

Contact Cooled Rotary Screw Air Compressors

M-Series 90-160/M90-160VSD



Ingersoll Rand M-Series Contact Cooled Rotary Air Compressors

Superior Design

Higher Reliability

Better Efficiency and Productivity



Ingersoll Rand M-series 90-160kW rotary screw air compressors proved its superior quality over the past decades. And now, engineers inspired new designs to the compressor. Along with its time-proven reliability, efficiency and high productivity, the new designed compressor provides better customer experience than ever before.

Ingersoll Rand Compressed Air

More than air · peace of mind

Ingersoll Rand is well into its second century of building our legacy as a trusted global leader by delivering the innovative solutions and expertise to our customers to keep their business moving forward. We devoted ourselves as the very trusted business partnership to our valuable customers. Only keep innovating our air solutions and improve service quality, our customers could rely on reliable, efficient and productive air compressing systems.

We offer more than just top class products and premium supports around the world, we are committed to deliver safety, peace of mind to customers, these commitments motivate us moving forward. All you need to do is to focus on business, everything else you can leave it to Ingersoll Rand to help you accomplish.

Reliability

Dependable solutions that stay up and running for the long run

Efficiency

Sustainable solutions that work to get more done with less investment

Productivity

Convenient solutions that are easy to install, operate and maintain. Minimized total cost of ownership

The Decision is Yours

Our innovative designed screw compressors deliver the combination of performance and value that best fits your specific needs. At Ingersoll Rand, It's all about value ...and choice.

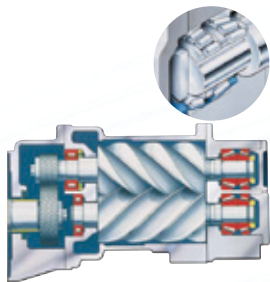


Ingersoll Rand M-Series Contact Cooled Rotary Air Compressors

Advanced Airend Design

At the core of the M-Series is our rugged and reliable airend. Used in thousands of compressors worldwide, our airend is known for trouble-free operation and minimal maintenance.

Our airends utilize only the highest quality duplex tapered roller bearings. Roller bearings provide line contact for thrust loads, and dramatically improve the life of the airend. The M-Series airend also incorporates a bearing coolant dam that traps coolant in the bearing during shutdown. This ensures proper bearing lubrication during the critical start-up phase, and longer bearing life.



M-Series: Unparalleled Reliability

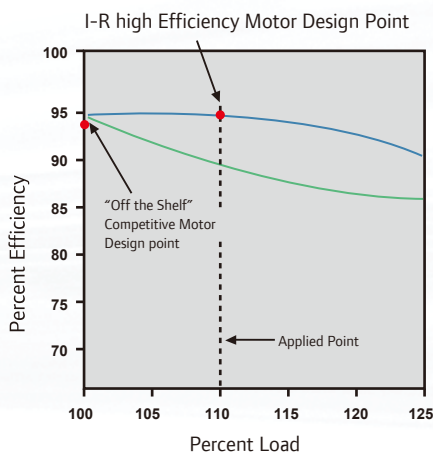
Our time-proven integral gear drive is the only maintenance-free drive system in the industry. The airend and motor are permanently aligned, so during the course of normal operation no adjustments are ever required.

The drive train is totally enclosed so that no dust or dirt can penetrate, and our triple-lip shaft seal prevent leakage of coolant to the motor.



Energy Efficient Motor

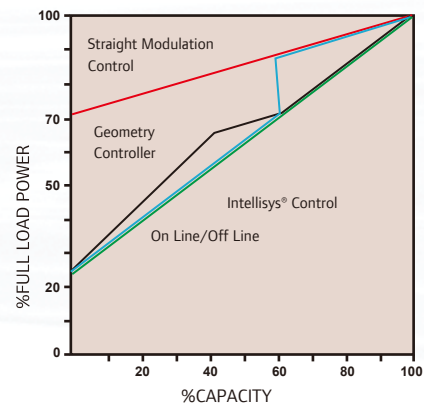
Every M-Series compressor incorporates a durable high efficiency motor. M-Series motors operate at peak efficiency under full load conditions, ensuring maximum energy savings.



Air Inlet Valve Control

We equip each compressor with not one, but three separate control modes: On-line/Off-line, Upper Range Modulation, and Auto Control Select. Simply set the Intellisys controller to the desired control method, and the microprocessor does the rest.

For the best overall efficiency, choose IR's patented Auto Control Select (ACS) system. ACS constantly monitors the compressor's operation and automatically adjusts the control system to the mode that best suits your system's needs: On-line/Off-line or Upper Range Modulation.



Air Separation

- Specially designed internal structure with overwhelming separation performance
- Effective oil separation guarantees better compressed air quality
- Lower pressure drop can save more energy



End-to-End Cooling

The aftercooler is located at the inlet end of the package. This allows cool compressed air as low as 15°F/8°C above the ambient temperature to pass downstream to the air system.

Moisture Separation

- Standard moisture separation
- Superior air quality
- Reduce the load of air treatment and save energy



Intelligent KT Controller*

- 6 Parameter Standard Display
- 9 Adjustable operating Parameters
- 15 Fault Warning & Shutdowns
- MODBUS RTU 485 interface

*60hz use Xe controller



Premium Lubricant Solution - Ultra EL

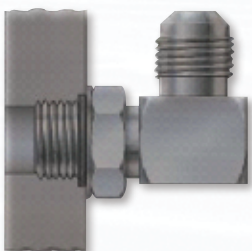
Designed for high-demand, multi-shift operations, Ultra EL gives you long-lasting, varnish-free protection.

- 16,000 hours/3 years lubricant run time
- Advanced cooling
- Decreases wear significantly
- More Robust Corrosion Inhibition
- Significantly improved separation qualities



Inherent Leak-Free Design

By using SAE O-ring fittings on all connections 1/4" and larger, we've significantly reduced potential leakage problems associated with conventional threaded connections.



The M-Series Package

To fit the need of your compressed air system, we offer you the choice of an air-cooled or water-cooled design.

Factory-Tested

IR tests each and every compressor to ensure you receive the highest reliability and lowest operating cost available.

Standard Features	Description	Package
Airend	Time-proven single-stage airend	•
Motors & Electrical Systems	IP55 TEFC Motor, Class F insulation with Class B temp. rise Heat resistant design for 46°C (115 °F) ambient Control panel protection, IP55 Star-delta starter	• • • •
Cooling System	Energy-efficient cooler and cooling fan, CTD Up to 8°C	•
Microcomputer Controller	Remote Control Modbus RTU communication protocol RS 485 communication port System operation status alert	• • • •
Superior Air Quality	Optimized air inlet filtration, higher efficiency, easy access to maintenance Moisture separator 3-stage air and oil separation, oil carry over less than 2PPM	• • •
Service	Simple air piping design Anti-abrasion and anticorrosion O-ring sealing Removable door panel 12-months full package warranty	• • • •
Auxiliary Systems	Sound enclosure Package pre-filtration Long life filtration and separation elements Long life Ingersoll Rand premium grade coolant On/Off Modulation & ACS control	• • • • • •
Optional Features	Description	Package
Weather Protection	Outdoor modification/rain protection Antifreeze protection to -10°C (14 °F) High Ambient Protection up to 50°C (122 °F) Premium high dust filtration Motor Space heater	○ ○ ○ ○ ○
Environment Friendly	Food grade coolant and filtration system	○
General Options	Motor phase monitor 304 stainless steel nameplates Power Outage Restart Option (PORO)	○ ○ ○

● Standard ○ Optional

Ingersoll Rand M-series 50Hz Performance

Model	Full Load Pressure		Nominal Power		Capacity (FAD)*		Dimensions mm (L*W*H)	Weight Kg
	barg	psig	kW	hp	m ³ /min	cfm		
ML90	7.5	110	90	125	17.1	604	3124*1587*1905	2617
MM90	8.5	125	90	125	15.3	540	3124*1587*1905	2617
MH90	10	145	90	125	14.0	495	3124*1587*1905	2617
ML110	7.5	110	110	150	20.0	706	3124*1587*1905	2640
MM110	8.5	125	110	150	19.2	678	3124*1587*1905	2640
MH110	10	145	110	150	17.5	618	3124*1587*1905	2640
ML132	7.5	110	132	175	23.5	830	3124*1587*1905	2731
MM132	8.5	125	132	175	22.3	788	3124*1587*1905	2731
MH132	10	145	132	175	21.0	742	3124*1587*1905	2731
ML160	7.5	110	160	200	28.0	989	3124*1587*1905	2731
MM160	8.5	125	160	200	26.0	918	3124*1587*1905	2731
MH160	10	145	160	200	25.0	883	3124*1587*1905	2731

Ingersoll Rand M-series 60hz performance

Model	Full Load Pressure		Nominal Power		Capacity (FAD)*		Dimensions mm (L*W*H)	Weight Kg
	psig		hp		m ³ /min	cfm		
XF125	100		125		18.3	647	3124*1587*1905	2617
EP125	125		125		15.9	563	3124*1587*1905	2617
HP125	140		125		14.5	511	3124*1587*1905	2617
XF150	100		150		22.2	783	3124*1587*1905	2640
EP150	125		150		19.5	690	3124*1587*1905	2640
HP150	140		150		17.5	618	3124*1587*1905	2640
XP150	165		150		15.3	540	3124*1587*1905	2640
XF200	100		200		28.4	1004	3124*1587*1905	2731
EP200	125		200		24.8	875	3124*1587*1905	2731
HP200	140		200		23.7	837	3124*1587*1905	2731
XP200	165		200		20.5	723	3124*1587*1905	2731

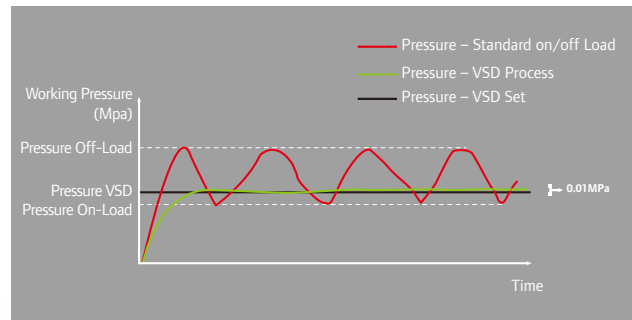
*Free Air Delivery (FAD) is full package performance including all losses. Tested per ISO 1217:1996 Annex and CAGI/PNUEROP PN2CPTC2

M90-160VSD Frequency Energy-Saving Series

Besides adhering the premium quality of Ingersoll Rand M-series Model, M90-160 VSD series also provide up-to-date leading technology, which create new values to customers constantly.

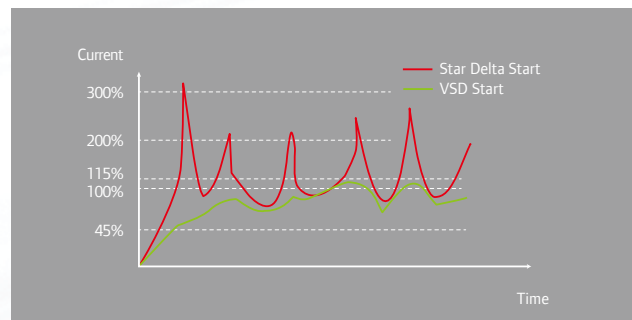
Constant Working Pressure

- With VSD control Air Compressor is able to response to demand pressure variation immediately.



Avoiding Electricity Surges

- Electricity surges can be avoided via soft starting by gradual motor ramp-up.
- With the help of VSD controller, starting current of compressor can be limited within 1.2 times of the rated current.
- Rush current which is hazardous to both power grid and electrical components will be eliminated.



The Voltage Adaptability of Power Supply is better

- The VSD inverter enables the constant torque output of motor which can deliver enough torque when the voltage declined. When the voltage is over high, VSD inverter will help to stabilize the output voltage to motor too.

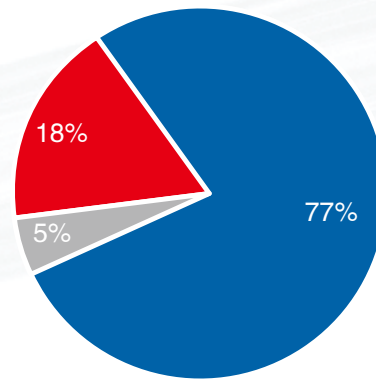
Inherent VSD Inverter Integrated Control

- Adopting frequency convertible electric motor, protection class IP55.
- "One Stop" control can be achieved via Ingersoll Rand's integrated VSD controller. Both working pressures and turn down ranges can be set from controller directly.

VSD Saves Money

Fix speed compressor works between full-load state and no-load state which are set from controller. When maximum pressure point is reached the compressor goes off load. The no load power consumption is a waste of energy. Power consumption takes up to 77% of overall expenses during compressor's life time, reduction of no load period will improving the efficiency of air compressor and save cost on power consumption. VSD technique can adjust the air supply changes following real air demand accurately which enables the compressor power consumption to the minimum and avoids energy loss during unloading.

- Eliminating the inefficient no load period can save the energy consumption.
- Ingersoll Rand VSD maintains the pressure band more accurate in compare with on-load / off-load control which is able to reduce the energy consumption dramatically.



- Equipment Investment
- Maintenance Cost
- Power Cost

Model	Full Load Pressure		Minimum Pressure		Capacity (FAD)*		Nominal Power	Dimensions	Weight
	barg	psig	barg	psig	m ³ /min	cfm	kW	mm(L*W*H)	Kg
M90VSD	7.0	102	4.5	65	5.5-17.1	194-604	90	3124*1587*1905	2617
M90VSD	8.0	116	4.5	65	5.7-15.6	201-551	90	3124*1587*1905	2617
M90VSD	10.0	145	4.5	65	5.6-14.0	198-494	90	3124*1587*1905	2617
M110VSD	7.0	102	4.5	65	7.1-20.5	251-724	110	3124*1587*1905	2640
M110VSD	8.0	116	4.5	65	7.13-19.6	252-692	110	3124*1587*1905	2640
M110VSD	10.0	145	4.5	65	7.0-17.5	247-618	110	3124*1587*1905	2640
M132VSD	7.0	102	4.5	65	8.3-24.1	293-851	132	3124*1587*1905	2731
M132VSD	8.0	116	4.5	65	8.29-22.8	293-805	132	3124*1587*1905	2731
M132VSD	10.0	145	4.5	65	8.4-21.0	297-742	132	3124*1587*1905	2731
M160VSD	7.0	102	4.5	65	10.1-29.2	357-1031	160	3124*1587*1905	2731
M160VSD	8.0	116	4.5	65	9.9-27.6	350-975	160	3124*1587*1905	2731
M160VSD	10.0	145	4.5	65	10.0-25.0	353-883	160	3124*1587*1905	2731

*FAD (Volume Flow) is measured by the test standard of ISO 1217:1996 Annex C

Standard Features	Description	Package
Airend	Time-proven GHH single-stage compression airend	●
Motors & Electrical Systems	IP55 TEFC motors, Class IE2 energy efficiency, Class F insulation with B temperature rise High ambient protection up to 46°C Control panel protection IP55	● ● ●
Cooling System	Energy-efficient cooler and cooling fan, exhaust gas temperature CTD 8°C (Air-cooled Unit)	●
Microcomputer Controller	Chinese & English Optional Remote Control Modbus RTU communication protocol RS 485 communication port Operation status alert	● ● ● ● ●
Superior Air Quality	Optimized air inlet filtration, higher efficiency, easy access to maintenance Moisture separator 3-stage air separation and oil carry over less than 2PPM	● ● ●
Service	Simple air piping design Anti-abrasion and anticorrosion O-ring sealing Removable door panel 12-month full package warranty	● ● ● ●
Auxiliary Systems	Noise attenuation enclosure Package intake pre-filtration Long-life filtration and separation elements Long life Ingersoll Rand premium grade coolant	● ● ● ●
Optional Features	Description	Package
Weather Protection	Outdoor/rain protection -10°C Frost protection 50°C High ambient protection High dust filter Motor space heater	○ ○ ○ ○ ○
Food grade coolant	Food grade coolant and Ultra FG filtration system	○
Other	Phase monitor 304 Stainless steel nameplate Power Outage Restart Option (PORO)	○ ○ ○

● Standard ○ Optional

Ingersoll Rand...At Your Service

Maintaining a healthy compressed air system is extremely important in order to optimise your productivity and profitability. Consistent neglect of an air system can lead to unnecessary breakdowns and loss of production. An air system is like any other system - lack of care will result in unhealth condition.

Ingersoll Rand leads the way with innovative compressed air equipment and design solutions. Innovation does not stop at the design of our products. We extend this through our range of services.

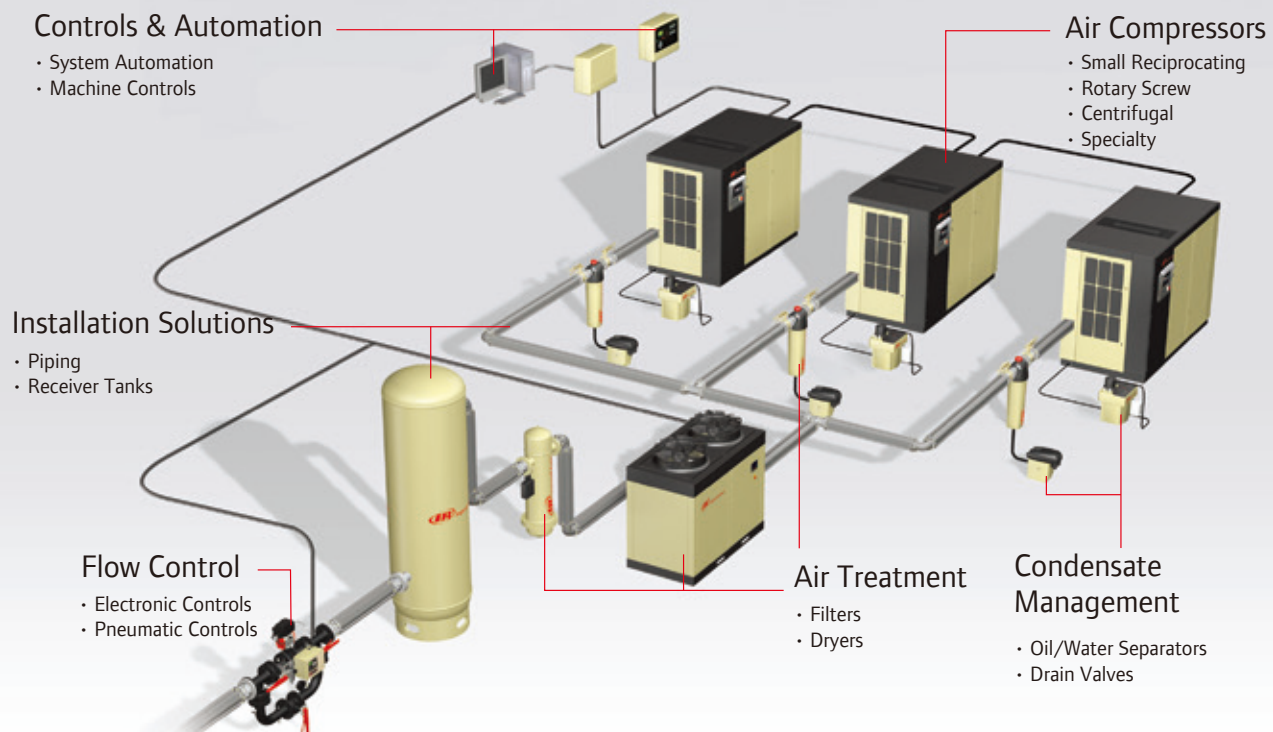
On Site Asset Management

- Compressor Service
- Air Treatment Service
- Preventative Maintenance
- Tools, Fluid and Material Handling, Servicing & Overhauls
- Auditing Services
- Remanufacturing Technology Centre
- Installation Work
- Low Pressure Blower Services

Ingersoll Rand Value Proposition

- Optimise Reliability and Productivity
- Improved Productivity and Reduced Downtime
- Diagnosis, Managing Risk
- Improve the Quality of your Production and Profitability
- Reduced Running Costs and Smaller Operating Carbon Foot Print
- Return to Original Specifications
- Healthy and Efficient System
- Maximize Production Uptime

Count on Ingersoll Rand for All Your Air System Requirements





Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands — including Club Car®, Ingersoll Rand®, Thermo King® and Trane® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a \$13 billion global business committed to a world of sustainable progress and enduring results.



www.ingersollrandproducts.com