The Advantages of Centrifugal Compressor Technology

Integrally geared centrifugal compressors represent the latest technology, offering significant advantages over outdated, less-efficient and more costly compressor designs. These advantages are inherent in the centrifugal design and are further enhanced by Ingersoll Rand's more than 60 years of centrifugal expertise.

Compare the innovative technology of MSG and MSG TURBO-AIR centrifugal compressors with other machines, such as positive displacement compressors, and the advantages are clear.

	MSG AND MSG TURBO-AIR CENTRIFUGAL COMPRESSORS	OTHER COMPRESSORS
LOW MAINTENANCE 	• Compression elements do not wear or require periodic replacement • Oil filter elements and seal gas filter elements are easily replaced online • Bearings designed for extended life	• Require regular maintenance, such as replacement of piston rings, gland packing and valve plates, or periodic replacement of air ends • Result in high operating expenses and significant machine downtime
OIL-FREE PROCESS GAS 	• 100% oil-free per ISO 8573-1 certification • Prevent contamination of system • Meet strict downstream requirements	• Oil filters must be installed at discharge • Potential for oil carryover to foul the process • Oil free claim is based dependent on uninterrupted seal gas supply
HIGH RELIABILITY 	• 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% • Conservative, high-quality gear design	• Contacting compression elements are subject to wear • Limited rotating element life • Designed-in wearing items to generate aftermarket revenues
NO PULSATION 	• Pulsation-free and require no dampers	• Require the use of large pulsation dampers to reduce pressure fluctuations
OPTIMUM CONTROL 	• Feature inlet guide vane control plus bypass for consistent gas delivery • Automatic operation and precision control for most operating conditions • State-of-the-art MAESTRO-suite of controls • PLC control systems available	• The use of cylinder unloading for stepped flow control can result in complicated process control due to sudden changes in capacity
COMPACT INSTALLATION FOOTPRINT 	• Capable of handling substantially higher volumes of gas in one or two small casings for a smaller overall package	• May have four or six cylinders requiring more space for installation
NO VIBRATION 	• Essentially vibration-free • Require only a pad suitable for supporting the static weight of the package	• Require large and deep foundation to handle heavy weight and unbalanced forces • Precautions must be taken to prevent transmission of vibration to other equipment