SAMSUNG TECHWIN

Samsung Turbo Air Compressor

Micro TM Series

www.samsungcompressor.com

Power Upgrade!

Micro TurboMaster!

Technology breakthrough in the Air Compressor Market
Claims about 100% oil-free compressed air.....are now true!

Micro TurboMaster is the first truly 100% Oil-Free Air Compressor.
High efficiency aero, direct drive high-speed motor, air bearings, and variable speed drive combine to create the highest efficiency offering in its size range.
One rotating part, no gearbox or oil system.....unprecedented system reliability.



Extraordinary Invention

Micro TurboMaster

The first ever 100% Oil-Free Air Compressor!
New design concept to meet customers' requirements

Minimum Operating Cost Through High Efficiency

Micro TM features a matched set of advanced impeller designs with backward-leaning blades and double-row vaned diffusers to achieve high efficiency over a wide control range. Both of these technology advancements are the direct result of Samsung's investment and substantial experience base in its high technology aero-engine business.

Minimum Maintenance and Repair Cost

Micro TM is a simple design with only one moving part, the rotor assembly. The balance of the package has been engineered to reduce maintenance and repair costs by minimizing the number of component parts with a finite design life. The intercooler and aftercooler are designed to eliminate the need for chemically cleaning, common in dry screw packages.

Minimum Space for Installation and Compact Design

Micro TM is a complete factory package, incorporating the inlet filter assembly, discharge check valve, cooling water manifold, automatic drain traps and control system, all enclosure within an attractive, sound-attenuating enclosure. The Micro TM does not require any support foundation for on-site installation requirements.

100% Oil-Free Compressed Air and Friendly to the Environment

Micro TM features a high-speed and high-efficiency, permanent magnet motor mounted on airfoil bearings, eliminating the oil system and the possibility of contaminating the compressed air with oil from the drive system. The Micro TM is an environmental friendly compressor completely eliminating the need to deal with waste oil and/or oil contaminated condensate.

Low Electric Power

The high speed drive system utilizes advanced, high-efficiency inverter technology which allows the compressor speed to be varied to match the load as part of the Micro TM control system. The inverter also functions as a "soft starter", allowing to unit to ramp up to speed without creating excessive inrush currents.

Simple and Easy Control System

Micro TM utilizes a modulating control system to maintain constant system pressure, and is equipped with a modern and convenient 5.7" color touch screen for operator interface. All of the operating information is easily available through a series of logically presented screens with intuitive, but simplified navigation.

Minimum Noise

The sound level of the Micro TM measures 65dB(A). These unprecedented levels are achievable because there are no gear or lubrication system noises to deal with. The result will be a safer and more comfortable workplace environment.

Performance Enhancement

High Technology

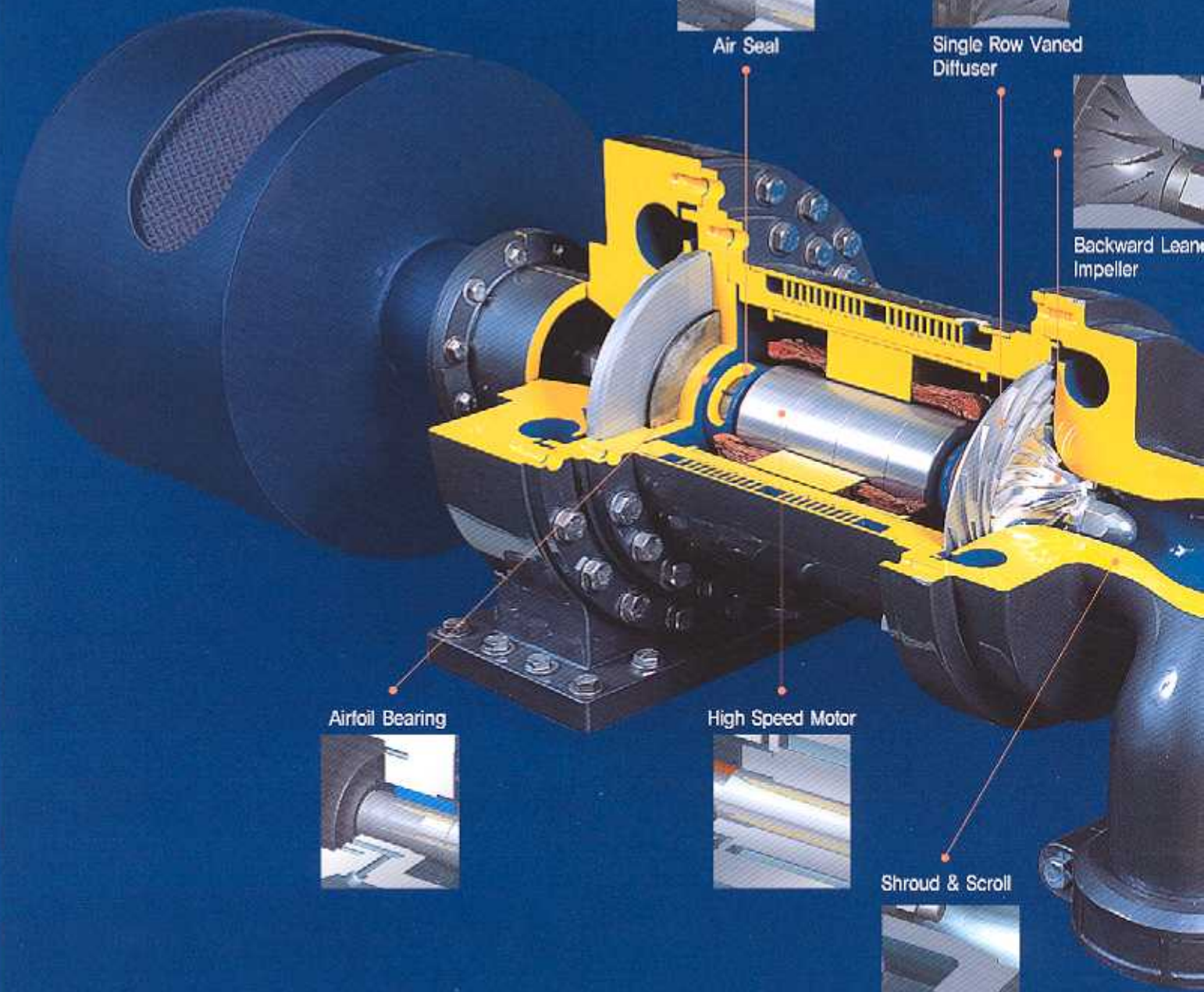
New Technologies applied to Micro-TM

■ Figure of Core Module

Air Seal

Single Row Vaned Diffuser

Backward Lean Impeller



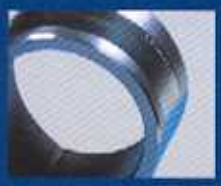
Airfoil Bearing

High Speed Motor

Shroud & Scroll

High Speed Motor

The high-speed permanent magnet motor operates at 70,000 rpm with high efficiency, including windage losses, and is a perfect match for the requirements of centrifugal air compressors. The introduction of high-speed drives now allows these compressors to be driven directly by the motor shaft, eliminating the need for these complex geared systems. These H-S drive systems are, by their nature, variable speed and this added functionality is also incorporated into the advanced control system.



Airfoil Bearing

Air bearings have been used for many years in aircraft applications, where oil systems are limited by temperature, size, weight and complexity. These advanced bearing designs, which utilize a maintenance free advanced coating technique, are now available for use in continuous duty industrial applications, and have been incorporated into the Micro TM, eliminating the lubrication system in its entirety. The airfoil bearing supports the rotor throughout its full operating range on a film of air, instead of oil providing and insuring 100% oil-free compressed air supply.

Backward Leaned Impeller / Single Row Vaned Diffuser

The impeller and diffuser aero components have been optimized using the latest 3D CFD analysis techniques, and are 5-axis machined in durable, 17-4PH stainless steel. The flow path features backward leaning impeller blades in combination with single-row vaned-type diffusers on both stages to insure the highest operating efficiency and a wide operating range.

Inverter

Inverters are used to generate the higher frequencies needed to drive motors beyond the conventional 50/60hz speeds. Modern inverters are 95% efficient, allow operation of the system with a unity power factor and, using frequency control, are inherently variable speed devices. These capabilities have been incorporated into the Micro TM in the form of a soft-starting and advanced capacity control systems.

Intercooler/Aftercooler

The built-in inter and aftercoolers are water-in-tube designs, with straight through tubes to allow effective cleaning in place, with simple and commonly available tools. The plate-fin tube intercooler provides outstanding cooling efficiency, while minimizing pressure loss, and a proven phenolic resin coating is applied to insure extended life in service.

Safe & Easy!

Versatile Controller

Simplified operating system... Safely

Control Panel

Operator interface is easily accomplished through the generously sized 5.7" color touch screen, mounted conveniently within the Micro TM control panel. The touch screen interface allows the user to input data on a compressor, and easily monitor its condition.

Automatic Condition Monitoring

Micro TM has automatic sensor and monitoring systems for temperature, pressure, and vibration of the compressor, as well the motor and inverter. Factory preset alarm and shutdown settings are monitoring through the local control panel and/or remotely. Historical reporting and trending allows the operator to establish condition based maintenance program that have been proven to significantly lower O&M costs.

Modulating Control

A built-in modulating control system allows the Micro TM to automatically follow changes in compressed air demand. Constant pressure is maintained through the precise control of the motor/compressor speed, in combination with a modulating blow-off valve, and results in optimum load following operation.

High Quality &

Product Support

Reliable Warranty system for quality

Samsung Techwin is committed to offering products and services that earn a reputation for superior performance, unmatched reliability, and service when and where required.

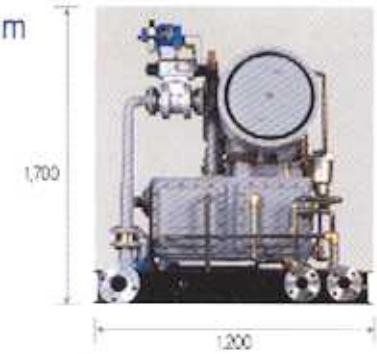
- Zero defect warranty system for quality applied to the aero-engine business
- Total performance and reliability testing
- 24hrs A/S system

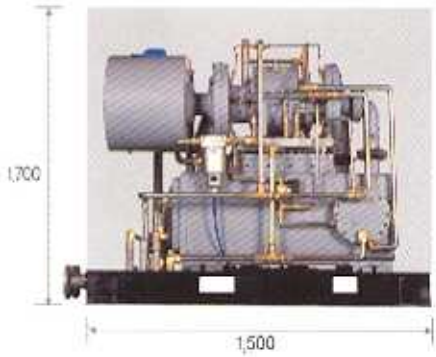
TURBO MASTER®
SAMSUNG TURBO AIR COMPRESSOR

• Without Enclosure

• With Enclosure

• External diagram





• Specification

Model	TM 125	TM 150	TM 175
Motor(HP)	125	150	175
Capacity	800 ~ 1,600 m³/hr (470 ~ 940 CFM)		
Discharge Pressure	6 ~ 10 Bar A (87 ~ 145 Psi A)		
L x W x H(mm)	1,500 X 1,200 X 1,700		
Weight(kg)	2,100		

Remark 1. The Capacity is applicable in following conditions :
Ambient pressure 1.013 Bar A, Inlet pressure 0.983 Bar A, Relative humidity 80%,
Ambient temperature 35 °C (95°F), Cooling water temperature 32 °C (95°F)
2. Weight includes Enclosure

• Standard Scope of Supply

- High Speed direct motor drive system
- Airfoil Bearings
- Two-stage high efficiency 17-4PH stainless steel matched impellers and diffusers
- High efficiency Inverter
- Microprocessor control panel (5.7" Color Touch Screen & Modulating Control)
- 'Water-In-Tube' type intercooler and aftercooler, mounted
- Automatic condensate traps, mounted
- Inlet Filter, mounted
- By-pass valve assembly and check valve, mounted
- 65dB sound attenuating enclosure

ISO14001 Cert. No.: RWS 5410
ISO9001 Cert. No.: RW 2439

Samsung Techwin Micro TM Status

- Jul., 1997 Certified ISO14001
- Feb.,1999 Certified ISO9001
- Feb., 2004 Acquired the KT Mark
  (Excellent Korean Technology)
- Feb., 2004 Awarded of Jang Young-Shil Prize

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