanced features for improved performance and efficiency

How We Build Reliability into Every Component

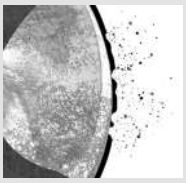
Rotor Performance—The Key to Reliable Compressor Operation

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 our 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.

Advanced Rotor Coatings—Energy Savings and Longer Life

Our rotor coatings deliver greater reliability in performance and air quality, rotor longevity, increased uptime, and reduced energy costs.

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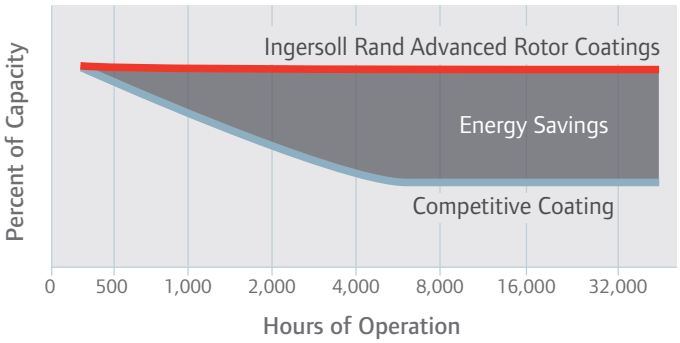

Specifications

Sierra – 50 and 60 Hz Performance				
Model	**FAD at 7 bar g (100 psig) m³/min (cfm)**	**FAD at 8.6 bar g (125 psig) m³/min (cfm)**	**FAD at 10.3 bar g (150 psig) m³/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) m³/min (cfm)**	**FAD at 8.6 bar g (125 psig) m³/min (cfm)**	**FAD at 10.3 bar g (150 psig) m³/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)
E-Series – 50 and 60 Hz Performance				
Model	**FAD at 7 bar g (100 psig) m³/min (cfm)**	**FAD at 8.6 bar g (125 psig) m³/min (cfm)**	**FAD at 10.3 bar g (150 psig) m³/min (cfm)**	**Nominal kW (hp)**
E75ne –E160ne	6.7–24.0 (237-847)	7.0-23.9 (245–843)	7.7–23.6 (272–835)	75-160 (100–200)

AIR TREATMENT

OPERATE

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 maximises 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 maximise 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

EXTEND

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 way to 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 and transformers.

Bolt-on Variable Speed Drives (VFDs)

External bolt-on VFD retrofits exactly match your compressor's output to the capacity required by varying main drive motor speed.

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.

PackageCARE™
We Protect You

Total Protection, Eliminate the Risk

PackageCARE™ represents the greatest value for asset management by transferring operational risk to Ingersoll Rand. We are responsible for scheduled maintenance, as well as using predictive and analytical tools to help prevent unexpected interruptions in your production.

Preventative and Predictive
PackageCARE™ is proactive. Other companies only replace parts after they have failed.

No Proration
We are committed to keeping equipment operational at no additional cost.

Trustworthy Pricing
Competitive agreements increase in price for parts and service labor at the will of the supplier.

Risk Transfer
Extended warranties on competitive agreements typically cover defects in materials and workmanship, specifically excluding wear and tear, corrosion, etc. PackageCARE™ covers it all.

No Fine Print
The fine print on many agreements with extended warranties allows companies the opportunity to deny claims. Additionally, certain aspects of a repair are not covered, such as consumables or travel. With PackageCARE™, there's no fine print.

No Paperwork Hassles
Extended warranties require you to maintain certain records or submit information to the supplier, otherwise coverage can be denied.

No Surprises
Most extended warranty contract language states they can terminate for convenience. With PackageCARE™, we cannot walk away.

Flexibility
PackageCARE™ has more flexibility than an agreement with extended warranty. You can add older equipment, dryers and filters or include a rental compressor.

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 customised 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.

SERVICES & OPTIMISATION

OPTIMISE

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

Ingersoll Rand Rentals

Ingersoll Rand RENTAL SERVICES

Minimise 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

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 stabilise pressure.

IntelliFlow In-line Controller

Visualisation (VX)

X-Series System Controls

Ingersoll Rand

About Ingersoll Rand Inc.

Ingersoll Rand Inc. (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to helping make life better for our employees, customers and communities. Customers lean on us for our technology-driven excellence in mission-critical flow creation and industrial solutions across 40+ respected brands where our products and services excel in the most complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity and efficiency. For more information, visit www.IRCO.com.

IngersollRand.com

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