



# Contact-Cooled Rotary Screw Air Compressors

Nirvana 190-225 kW (250-300 hp)

*Reliability*

*Efficiency*

*Productivity*



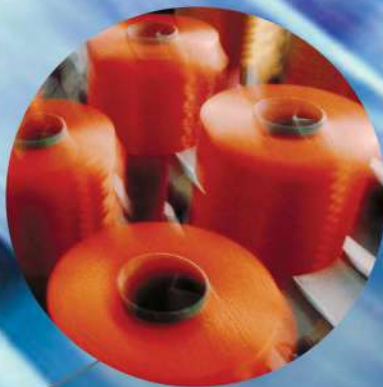
# More Than Air, Peace

Ingersoll Rand is well into its second century of building our legacy as a **trusted** global leader by delivering the **innovative** solutions and **expertise** our customers require. We continue to advance compressed air technology and service to maximize reliability, efficiency and productivity for our customers.

We not only provide world-class products and support, but the peace of mind that comes from our commitment to stand behind our customers in all aspects of what we do. That peace of mind allows our customers to focus on their primary objective: moving their businesses forward.



# of Mind



# A New Level of Reliability, Efficiency and

Nirvana 190-225kW (250-300hp) rotary screw 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 Aired

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.

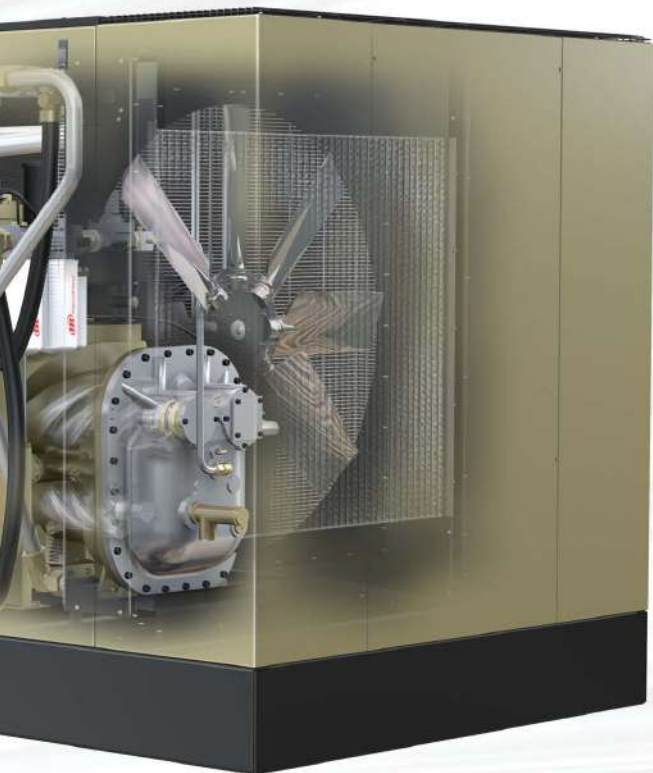
## Variable Speed Cooling

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.

### **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%, minimizing 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, while allowing unlimited starts per hour with no motor life decrease and plenty of energy savings.

### **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.

# 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 screw 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 Speed Drive (VSD) uses a standard inverter well recognized 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 VSD 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 atomized oil into the compressed air stream leaving the first stage. This lowers the energy required for second-stage compression while 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.



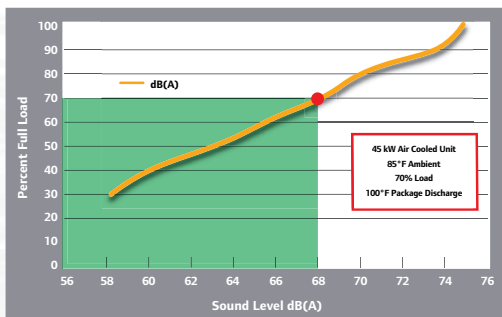
Maintenance-free, bearingless motor design with fewer rotating parts — no pulleys, belts or couplings to wear out

### 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 VSD on the Nirvana coolant circuit eliminates the life-shortening build-up of moisture in the coolant at partial loads common with other VSD 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.



# Total Air Solution Expertise

Operating a group of compressors as a single efficient system requires the kind of control and balance only Ingersoll Rand can deliver. Our advanced system controllers and audit services enable you to optimize efficiency, extend the life of system components and reduce energy costs.

## Cut Operating Costs with Your Existing Equipment!

Ingersoll Rand X-Series System Automation eliminates waste by managing up to 12 positive displacement compressors simultaneously...regardless of capacity, type (fixed speed, variable speed, variable capacity), combination or configuration.

Through advanced control functionality and universal connectivity, our X-Series System Automation products work with any compressors, from Ingersoll Rand or any manufacturer, to improve operating efficiency and reduce energy costs.

## Intelliflow Air System Pressure Controller

Intelliflow provides precise air pressure control of production processes by separating supply-side air from demand-side air so that supply-side air is not affected by events on the demand side. Intelliflow can lower demand pressure precisely — reducing energy costs and better ensuring consistent product quality.





## Nirvana Premium 50 Hz & 60 Hz Performance

Model	Rated Pressure		Nominal Power		Capacity		Weight (Air-cooled)	
	bar g	psig	kW	hp	m <sup>3</sup> /min	cfm	kg	lb
R190ne	7.0	100	190	250	39.1	1,380	5,933	13,080
	8.5	125	190	250	33.1	1,170	5,933	13,080
	10	145	190	250	32.3	1,141	5,933	13,080
R225ne	7.0	100	225	300	46.0	1,625	5,933	13,080
	8.5	125	225	300	41.8	1,476	5,933	13,080
	10	145	225	300	40.4	1,425	5,933	13,080




### Dimensions (LxWxH)


mm in

3,998x1,929x2,132 157.5x76.0x84.0



## A Configuration for Every Need

Category	Description	Variable Speed
<b>Airend</b>	Premium two-stage airend with duplex tapered roller bearings	<b>Standard</b> ◀
<b>Controller</b> 	Energy-saving microprocessor controller	<b>Standard</b> ◀
	On-board diagnostics and shutdown protection	<b>Standard</b> ◀
	Easy-to-use operator interface in 23 languages	<b>Standard</b> ◀
	Programmable start/stop operation	<b>Standard</b> ◀
	Selectable units of measurement display	<b>Standard</b> ◀
	Remote connectivity to building management system	<b>Standard</b> ◀
	Built-in energy savings calculator	<b>Standard</b> ◀
<b>Cooling System</b> 	Air-cooled end-to-end cooling system optimized for efficiency & serviceability	<b>Standard</b> ◀
	Energy-efficient, low noise cooling system	<b>Standard</b> ◀
	High-efficiency package cooling system rated for 46°C (115°F)	<b>Standard</b> ◀
<b>Leak Prevention</b>	Leak-free prevention connections with SAE O-ring fittings	<b>Standard</b> ◀
<b>Services</b>	Fluid containment system	<b>Standard</b> ◀
	Simple ducting	<b>Standard</b> ◀
	12-month full package warranty	<b>Standard</b> ◀
<b>Auxiliary Systems</b>	Noise-reduction enclosure	<b>Standard</b> ◀
	Electronic no-loss condensate drains	<b>Standard</b> ◀
	Long-life air and separator filters (4,000 hrs)	<b>Standard</b> ◀
	8,000-hour life Ultra Coolant™	<b>Standard</b> ◀
<b>Motors &amp; Electrical Systems</b>	Hybrid Permanent Magnet® (HPM®) motor	<b>Standard</b> ◀
	Control panel protection NEMA 12/IP54	<b>Standard</b> ◀
	Variable speed drive on main motor and blower motor	<b>Standard</b> ◀
<b>Weather Protection</b>	Water cooling	Optional
<b>Environmental</b> 	Energy recovery system	Optional
	X-tend food grade coolant	Optional
	X-tend filtration system	Optional
<b>Power Protection</b>	Power Outage Restart Option (PORO)	Optional
	Phase monitor	Optional
<b>General Options</b>	Comprehensive service and coverage plan	Optional

 Sustainable Technology

Contact your Ingersoll Rand representative for more information.

# Ingersoll Rand...At Your Service

**No matter where your facility is located,** Ingersoll Rand is committed to serving you 24 hours a day, seven days a week. Available to support you with innovative and cost-effective service solutions that will keep you running at peak performance.

## Count on Ingersoll Rand for All Your Air System Requirements



### Air Quality

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



### Environmental

- Condensate management
- Lubricants
- Water filtration



### Installation

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



### Maintenance

- Hard parts
- Consumables
- Service contracts



### Power Management

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



### Energy Efficiency

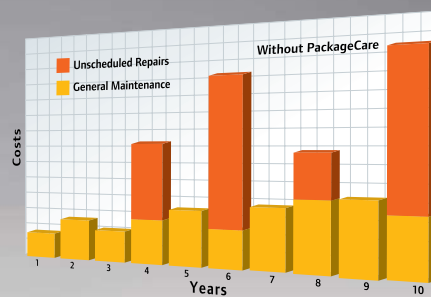
- System air pressure controllers
- Automated air system controls
- No-loss drains
- System audits



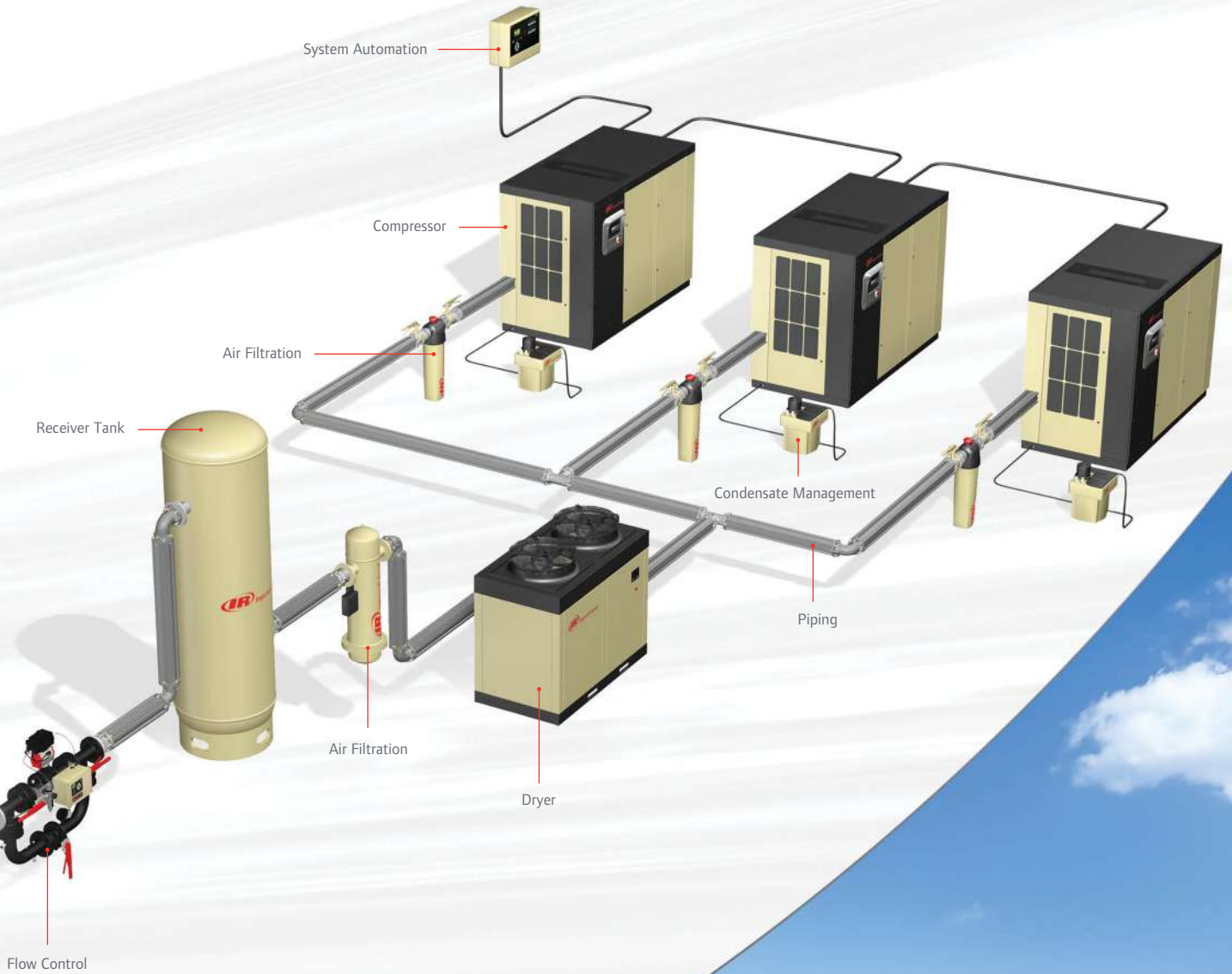
Or let Ingersoll Rand handle the pressures of owning a compressed air system with our signature service contract.

With PackageCare, you can...

- Control costs and keep your equipment running at peak efficiency
- Protect yourself from all repair and replacement expenses over the life of the agreement
- Maintain or improve the operational efficiency of any compressor, regardless of age, make or model
- Ensure long-term value and satisfaction from your system



From compressors to system automation and everything in between, Ingersoll Rand is your total solution provider.



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 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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