Ingersoll Rand

Oil-Free Rotary Screw Air Compressor Systems

15-160 kW

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 maximise efficiency and performance.

Take a Systems Approach

Delivering reliable 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

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

Ingersoll Rand Contracting Services Video

WHY CHOOSE A WORLD-CLASS ROTARY SCREW COMPRESSED AIR SYSTEM?

You need a reliable, cost-effective solution that complies with the most stringent air quality standards, features industry-leading energy efficiency and is backed by a global network of experts. That's what you get with our oil-free rotary screw air compressors.

For Efficiency and Air Flow

Advanced airend and drive component design provide world-class specific power and improved air flow, resulting in reduced energy use.

For Reliability

Every component in our oil-free compressor system supports maximum reliability for increased productivity, longer equipment life, lower operating costs and higher profitability.

For Virtually Any Environment

Our oil-free compressors have flexible standard and optional design features that allow operation both indoors and outdoors at extreme ambient temperatures as well as in harsh environments.

For Lower Cost of Ownership

Intuitive microprocessor controls, easy serviceability and long-life consumables significantly reduce operating, maintenance and service costs over the lifetime of your compressed air system.

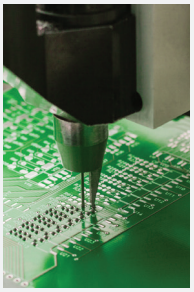
Class 0
ISO 8573
Oil-Free Air

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.

Rotary Oil-Free Compressors Designed for Your Application



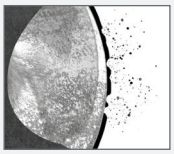



Read the Whitepaper—Oil-free Compressed Air for the Chemical Process Industry

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

Typical Problems of Coatings on Oil-Free Rotors

Rotor Coatings Wear Off



Contaminants cause coatings to deteriorate, resulting in 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

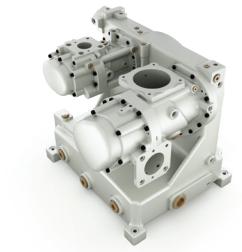
Rust and pitting will develop, leading to damaged rotors, inefficient operation and possible compressor failure.

Reliable Rotor Performance and Protection with UltraCoat

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

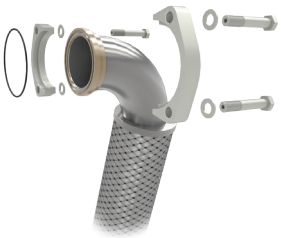
Ingersoll Rand eliminates this problem with UltraCoat, our advanced rotor and housing protection process that ensures the most durable coating, with unmatched adhesion properties and temperature resistance.

Lower Energy Cost



Advanced airend, variable speed drive (VSD) technology and package design deliver best-in-class efficiency throughout the speed range.

Robust Components



V-Shield™ leak-free PTFE stainless steel braided hoses and O-Ring face seals and hydraulically actuated inlet valves provide reliability for life.

Flexible Design Options

Air-cooled and water-cooled configurations, extreme ambient temperature options, high dust filtration and outdoor modifications for harsh environments.

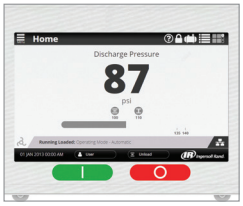
Simple and Serviceable

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

Optional Heat Recovery

Our turnkey, plug-and-play heat recovery option for water-cooled models recoups up to 98% of heat generated during compression, reducing energy costs.

Intelligent Uptime



Next generation controllers like the XS-255 provide an enhanced user-experience with advanced diagnostics, integrated systems control, real-time remote monitoring and improved connectivity.

The New Standard for Efficiency

Our 90-160 kW E-Series oil-free rotary screw air compressors include fixed speed models with IE4 motor efficiency as well as best-in-class variable speed models with IE5 ultra-premium motor technology. All models benefit from a completely redesigned and improved airend; combined with a proven package design, the E-Series provides up to 14% more efficiency and 35% more turndown as compared to previous designs, reducing your energy costs significantly. Not only did we maximise efficiency, but we also maximised output flow to provide the highest airflow of any oil-free 160 kW rated compressor on the market.

- Variable speed compressors featuring IE5, ultra-premium HRM motors
- Meets Class 0 standards for oil- and silicone-free air
- Smart cooler configurations for air, water or harsh water environments
- Reduced leak paths
- Dual-vented seals and power breather mist eliminator
- Intuitive, advanced controller with IoT connectivity
- Energy recovery system ready

The E-Series features a newly designed airend and reliable components to ensure a low TCO.

Dual Design, Premium Performance

With up to 13% additional power savings versus conventional variable speed oil-free rotary air compressors, the E-ne Dual Direct Drive 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 jackets provide additional efficiency. Oil requirements are minimised thanks to the direct coupling of airends and motors, eliminating the need for a physical gearbox.

The E-ne Dual Direct Drive features a unique dual motor design that eliminates the gearbox to maximize efficiency.

- Unique drive design with two high speed permanent magnet motors and digital gearbox maximises efficiency
- 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 for all air-cooled and water-cooled models recoups up to 98% of heat generated during compression

See Our Entire Portfolio of Oil-free Compressors

100% Oilless Operation with the Eh Series

Our 15-37 kW Eh Series compressors have the same great reliability as our larger models, including 100% oilless operation and long-life, vibration-free compression elements. The single-stage, direct drive compressor is designed with a water-injected compression system that provides superior cooling, lubrication and sealing. All models are available with an optional VSD for exceptional efficiency and unmatched turndown rates.

Purely Better with Nirvana

Nirvana 37-75 kW compressors provide greater value than competitive designs, with a fully integrated VSD matched with the appropriate motor 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 and virtually unlimited starts and stops, so there's no need to continue running unloaded.

The Reliable Workhorse

Sierra 37-75 kW fixed speed compressors provide 100% oil-free Class 0 compressed air for safe, continuous and efficient operation with a robust design. Standard options include a TEFC high efficiency motor, star-delta starter, NEMA 4 electrics, high dust filtration and high ambient operation up to 46°C (115°F).

See Our Entire Portfolio of Oil-free Compressors

Engineered to Your Application

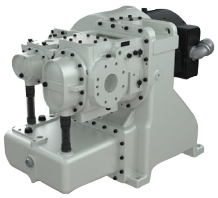
Special requirements are no problem for Ingersoll Rand oil-free compressors. We offer a variety of options that include extreme temperature operation, harsh environment construction, various electrical classifications, instrumentation and tagging, multiple types of controls, connectivity, motors and starters, remote-mounted variable speed drives, material certification and acceptance testing.

The Choice is Yours

Type	kW	Reliability	Efficiency	Air-cooled and Water-cooled Options	Intuitive Controller with Remote Access	Variable Speed Drive	Dual Drive Digital Gearbox	Heat Recovery Option	Power Breather Mist Eliminator
E-h	15-37	✓++	✓++	✓	✓	✓	–	–	–
Sierra	37-75	✓++	✓	✓	✓	–	–	✓	–
Nirvana	37-75	✓++	✓+	✓	✓	✓	–	✓	–
E-i/n	90-160	✓++	✓++	✓	✓	✓	–	✓	✓
E-ne Dual Direct Drive	75-160	✓++	✓++	✓	✓	✓	✓	✓	✓

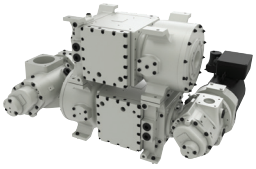
Optimise Your Demand

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 air compressors featuring a reliable and efficient TEFC induction motor

NIRVANA **Efficiency for Variable Demand:** VSD air compressors with the highest efficiency motor available



E-SERIES **Premium Efficiency for Constant or Variable Demand:** Fixed speed and VSD air compressors (h, i, n models) with enhanced features for improved performance and efficiency; 75-160 kW VSD models (ne) with ultra premium efficiency, best-in-class footprint and noise level, upgradability, optional heat recovery for air— and water-cooled models and much more

Sierra – 50 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	6.1-12.0 (216-424)	5.3-11.6 (186-411)	7.6-11.1 (268-390)	37-75 (50-100)
Nirvana and E15-37h - 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	5.7-12.3 (200-435)	5.1-11.3 (180-400)	7.6-10.4 (269-368)	37-75 (50-100)
E15-37h	1.9-5.9 (67.0-209.4)	1.9-5.1 (67.0-180.1)	1.8-5.0 (63.5-176.5)	15-37 (20-50)
E-Series – 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)
E90-160i	17.4–28.3 (614–1000)	16.7–28.0 (591–990)	14.6–26.1 (517–922)	90–160 (121–215)
E90-160n	6.7–26.9 (237–950)	7.6–26.8 (267–945)	9.1–25.2 (321–890)	90–160 (121–215)
E75-160ne	6.7-24.0 (237-847)	7.0-23.9 (245-843)	7.7-23.6 (272-835)	75-160 (100-200)

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.

Desiccant Dryers

Desiccant dryers offer very low dew points and prevent potential freeze-up. Depending on whether you require lower initial capital costs, or lower energy use, choose from heat-of-compression (HOC), heatless or heated blower desiccant models.

Desiccant Dryer Features

- Delivers reliable -40°C (-40°F) PDP 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

Subfreezing Dryers

The SF is the only regenerative refrigerated dryer that combines the subfreezing pressure dew point (PDP) of a desiccant dryer, with the low operating and energy costs of a refrigerated dryer.

Subfreezing Dryer Features

- ISO Class 3 high-quality air with a -20°C (-4°F) PDP
- Low temperature operation, ideal for subfreezing temperatures
- Patented heat exchanger design reduces operating costs
- No costly consumables, lowering maintenance costs

Refrigerated Dryers

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

Refrigerated Dryer Features

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

Find the Right Dryer for Your Application

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 along with our installation solutions 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 drains are the most reliable, durable and energy-efficient way to remove condensate from air compressors and system components.

Power Management

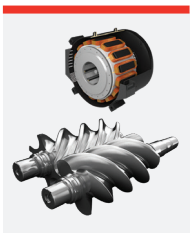
Lower your cost with our power management solutions, including disconnects, line reactors, fuses and transformers.

Bolt-on Variable Frequency Drives

External bolt-on VFD retrofits match your compressor's output to the exact 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 genuine OEM parts you need with inventories maintained in strategic locations around the world.

See our Entire Portfolio 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

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

Ensure reliability for the life of your compressed air equipment with our comprehensive maintenance programs. At Ingersoll Rand, we have one goal—to earn the right to be your trusted partner.

Maintenance Program Advantages

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 compressor maintenance agreement, you are investing in your future with a trusted partner.

Depending on your rotary screw compressor system we can customise a service program that best fits your needs. Our suite of CARE compressor maintenance programs range from total risk transfer of your equipment to Ingersoll Rand to more basic programs for parts and services only, providing flexible solutions for the life of your compressed air system.

Each of Our Maintenance Programs Offer Significant Benefits, Including:

- Genuine OEM parts eliminate exposure to unnecessary equipment wear and tear, reducing downtime
- Rapid response, because as an Ingersoll Rand service program customer, you are our top priority
- Optimised services for your specific operation that are structured to lower electricity consumption
- Early detection and predictability that eliminates surprises and unwanted costs
- Automated shipment or scheduling reminders prevent overlooking or under-maintaining equipment
- Equipment that lasts longer and runs better by replacing the right parts at the right time
- Premium monitoring via the Helix™ Connected Platform to maximise productivity

Choose the Right Maintenance Program for You

IT ALL ADDS UP TO PEACE OF MIND

Lower Cost of Ownership

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

Quality Results

Ingersoll Rand factory-trained service technicians are backed by more than 145 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.

Productivity is reduced by air loss caused by ongoing inefficiencies as well emergencies in your facility. Use our Helix Connected Platform to meet long term sustainability goals and our rental services to minimise short term production loss.

HELIX™ Deep Insights for Dependability

Developed to give you essential visibility into day-to-day operational intelligence that maximises your uptime and peace of mind, the Helix™ Connected Platform from Ingersoll Rand offers real-time data monitoring for your compressed air system.

Advanced sensor technology inside the compressor sends data on a regular basis to our cloud-based platform. This data gives you a clear view into the functionality and health of your compressor, and is easily accessible around-the-clock from your PC, tablet or smartphone. With a range of connectivity service offerings available, Helix™ monitoring can be tailored to meet your specific operational needs.

- Deep insights for preventive maintenance, efficient repair work, and detailed analysis of equipment performance over time
- Diagnostic reporting that help maintenance teams keep your compressor operating at peak performance and reduce downtime
- Continuous real-time operating data available anytime, anywhere
- Maintenance notifications that help ensure reliability and extend equipment life

Learn More about the Helix™ Connected Platform

Ingersoll Rand Rentals

Minimise costly interruptions using Ingersoll Rand's comprehensive Rental Services. You'll get a 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.

Ingersoll Rand RENTAL SERVICES

The Air You Need, the Way You Want it

- Oil-free compressors 37-355 kW - 7.0-10.7 bar g
- Extensive compressor inventory
- Air dryers with dew points from -40°C to 3°C
- 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

Learn More about Our Rental Services

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

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