



# MSG<sup>®</sup> TURBO-AIR<sup>®</sup> 20000

## Centrifugal Air & Gas Compressor

The MSG TURBO-AIR 20000 is a custom-engineered centrifugal compressor built for individual customer needs for a variety of applications. It is particularly well-suited for multi-stage, dual-process applications.

### Features

#### MSG<sup>®</sup> TURBO-AIR<sup>®</sup> INTEGRALLY GEARED CENTRIFUGAL COMPRESSORS

MSG TURBO-AIR compressors offer outstanding design flexibility. MSG compressors are application engineered with numerous available configurations:

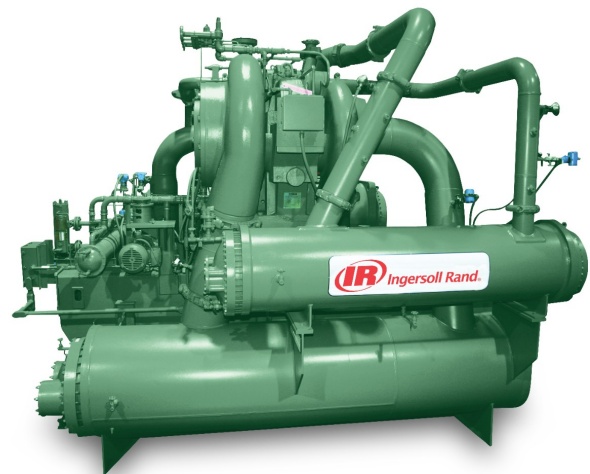
- Flows from 70 to 3800 m<sup>3</sup>/min (2500 to 135,000 CFM)
- Input capacity to over 18,650 kW (25,000 hp)
- Discharge pressures to 100 barg (1450 psig)

#### FEATURES

##### Oil-Free Air and Gas

- Prevents system contamination
- Reduces the potential for compressed air pipeline fires caused by oil carryover
- No costly waste disposal associated with oil-laden condensate
- Eliminates the expense and maintenance of oil separation filters at the discharge

##### High Reliability



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- MSG TURBO-AIR centrifugal compressors are designed to be extremely reliable due to: Conservative high-quality gear design Long-life pinion bearing design Thrust loads absorbed at low speed Stainless steel compression elements
  - Conservative high-quality gear design
  - Long-life pinion bearing design
  - Thrust loads absorbed at low speed
  - Stainless steel compression elements

### **Low Compressor Operating Life Cycle Cost**

MSG TURBO-AIR centrifugal compressors provide better overall operating efficiency than positive displacement or other centrifugal compressors.

- Excellent efficiencies at full load, part load and no load
- Low maintenance cost
- Increased uptime from high-reliability design (limits the need for multiple unit installations for basic reliability reasons)
- No sliding or rubbing parts in the compression process that can cause wear and thereby efficiency loss



### **Easy Operation/Maintenance**

- State-of-the-art MAESTRO control systems
- Fully automated operation for any process conditions
- Machine self-diagnostics
- Compression elements do not wear or require periodic replacement
- Accessible horizontally split gearbox for quick inspection
- Removable intercooler and aftercooler bundles for easy cleaning

### **Simple Installation**

- Compressor, lubrication system, intercoolers, shaft coupling, coupling guard, interconnecting piping, etc. on a common base
- Easy installation with no special foundation requirements
- Easy component accessibility
- Site connection point flexibility
- Reduced floor space required
- Dynamic compression process is pulsation-free, so installation of additional dampening equipment is not required.

### **APPLICATIONS**

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## Engineered Air Applications

- Industrial gases
- Instrument air
- American Petroleum Institute (API) standards
- Soot blowers
- Large plant air
- Power industry related

## Gas Compressor Applications

- Fuel gas boosting
- Natural gas gathering
- Hydrocarbon refrigeration gas
- Carbon monoxide
- CO2 (wet or dry)
- SynGas
- Low molecular weight recycle gas
- High-pressure nitrogen
- Landfill gas

## MSG TURBO-AIR centrifugal compressors are exceptional by design.

- One, two or three rotors, up to six stages per gearbox
- Horizontal splitline(s) for easy access to parts

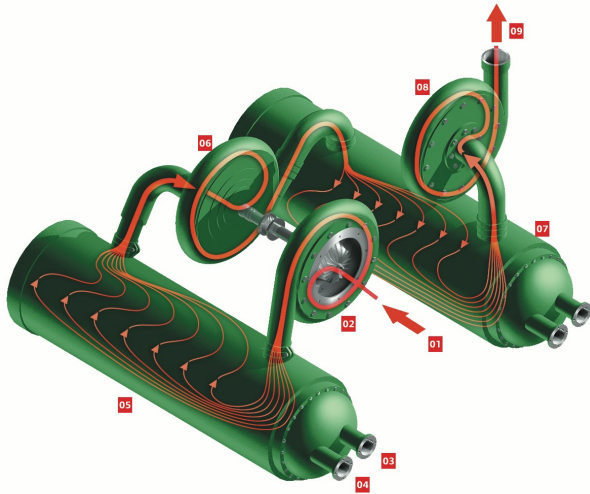
## GAS FLOW ARRANGEMENT

MSG TURBO-AIR centrifugal compressors feature an advanced arrangement of gas flow components.

Advantages of this arrangement include:

- Directed gas movement to reduce turbulence induced friction
- Air is cooled after every stage to provide high isothermal efficiency

Air Flow Diagram 01: Compressor inlet 02: First-stage compressor volute 03: Coolant in 04: Coolant out 05: First-stage intercooler 06: Second-stage compressor volute 07: Second-stage intercooler 08: Third-stage compressor volute 09: Compressor discharge



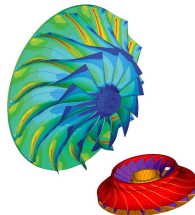
## Model Specifications

Specification	Metric	Imperial
Standard Input Power	up to 4100 kW	up to 5500 hp
Discharge Pressure	up to 80 barg	up to 1160 psig
Inlet Flow	515 to 700 m <sup>3</sup> /min	18,200 to 24,750 CFM

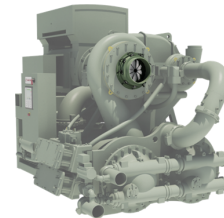
## Parts & Accessories



**MSC® TURBO-AIR® Centrifugal Compressor Replacement Parts**



**Upgrade - Aerodynamic Enhancements for Centrifugal Compressors**



**Upgrade - Variable Inlet Guide Vanes for Centrifugal Compressors**



**Centrifugal Oil Filters**



**Field Overhaul Services**



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