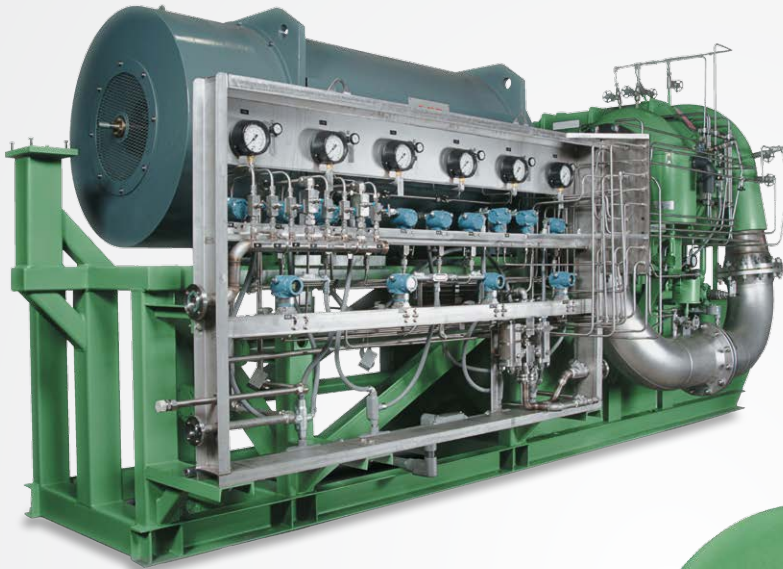


The Right Compressor for Your Needs

In a wide variety of applications, there is an MSG or MSG TURBO-AIR centrifugal compressor that meets your requirements. With more than 14,000 installations worldwide, on nearly every continent, Ingersoll Rand's products are proven in a number of different industries.



3R2MSGPB-5G/30 Gas Compressor (left)

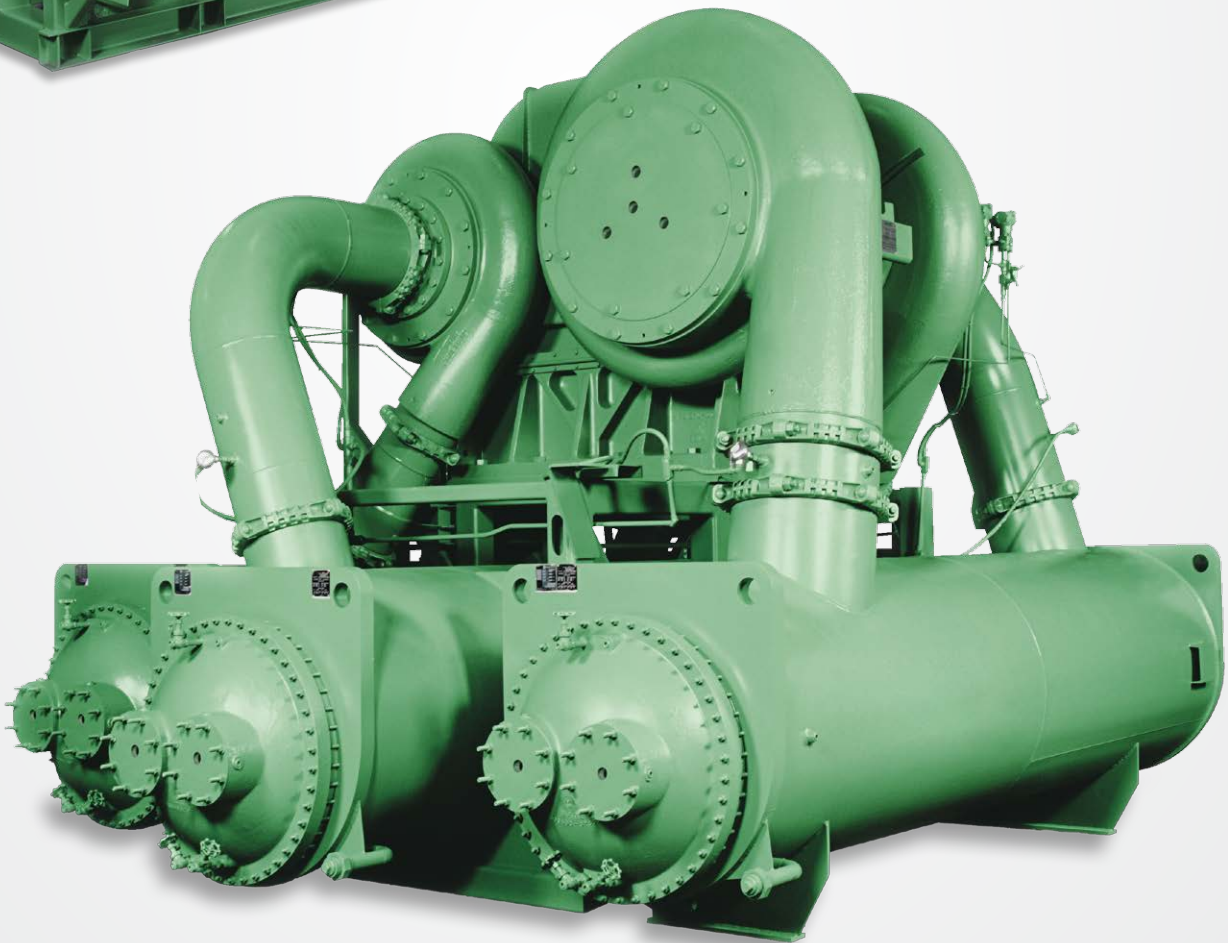
APPLICATION: Located in Algeria;
used as a propane boil-off gas compressor

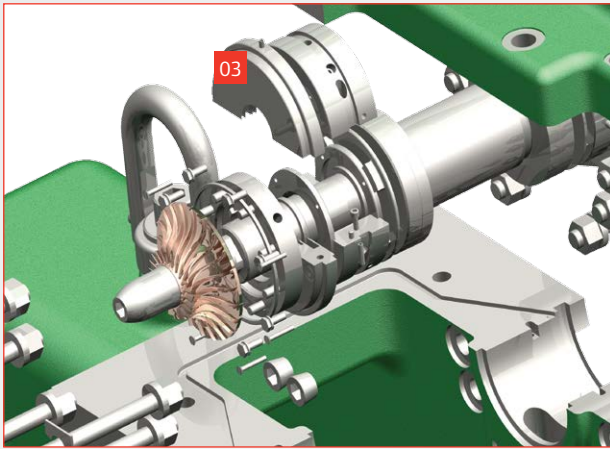
SPECIFICATIONS: Flow = 20,000 kg/h
Discharge Pressure = 7.3 barA

4MSG-16/15 Air Compressor (below)

APPLICATION: Located in China;
used as a main air compressor (MAC)
for an air separation plant

SPECIFICATIONS: Flow = 59,000 Nm³/h
Discharge Pressure = 12.4 barA





Engineered Air Applications

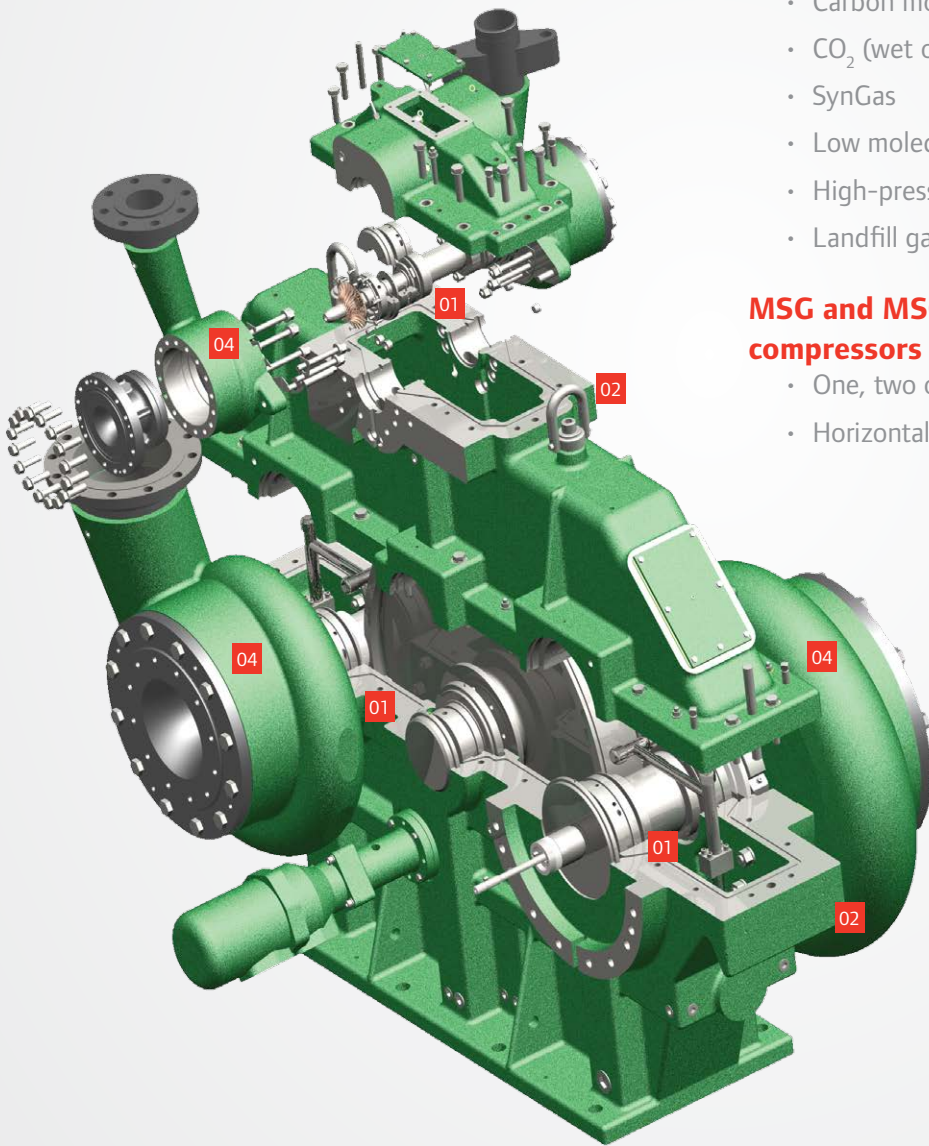
- Industrial gases
- Instrument air
- American Petroleum Institute (API) standards
- Soot blowers
- Large plant air
- Power industry related

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 and 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



Cross-sectional View of a Typical Three-rotor Process Gas Compressor

- 01: One, two or three rotors, up to six stages per gearbox
- 02: Horizontal splitline(s) for easy access to parts
- 03: Engineered seal designs
- 04: NACE-compliant scrolls and inlets can be manufactured from steel or stainless steel

Horizontally Split Gearbox for Easy Maintenance

- Allows inspection or replacement of gears, bearings and oil seals by simply lifting a cover
- No disassembly of piping or heat exchangers is necessary
- Periodic inspections and maintenance are made easy
- Reduced maintenance, increased uptime

Bullgears for Optimum Speed and Efficiency

- Allows each pinion to operate at optimum speed, as determined by the flow and efficiency characteristics of the impeller
- Main driver is connected directly to the compressor by a low-speed coupling
- Gears are high-speed, precision helical-type, designed to meet or exceed AGMA and ISO quality standards



Five-pad Tilting Pad Bearing Assembly

Tilting Pad Pinion Bearings for High Reliability

- Five-pad Tilting Pad bearings have the highest stability and lowest vibration level for high-speed shafts, which are subjected to variable loading over a wide range
- High reliability over the entire operating range, from full load to no load
- Pressure-lubricated and steel-backed for increased reliability

Rotor Assembly for Smooth Operation

- Each rotor assembly consists of a pinion shaft, to which one or two impellers are attached
- Pinion gears are hardened and precision-ground (AGMA and ISO quality) for longer life
- Smooth, vibration-free operation is assured through precision balancing

Tapered Rider Ring Thrust Collars on the Pinion Shaft

- Centrifugal design mitigates the majority of power-robbing thrust loads
- Thrust collars on pinion shaft create an oil wedge, which carries the small remaining net thrust to the bullgear where it is absorbed by a simple low-speed thrust bearing
- Reduces gearbox power losses while increasing mechanical integrity

