



MSG LMAC Centrifugal Air Compressors

Efficient, Reliable, Productive



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OPTIMIZED ASU PACKAGE

The MSG® LMAC is an integrally geared centrifugal compressor that has been optimized for applications in air separation units (ASU) as the main air compressor (MAC). The compressor package is designed for ease of installation, operation and maintenance, and to comply with various design code requirements for global installations.

The MSG LMAC is available in three models that have been aerodynamically optimized to serve as the MAC in ASUs producing 150 to 400 tons of oxygen per day (TPD).

MSG LMAC 20

Nominal ASU Size

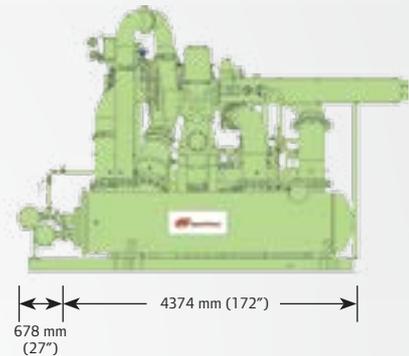
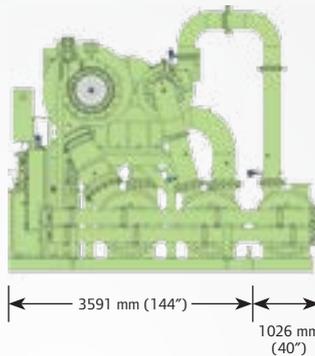
150 TPD

Nominal Compressor Discharge Pressure

Up to 8.5 barg (123 psig)

Nominal Compressor Flow Range

340 to 565 m³/min
(12,000 to 20,000 CFM)



MSG LMAC 30

Nominal ASU Size

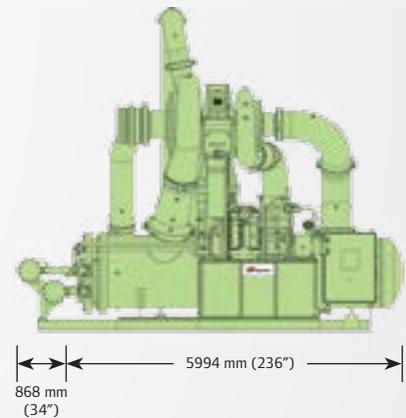
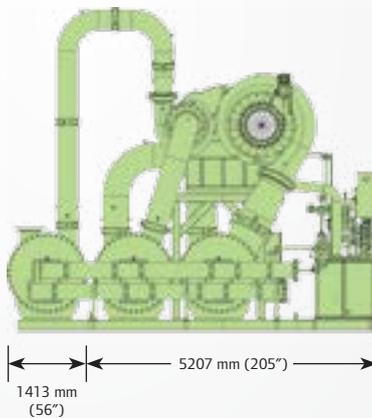
250 TPD

Nominal Compressor Discharge Pressure

Up to 8.5 barg (123 psig)

Nominal Compressor Flow Range

565 to 850 m³/min
(20,000 to 30,000 CFM)



MSG LMAC 50

Nominal ASU Size

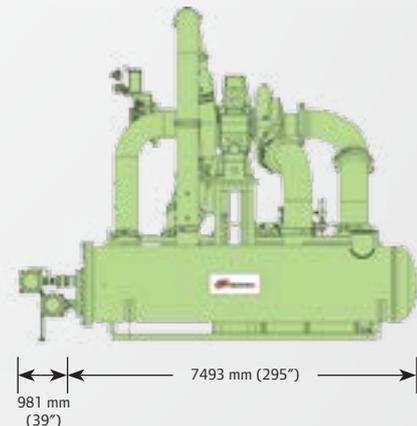
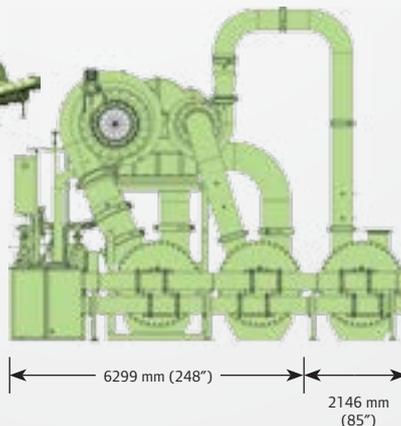
400 TPD

Nominal Compressor Discharge Pressure

Up to 8.5 barg (123 psig)

Nominal Compressor Flow Range

850 to 1,415 m³/min
(30,000 to 50,000 CFM)



AIR SEPARATION PROCESS

The volumetric composition of dry atmospheric air is ~78% nitrogen and ~21% oxygen, with the remaining ~1% being made of argon, carbon dioxide and trace amounts of other gases. These gases can be separated in an air separation process where the air is compressed, cooled and separated by molecular weight in a "cold box." Once separated, the gases are again compressed for storage, transportation, or further processing. Ingersoll Rand has the technologies and resources to provide the main air compressor (MAC), booster air compressor (BAC), nitrogen gas compressor (GAN), nitrogen recycle compressor (NRC), and argon gas compressors.

The MSG LMAC is designed specifically to fulfill the role of the MAC with optimized aerodynamic efficiency. Interstage coolers are implemented after each stage of compression to remove the heat of compression and achieve high isothermal efficiency. The MAC is the heart of the ASU; its efficient and reliable operation is critical to the success and viability of the ASU project.

Highly Efficient Design

MSG LMAC compressors are designed to deliver peak performance throughout the entire compressor operating range and feature:

- Custom, 5-axis milled impellers for process-specific aerodynamic designs
- Inlet Guide Vanes (IGV)
- High-efficiency intercoolers and optional aftercooler

Robust Mechanical Design

MSG LMAC compressors are designed to withstand the rigors of a long and demanding service life with:

- Tapered rider ring thrust collars to absorb loads at low speed
- Tilting pad radial bearings
- AGMA 13 rated bullgear and pinion gears

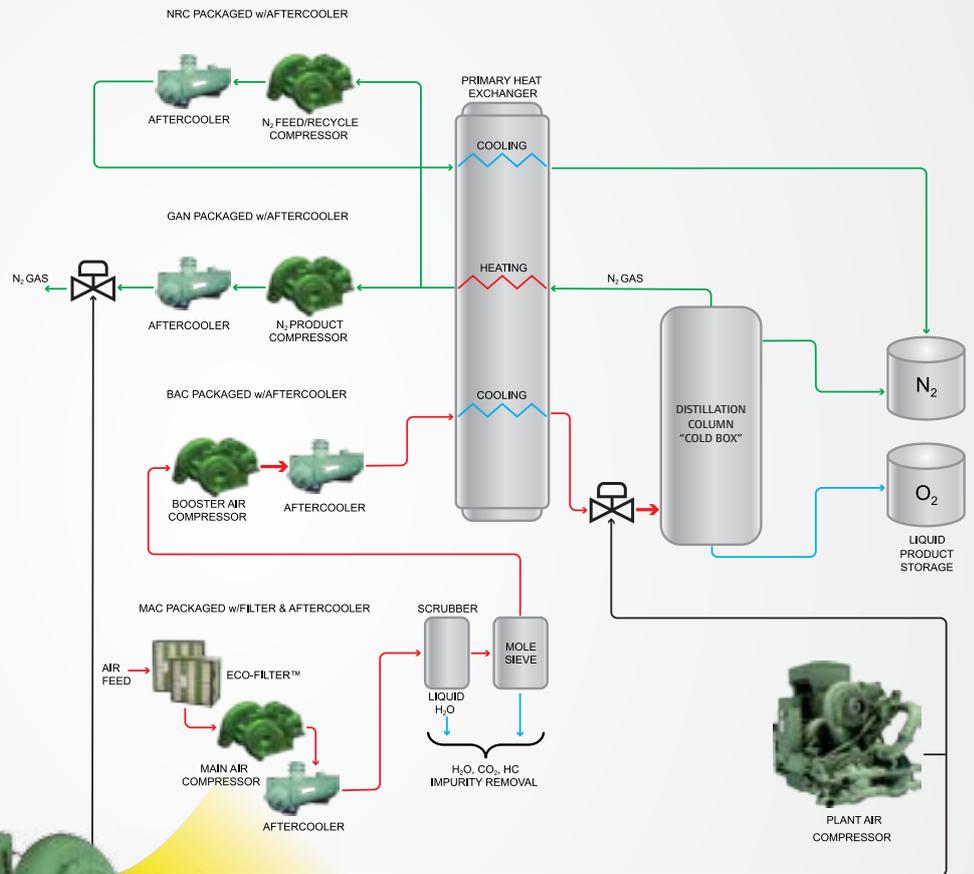
Additional Applications

In addition to air separation, the MSG LMAC can be deployed for efficient, reliable service in several other applications, including:

- Aerospace
- Automotive
- Electronics
- Fertilizer
- Glass
- Life Sciences
- Mining
- Petrochemical
- Pharmaceuticals
- Power Generation
- Steel



*Pictured is the MSG LMAC 20. This model features a package-mounted lubrication system that is integrated with the compressor sub-base for single lift capability.



Standardized Compressor Package

The highly accessible, standardized design allows for shortened delivery times and ease-of-installation/maintenance by providing:

- Standard engineering drawings
- Package-mounted intercoolers and terminal box/MAESTRO™ Universal control system
- Horizontally split gearbox
- Side-mounted lubrication console* with duplex oil filters standard
- Compressor sub-base*



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