



# Contact-Cooled Rotary Screw Air Compressors

R-Series 37-160 kW (50-200 hp)



# A Tradition of Proven Reliability, Efficiency and Productivity



## Over 100 Years of Compressed Air Innovation

Ingersoll Rand introduced its first air compressor in 1872. Over the next 140 years, we have continued to develop rugged, reliable, industry-leading rotary screw compressor technologies.

Today, we're experts in compressed air because our technological advances meet the specific performance needs in our customers' industries. No matter what the application, Ingersoll Rand rotary screw technology provides compressed air in all operating conditions to reduce costly downtime, product liability and damage to your reputation.

## RELIABILITY

### Superior Design, Superior Life

- Optimised cooler performance reduces thermal stress, energy consumption and downstream dryer requirements
- Leak-free elastomeric seals, stainless steel pipes and long-life metal-flex hoses provide reliable and repeatable internal connections
- Intelligent controls that both monitor and adapt key operating parameters to prevent unexpected downtime

**Lowers cost of ownership**

## PRODUCTIVITY

### User-Friendly Operation and Accessibility

- Intuitive high-resolution controller with web-enabled remote access, compressor control and on-screen performance analysis
- Advanced integrated dryer option reduces footprint and installation complexity
- Removable hinged doors, swing out separator lid and easy-slide heat exchangers make maintenance easy and safe

**Maximizes uptime**

## EFFICIENCY

### Optimised Components and Systems

- High performance single- and two-stage airends
- Class-leading induction and high-efficiency Hybrid Permanent Magnet (HPM) motors
- Available Energy Recovery System (ERS) maximises return on investment

**Reduces energy use and operating costs**



R45i

# Rotary Screw Compressors in a Class by Themselves



## Total Air System (TAS) option provides clean, dry air in an integrated package

- Standard high-efficiency coalescing filter and integrated refrigerated dryer deliver ISO 1-4-2 quality air up to 38°C (100°F)
- Patented 3-in-1 heat exchanger provides increased reliability and efficiency with a lower pressure drop
- Minimises installation costs and provides single-point maintenance and monitoring



R75n



## Xe-Series Controller - features a high-resolution color display and intuitive operation for easy compressor control

- Web-enabled for remote compressor control and email notification of alarms
- Sequence up to four R-Series compressors without additional hardware or software
- Optimises system performance with built-in performance analysis and trending
- Customizable to operate in 30 different languages



## Precision Airends - market leading reliability and efficiency

- Precision machined rotors with duplex-tapered roller bearings
- Two-stage airends available on 90-160 kW for trouble-free operation and low energy consumption

# Turning Advanced Engineering into Proven Advantages



**Progressive Adaptive Control (PAC) Protection** - An integrated, intelligent system that continuously monitors key operating parameters and adapts to prevent unexpected downtime

- Scans and adjusts operating parameters in response to changes in filter condition
- Real-time electronic maintenance indicators
- Increases bearing life by eliminating water build-up in the coolant
- Optimises energy consumption and reduces noise by adjusting blower speed (on Nirvana variable speed drive [VSD] compressors)



**V-Shield** - A totally integrated, leak-free design using stainless steel pipes and long-life metal-flex hoses

- Superior elastomeric seals for repeatable leak-free connections
- Vibration isolation system and metal-flex hoses extend compressor life and reduce noise
- Reduces downstream contamination with stainless steel air piping



**Sequential Cooling** - Improves efficiency, serviceability and noise level

- Standard electronic no-loss drain valves improve efficiency
- Independently-mounted, free-floating air and coolant heat exchangers reduce thermal stress and are easier to clean
- Lowers discharge temperatures, significantly reducing the energy required to remove condensate in downstream air treatment

Ingersoll Rand R-Series compressors include many advanced features that significantly lower lifecycle costs.

Savings Type	1 Year €	3 Years €
PAC Protection – reduced cooling fan speed at low ambient temperatures	310	930
PAC Protection – filter monitoring	420	1,260
V-Shield – eliminates need to change flex hoses	400	1,200
Sequential cooling – less time cleaning coolers	110	330
<b>Total</b>	<b>1,240</b>	<b>3,720</b>

Calculations estimated using 6,000 hr/yr, €0.1/kWh for R75n in a typical operation.

# Innovative Design, Flexible Choices



R75n

Ingersoll Rand rotary screw compressors provide superior operating features, benefits and equipment choices. Mix and match variable and fixed speed motors with single-stage or two-stage airends to achieve the exact level of performance and economy your operation and your budget require.

## Deliver up to 15% more air with a two-stage airend\*

than a single-stage compressor, while consuming the same amount of energy!



\*on 90-160 kW ie and ne models

## **i** Efficiency for Constant Demand

### Fixed Speed Compressors

Ingersoll Rand R-Series fixed speed compressors feature the reliable and efficient IE3 TEFC motor for constant demand processes.

## **n** Efficiency for Variable Demand

### Nirvana Variable Speed Drive (VSD) Compressors

Ingersoll Rand VSD compressors maximise the full potential of variable speed technology. Only Nirvana VSD uses the Hybrid Permanent Magnet (HPM) motor, the highest efficiency motor available.

## **ie** Premium Efficiency for Constant Demand

### Premium Fixed Speed Compressors

Ingersoll Rand R-Series Premium Efficiency fixed speed compressors feature the continuous duty, high-performance IE3 TEFC induction motor and deliver improved performance, better efficiency and enhanced features.

## **ne** Premium Efficiency for Variable Demand

### Premium Nirvana VSD Compressors

Ingersoll Rand R-Series Premium Efficiency variable speed compressors deliver not only the full potential of variable speed technology with a Hybrid Permanent Magnet (HPM) motor, but also improved performance, better efficiency and enhanced features.

Standard Features		Fixed Speed		Nirvana VSD	
Category	Description	<i>i</i>	<i>ie</i>	<i>n</i>	<i>ne</i>
<b>Airend</b>	Premium two-stage airend (90-160 kW only)		●		●
	Time-proven single-stage airend (45-160 kW)	●		●	
	Time-proven single-stage airend (37 kW)		●		●
<b>PAC Protection</b>	Scans and adjusts operating parameters in response to filtration changes	●	●	●	●
	Real-time electronic maintenance indicators and shutdown protection	●	●	●	●
	Blower speed adaptable to ambient temperature			●	●
	Automatic coolant temperature control to eliminate moisture build-up	●	●	●	●
	Integrated line reactor in compliance with industrial EMC standards			●	●
<b>Cooling System</b>	Air-cooled sequential cooling system	●	●	●	●
	Energy-efficient and low noise centrifugal blower	●	●	●	●
	Generous package cooling system rated for 46°C (115°F) ambient	●	●	●	●
	Moisture separator	●	●	●	●
	Electronic no-loss condensate drains (37-45 kW)	○	○	○	○
	Electronic no-loss condensate drains (55 kW and above)	○	●	○	○
<b>V-Shield Technology</b>	Stainless steel air piping (aftercooler to moisture separator)	●	●	●	●
	Vibration isolation pads and premium metal-flex hoses	●	●	●	●
	Repeatable leak-free connections with superior elastomeric seals	●	●	●	●
<b>Services</b>	Ergonomic swing-out lid on separator tank (55 kW and above)	●	●	●	●
	Simple ducting (single air inlet and single air outlet)	●	●	●	●
	12-month full package warranty	●	●	●	●
<b>Auxiliary Systems</b>	Noise attenuation enclosure	●	●	●	●
	Package pre-filtration	●	●	●	●
	Long life filtration and separation elements	●	●	●	●
	Extended-life Ingersoll Rand premium grade coolant	●	●	●	●
	Flow control by variable speed technology			●	●
	Flow control by full load/no load regulation system	●	●		
<b>Motors &amp; Electrical Systems</b>	Control panel protection, NEMA 4/IP65 electrics	●	●		
	Star-delta reduced voltage starter	●	●		
	Premium Efficiency IE3 TEFC IP55 motors - Class F insulation with B rise	●	●		
	Hybrid Permanent Magnet (HPM) motor - EMC-compliant			●	●
	Control panel protection, NEMA 12/IP54			●	●
Variable speed drive on main motor & centrifugal blower motor			●	●	
<b>Optional Features</b>					
<b>Total Air System (TAS)</b>	Integrated dryer delivering ISO Class 1-4-2 quality air (37-75 kW)	○	○	○	○
<b>Weather Protection</b> (Some options not available on TAS models)	Outdoor modification/rain protection	○	○		
	Frost protection to -10°C (14°F)	○	○		
	High ambient protection up to 55°C (131°F)	○	○		
	Premium high dust filtration (inlet and package pre-filters)	○	○		
<b>Cooling Options</b>	Water cooling with electronic water shut-off valve	○	○	○	○
	Sea water/harsh water cooling with electronic water shut-off valve (55-160 kW)	○	○	○	○
<b>Environmental</b>	Energy Recovery System (ERS)	○	○	○	○
	Fluid containment system	○	○	○	○
	Food grade coolant and X-tend filtration system	○	○	○	○
<b>Electrical System &amp; Power Protection</b>	Power Outage Restart Option (PORO)	○	○	○	○
	Safety switch disconnects	○	○	○	○
	Phase monitor (protection)	○	○		
	Electronic, solid-state reduced voltage starter	○	○		
<b>General Options</b>	Inlet modulation flow control	○	○		
	Comprehensive service and coverage plan	○	○	○	○
<b>Xe-Series Controllers</b>		Xe-90M (standard)		Xe-145M (optional)	
<b>Description</b>		<b>Fixed Speed</b> <i>i</i> or <i>ie</i>	<b>Nirvana VSD</b> <i>n</i> or <i>ne</i>	<b>Fixed Speed</b> <i>i</i> or <i>ie</i>	<b>Nirvana VSD</b> <i>n</i> or <i>ne</i>
Built-in energy savings calculator			●		●
On controller graphing and trending				●	●
Standard web pages		●	●	●	●
Remote control via web pages		●	●	●	●
Automated reporting				●	●
Web-based graphing and trending				●	●
Email notification of warnings and trips		●	●	●	●
Built-in sequencer for up to 4 units		●	●	●	●
Direct communications with Xi system controls		●	●	●	●

● Standard Feature    ○ Optional Feature    "Blank" Not Available



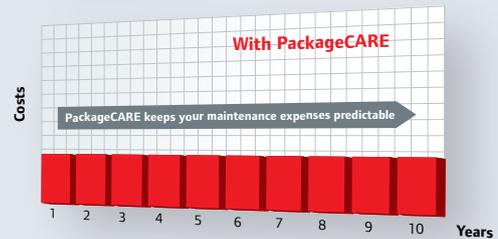
**PackageCARE**

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.

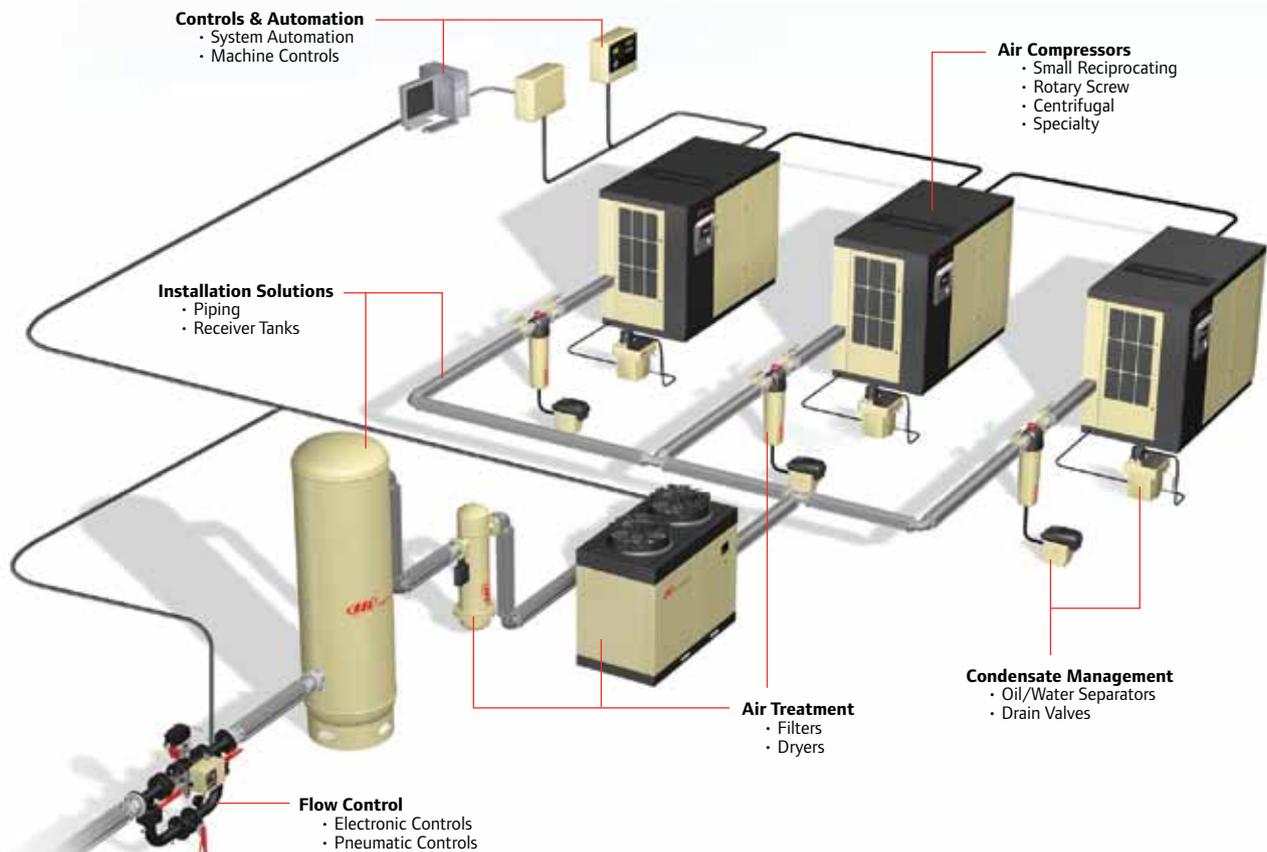
Let Ingersoll Rand handle the pressures and responsibilities of owning a compressed air system with our signature service contract.

**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



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





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