Ingersoll Rand

Contact-Cooled Rotary Screw Air Compressors

R Series - 190-225 kW

Reliability

Efficiency

Productivity

A New Level of Reliability, Efficiency and

Nirvana 190-225 kW rotary air compressors offer the very best of time-proven designs and technologies with new, advanced features that ensure the highest levels of **reliability, efficiency and productivity** available in their class today.

Time-proven Quality Airend

At the heart of all our Nirvana compressors is our rugged, roller bearing-equipped two-stage airend, engineered for exceptional reliability.

Patented Modular Drive for Maximum Productivity

Nirvana features an all new, compressor-specific frequency-inverter drive designed with the latest technology, while using standard components for easy repair and diagnosis.

- On-board drive diagnostics are easy to read on our Intellisys® microprocessor controller.
- Field-replaceable standard modular components in the unlikely event of failure.
- Easily diagnosed and serviced on-site by qualified Ingersoll Rand service personnel, eliminating downtime.
- 60% smaller than standard frequency inverters.
- Controlled soft start eliminates current surges, further extending component life and system reliability.

Variable Speed Cooling

Our system incorporates an intelligent cooling design, including positioning the after-cooler at the end of the package to allow cool compressed air that is only 8°C (15°F) above ambient to pass downstream to the air system.

- Eliminates thermal shock to components, reducing downtime.
- Consistent discharge temperature enhances system reliability.
- Energy consumption is matched to thermal load.
- Oversized components operate at 46°C (115°F), ensuring trouble-free operation in conditions that shut down most compressors, including those caused by dirty coolers.

Productivity

Ingersoll Rand's Nirvana two-stage rotary screw air compressors can achieve energy savings of up to 15% over single stage units.

Maximum Efficiency at Virtually Any Load

At full load, the new Nirvana compressor delivers the most air, using the least energy. Conventional fixed speed compressors frequently produce extreme pressure fluctuations, including those outside their optimum range, greatly reducing efficiency. Nirvana compressors provide a true variable speed drive, delivering constant air pressure regardless of demand and achieving constant pressure and maximum efficiency across their entire operating range.

Easy Service, Easy Control

The Nirvana compressor package is remarkably uncluttered – it contains fewer components that need servicing than any other compressor, with everything readily accessible behind easily removable panels. And the intuitive Intellisys controller gives you complete, fingertip access to your compressor, including easily adjustable operating parameters and time-saving on-board diagnostics.

Lowest Cost of Ownership and Operation

Nirvana compressors lower the total cost of ownership and ongoing operating costs. For example, conventional compressors can draw 800% of the normal load at start-up. Nirvana's Hybrid Permanent Magnet (HPM) motor limits the in-rush current to less than 100%, minimising peak charge readings and reducing energy bills. Nirvana simply reduces speed and volume to meet demand. And, rather than run unloaded, the compressor shuts off, whilst allowing unlimited starts per hour with no motor life decrease and plenty of energy savings.

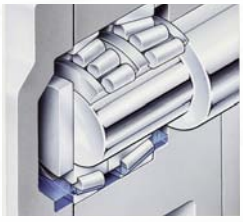
Innovative Design and Performance

More than a hundred years of advanced compressor design and manufacturing know-how have gone into the new Nirvana line. This industry-leading expertise and innovation are demonstrated by the **exceptional levels of reliability and performance** delivered by our new Nirvana compressors.

The New and The Proven

Nirvana rotary air compressors represent the ideal combination of Ingersoll Rand's proven technologies with our latest design enhancements. Our Nirvana premium efficiency compressor features Ingersoll Rand's time-tested two-stage airend, renowned for trouble-free operation and minimal maintenance.

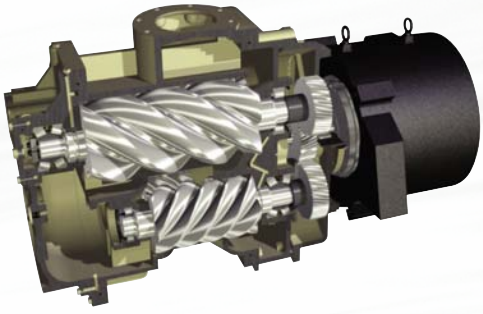
- The Variable Frequency Drive (VFD) uses a standard inverter well recognised for providing dependable service in manufacturing operations around the world.
- Each airend incorporates a coolant dam that traps coolant in the bearing during shutdown to ensure proper lubrication during the critical start-up phase, and longer bearing life.
- High-quality duplex tapered roller bearings provide line contact for thrust loads dramatically extending airend life.
- Precision-machined rotors ensure unmatched rotor profile accuracy, repeatability and efficiency.



Reduced Bearing Loads

A lower compression ratio in each stage reduces bearing loads and increases airend life. High quality bearings ensure years of reliable, efficient service.

Nirvana's two-stage airend provides a combined energy savings of 33-41%!



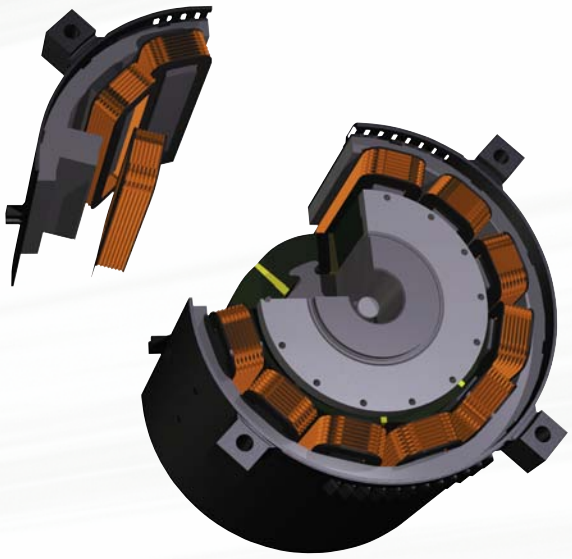
Industry-leading Two-stage Performance

A Nirvana two-stage compressor outperforms any VFD compressor at full or partial load…it decreases energy costs by 22-30% over a fixed speed compressor…delivers 11-15% more air than a single-stage compressor…and yields 33-41% total energy savings. That's performance you can bank on! One of the keys to the two-stage's efficiency is the coolant curtain. Significant air cooling is achieved by injecting atomised oil into the compressed air stream leaving the first stage. This lowers the energy required for second-stage compression whilst eliminating the need for an intercooler.

More Air, Less Energy

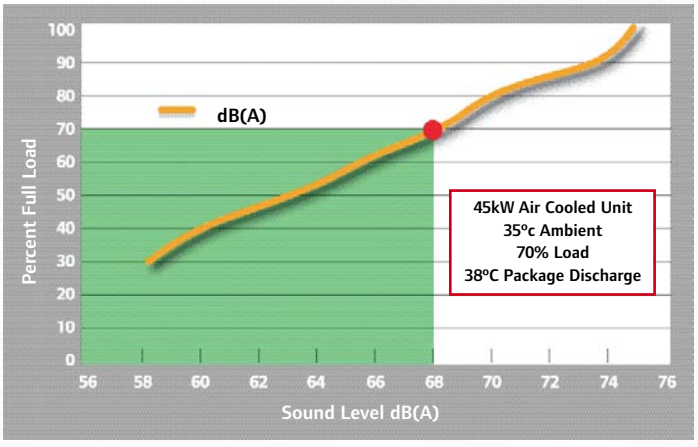
Our high-efficiency HPM motor produces more air across a wider operating range with no increase in power consumption. The motor's unique permanent magnet design allows it to run at 95% efficiency throughout the entire speed range versus the typical induction motor, which deteriorates significantly with speed.

- Uses four times as many poles and generates 33% more magnetic flux than the traditional motor for premium efficiency and power factor.
- Has two times the air gap for increased cooling enabling unlimited starts and stops, which turns Nirvana off rather than running it unloaded, saving energy.



Long-life Lubricant: 8,000 Hours Between Changes

With Nirvana, you typically need to change our Ultra Coolant only after 8,000 hours of operation…that's typically two years between change outs. This means more uptime and lower coolant costs.



A Coolant Conditioner for Optimum Thermal Discharge and Performance

The unique Nirvana Coolant Conditioner matches the performance of the cooling system to that of the ambient air temperature, maximises bearing life, lowers energy consumption cost and keeps noise levels to a whisper – typically as low as 59-67 dB(A). What's more, the VFD on the Nirvana coolant circuit eliminates the life-shortening build-up of moisture in the coolant at partial loads common with other VFD compressors.

Leak-Free…by Design

By using SAE O-rings on connections, we have significantly reduced potential leakage problems associated with conventional compressors. Our quality and design combine to make the Nirvana virtually leak free… further adding to the reliability of this remarkable compressor.

A Configuration For Every Need

Category	Description	Variable Speed
Airend	Premium two-stage airend with duplex tapered roller bearings	**Standard** ◀
Controller	Energy-saving microprocessor controller	**Standard** ◀
	On-board diagnostics and shutdown protection	**Standard** ◀
	Easy to use operator interface in 27 languages	**Standard** ◀
	Programmable start/stop operation	**Standard** ◀
	Selectable units of measurement display	**Standard** ◀
	Remote connectivity to building management system	**Standard** ◀
	Integral sequencing control for up to four units	**Standard** ◀
	Built-in energy savings calculator	**Standard** ◀
Cooling System	Air-cooled end-to-end cooling system optimised for efficiency & serviceability	**Standard** ◀
	Energy-efficient, low noise cooling system	**Standard** ◀
	High efficiency package cooling system rated for 46°C (115°F)	**Standard** ◀
	Water cooling	Optional
Leak Prevention Services	Leak-free prevention connections with SAE O-ring fittings	**Standard** ◀
	Fluid containment system	**Standard** ◀
	Simple ducting	**Standard** ◀
	12-month full package warranty	**Standard** ◀
Auxiliary Systems	Noise reduction enclosure	**Standard** ◀
	Electronic no loss condensate drains	**Standard** ◀
	Long life air and separator filters (4,000 hours)	**Standard** ◀
	8,000-hr life Ultra Coolant	**Standard** ◀
Motors & Electrical Systems	Hybrid Permanent Magnet motor (HPM)	**Standard** ◀
	Control panel protection NEMA 12/IP54	**Standard** ◀
	Variable frequency drive on main motor and fan motor	**Standard** ◀
Environmental	Energy recovery system	Optional
	X-tend food-grade coolant	Optional
	X-tend filtration system	Optional
Power Protection	Power Outage Restart Option (PORO)	Optional
	Phase monitor	Optional
General Options	Comprehensive service and coverage plan	Optional

ne 50 Hz Performance

Model	Rated Pressure bar g	psig	Nominal Power kW	hp	Capacity m^3/min	cfm	Dimensions (mm) Length	Width	Height	Weight kg
R190ne	7.5	110	205	275	37.6	1,327	4,000	1,930	2,146	5,933
	8.5	125	192	257	33.1	1,170	4,000	1,930	2,146	5,933
	10.0	145	205	275	32.3	1,141	4,000	1,930	2,146	5,933
R225ne	7.5	110	246	330	44.7	1,580	4,000	1,930	2,146	5,933
	8.5	125	246	330	41.8	1,476	4,000	1,930	2,146	5,933
	10.0	145	246	330	40.4	1,425	4,000	1,930	2,146	5,933

Ingersoll Rand Ultra Care

Helping you maintain a healthy business

Ultra Care five year maintenance and performance agreements have been designed to be easy to understand with absolutely no surprises. Find out more about protecting the heart of your business contact your local distributor or Ingersoll Rand Sales office.

Ingersoll Rand looks after your compressed air system, so you can look after your business.

Progress is greener with Ingersoll Rand

Ingersoll Rand offers industry leading products and solutions that enable businesses around the world to reduce energy consumption and costs and decrease harmful environmental emissions. From air compressors that reduce energy consumption to electric-powered golf cars with near-zero emissions, Ingersoll Rand provides the knowledge, experience and solutions to help our clients achieve their sustainability goals.

Ingersoll Rand
Industrial Technologies

Ingersoll Rand Industrial Technologies provides products, services and solutions that enhance our customers' energy efficiency, productivity and operations. Our diverse and innovative products range from complete compressed air systems, tools and pumps to material and fluid handling systems and environmentally friendly microturbines. We also enhance productivity through solutions created by Club Car®, the global leader in golf and utility vehicles for businesses and individuals.

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