



# MSG<sup>®</sup> TURBO-AIR<sup>®</sup> COOLED 2000 Centrifugal Compressor

**Air-Cooled, 100% oil-free air\***

*\*Per ISO 8573-1 certification*



## Reliable Centrifugal Compressor – now available air cooled.

The MSG® TURBO-AIR® COOLED 2000 centrifugal compressor is designed for applications where there is a limited supply or no water available for cooling.

The MSG TURBO-AIR COOLED compressor makes it possible for more industries around the world to enjoy all the advantages of our state-of-the-art centrifugal compressor design.

### ISO 8573-1 CERTIFIED OIL-FREE AIR

- Prevents oil contamination of your system
- Limits the potential for compressed air pipeline fires caused by oil carryover
- Eliminates costly waste disposal problems associated with oil-laden condensate
- Eliminates the expense associated with maintenance requirements of oil removal filters, since no oil enters the compressed air stream in the compressor

### HIGH RELIABILITY

- Thrust loads absorbed at low speed
- Non-contacting air and oil seals
- Stainless steel compression elements
- Conservative, high-quality gear design
- Extended life pinion bearing design
- Centrifugal compressors are proven to have a long mean time between failures (MTBF), and independent research has shown an industry-leading availability of 99.7%

### LOW-COST OPERATION

- True unloading capability helps to take advantage of opportunities for energy savings
- Increased uptime compared to alternative technologies translates into reduced operating life-cycle costs
- Excellent part-load efficiencies for any operating load
- No sliding or rubbing parts in the compression process causing wear or efficiency loss

### EASY OPERATION

- The MAESTRO™ Universal control panel provides a built-in web server, allowing compressor monitoring using your local intranet
- Significant annual savings in operating costs by providing more precise control
- Easy-to-use, automatic operation

### EASY MAINTENANCE

- Compression elements do not wear or require periodic replacement
- No oil removal filters to clean or replace
- Accessible, horizontally split gear box for quick inspection
- Easy-to-clean, air-cooled cooler core

### SIMPLE INSTALLATION

- Complete package including aftercooler, controls, motor, lubrication system and inlet filter
- Minimum number of external connections
- Compact design requires minimum floor space
- Package starter options available in full-voltage, wye-delta or solid-state configurations
- Packaged discharge check valve option available to eliminate costly field installation



## Control Systems

Ingersoll Rand can provide the right control system engineered for your applications.

### MAESTRO SUITE OF CONTROLS

MAESTRO control systems offer optimal protection and control for your compressed air system. The MAESTRO suite contains a model that is sure to be in tune with your needs.



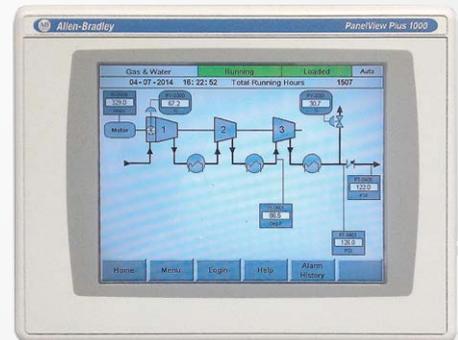
### MAESTRO UNIVERSAL

- Windows CE driven system includes a built-in web server and set up wizard for quick configuration
- Able to handle multiple stages and designed for many makes and models of compressors
- 10" color graphic display provides easy monitoring
- Built-in USB port for system configuration and data logging
- Capable of monitoring and controlling the total system across multiple units



### MAESTRO PLC

- Utilizes an Allen-Bradley CompactLogix platform with: 16 digital inputs, 16 digital outputs, 16 analog inputs, 4 analog outputs, and 12 RTD inputs
- Comes standard with an Allen-Bradley PanelView Plus 1000 10" touchscreen
- Networking software available for automation of multiple units and total system automation
- Optional stainless steel enclosure available



## ISO CERTIFIED CLASS ZERO

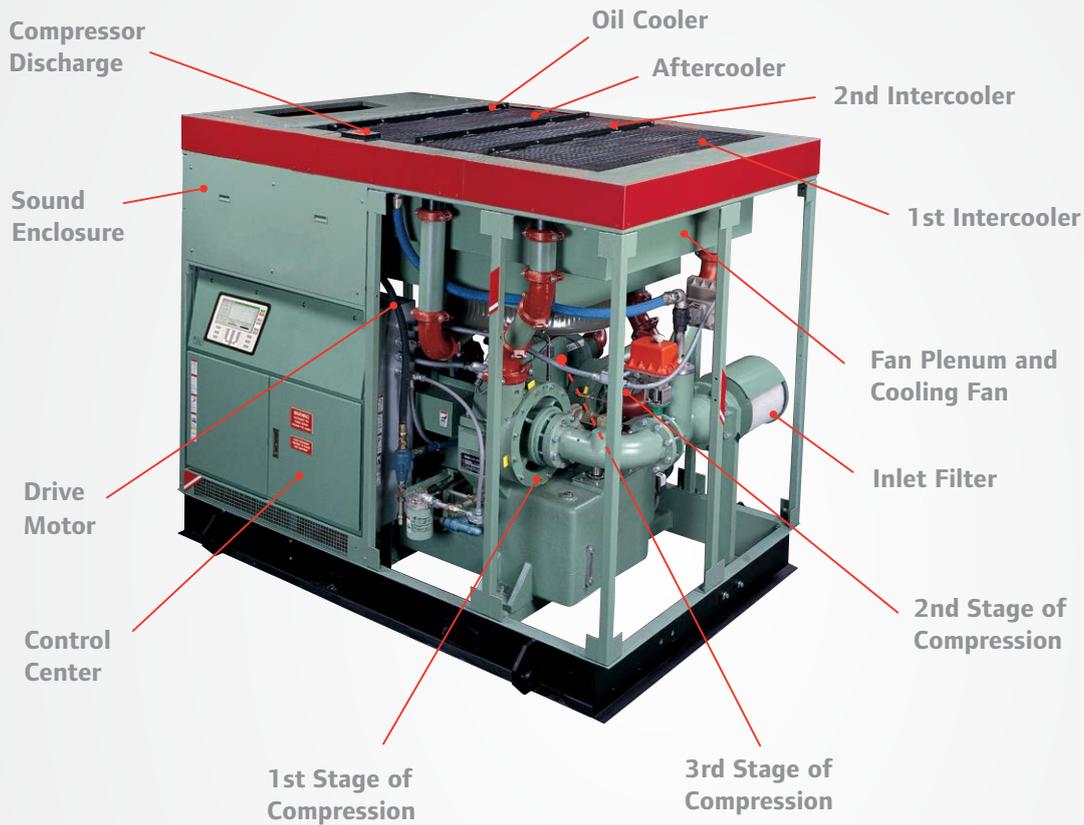
The MSG TURBO-AIR centrifugal compressor product line has been engineered to produce oil-free air for over 60 years. This certification officially acknowledges the ability of our compressors to produce 100% oil-free air, providing our customers with enhanced quality assurance.



# MSG TURBO-AIR COOLED 2000 Centrifugal Compressors

## 3-stage Compressor Layout

The MSG TURBO-AIR COOLED 2000 compressor features a superior arrangement of air-flow components. Air movement through each stage of the compressor is directed so turbulence is reduced. Energy is added to the air in each stage which increases the pressure. Air is cooled after every stage to assure high efficiency. A built-in aftercooler eliminates the need for a separate, pipeline-type cooler.



## Operating Cost Comparison

Save with the MSG TURBO-AIR COOLED 2000 Compressor

	Air Cooled	Water Cooled
Cost of Water	\$0	\$\$\$
Cost of Pumping Water	\$0	\$\$\$
Cost of Treating Water	\$0	\$\$\$\$
Cost of Maintaining Water System	\$0	\$\$\$
Installation of Closed-Loop Cooling System	\$0	\$\$\$\$
Cost of Closed-Loop Cooling System	\$0	\$\$\$\$

The MSG TURBO-AIR COOLED 2000 Centrifugal Compressor eliminates the cost of installing and maintaining a cooling water system.

## Advanced, compact package

Easy, low cost installation and operation includes a built-in aftercooler, inlet filter/silencer and optional packaged check valve.

- **MAESTRO Universal Control System** - Easy to configure for wide turndown and true system pressure control for significant energy savings.
- **Horizontally Split Gearbox** - Allows for easy access when jobsite maintenance policy requires periodic inspection.
- **Lubrication System** - Self-contained, low-pressure system.



### MSG TURBO-AIR COOLED Weight and Dimensions (L x H x W):

1854 x 2334 x 3423 mm (73 x 92 x 135 in)

**Compressor Motor Sizes Available:** 93 to 260 kW (125 to 350 hp)

**Compressor Discharge Pressure Ranges:** 3.8 to 10.3 barg (55 to 150 psig)

**Compressor Flow Ranges:** 15.6 to 48.1 m<sup>3</sup>/min (550 to 1700 CFM)

**Typical Package Weight\*:** 4536 kg (10,000 lb) \*driver dependent

## Product Features

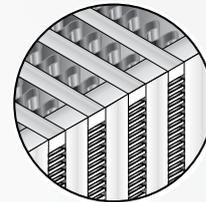


### Impellers

Advanced design combines the best features of a semi-radial, backward-leaning impeller.

### Vaned Diffusers

Matching diffusers are used for increased efficiency.

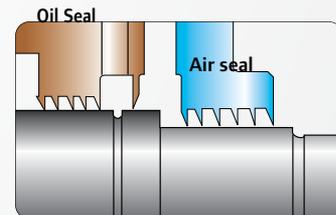


### Intercoolers / Aftercooler

Air-to-air heat exchangers provide cooling comparable to water-cooled compressors.

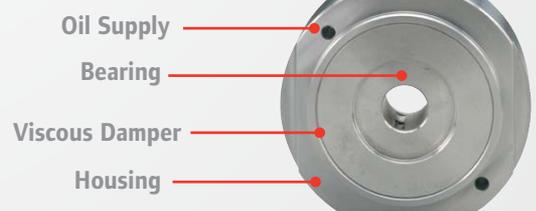
### Seals

Non-contacting, non-wearing labyrinth air and oil seals, with atmospheric air gap, require no buffer air for oil-free air, and eliminate the need for periodic replacement of carbon-ring seals and instrument air for permissive starting.



### Superior Pinion Bearing Design

For extended life and operation at any load. Patented, hydrostatic-squeeze-film design.





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