



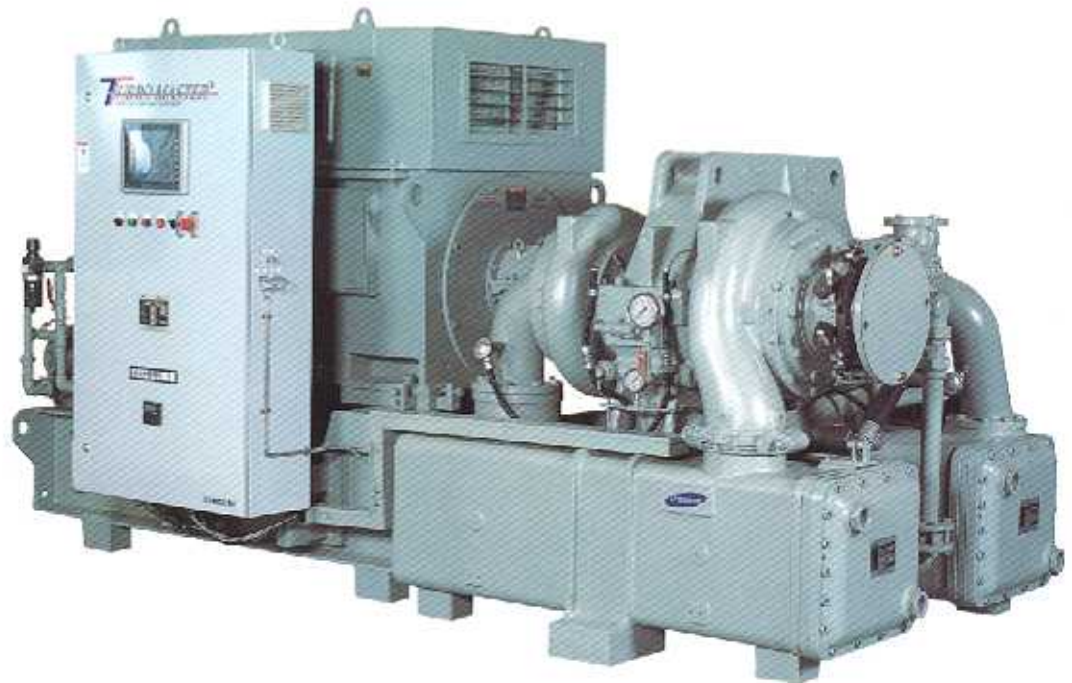
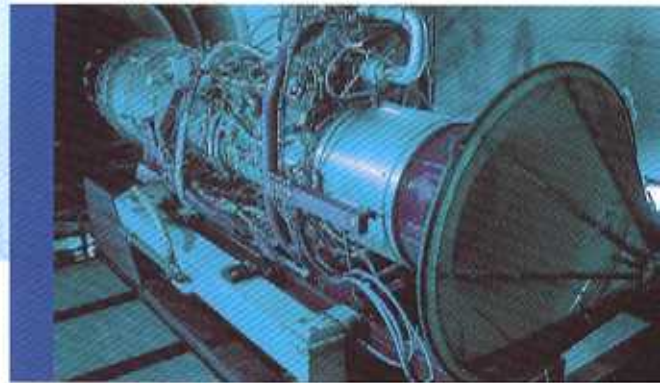
**Samsung**  
**Turbo Air Compressor**  
**TM Series** [www.samsungcompressor.com](http://www.samsungcompressor.com)

Born in the air,

# air to the ground

## High-performance turbo air compressor utilizing modern aircraft engine technology

TurboMaster is manufactured with the professional expertise and experience of Samsung Techwin's many years in the aircraft industry! Experience unrivaled performance and genuine convenience, and bring world-class technology to your industrial site with TurboMaster.



Visionary Mechanism!

# The Best Performance



## High-Performance Turbo Air Compressor, TurboMaster...

Samsung-manufactured top class air compressor

### Design optimization achieved using State-of-the-art engineering tools :

- 3-D CFD (Computational Fluid Dynamics), allowed for optimized impeller aerodynamic characteristics
- 3-D FEA (Finite Element Analysis) enabled efficient, low-stress component design
- Dynamic Rotor Analysis has resulted in optimum rotor stability and bearing loading

### Economic and energy-saving operating system

TurboMaster's high-efficiency impellers are versatile as well as economical, thanks to improved geometries featuring extremely low power consumption per unit. In addition, the standard IGV (Inlet Guide Vane) system controls compressor flow to efficiently meet demand, offering energy savings to 9% over that of ordinary inlet throttle devices.

### Quality Assurance is our Core product!

Every compressor that Samsung manufactures is part of our well known quality processes, learned as a way of business from our Gas Turbine manufacturing history.

### Simple maintenance

TurboMaster's horizontally split gearbox and simple, modular design will minimize maintenance time. When compared to non-modular or vertically split compressors, the TurboMaster design ranks superior, allowing simple and quick access to gearing, bearings, seals and rotors, with no interruption to process piping, cooling, or oil systems.

### Intuitive controller interface is efficient and user-friendly

The TurboMaster touch-screen LCD interface, visually provides all the information necessary for efficient compressor operation. It features a clear, easy to read display, and is simple to operate due to its highly intuitive structure, such as its on/off buttons.



### High-performance impeller

Our impeller's backward-leaning blade design provides exceptionally high efficiency across the entire operating range, while its corrosion and abrasion resistant material offers semi-permanent durability. Every impeller's reliability is assured at our factory by 115% overspeed operation, followed by NDT testing to confirm integrity.

### Inlet Guide Vane (IGV)

Fundamental to the TurboMaster's efficient operation, are the computer controlled variable Inlet Guide Vanes (IGV). Every customer receives as standard, this performance enhancing flow device, which restricts inlet flow during reduced demand, while pre-rotating the airflow in the same direction as the impeller. The IGV assures the steady, smooth, and energy conserving delivery of compressed air to the system.



### Horizontally Split Gearbox Case Design Features

Gearbox maintenance and repair is made less expensive and easy, due to design features such as:

- Taper pins which allow outstanding assembly repeatability
- Lifting eyes for safe and easy component handling
- O-Rings, instead of troublesome gaskets
- Single piece lift-off horizontally split gearcap
- Solid shims

All major compressor components are robust, high quality pressure tested castings, which help provide TurboMaster's vibration free, quiet operation.



## Excellent Performance from Superior Design and Component Technology!

TurboMaster is designed to offer optimum performance and flexibility to satisfy the requirements of a broad spectrum of customers and applications. TurboMaster's world-class designs and quality components continue to prove themselves by satisfying customers with solid performance... every single day!

First-Class Solution!

P r e m i u m

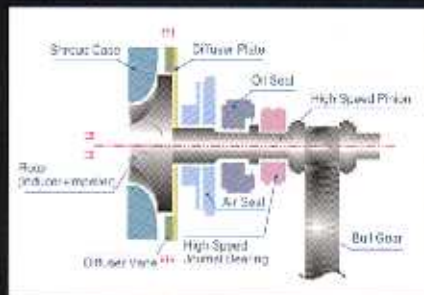


### Gear System

TurboMaster uses a single helix, integral gear system. The high quality (KS and AGMA 13) helical pinion gears provide quiet, vibration free, low stress operation, while also offering a balancing counter force to the axial loading which is inherent to centrifugal compressors. All gears receive 'Nitriding' heat treatment, which renders them a virtually permanent lifespan.

### Bearings

All TurboMaster bearings are oil film design, using clean, cool, pressure controlled oil, which is supplied by the integrated system. The high-speed pinion gear assemblies rotate within tilting pad journal bearings. These semi-permanent, extremely reliable bearings assure consistently efficient operation, free of oil whip and heat build up. In addition, the combination journal/thrust bearings that support the bull gear, are comprised of four lobe journals, and tapered-land thrust pads which both effectively work to minimize friction losses.

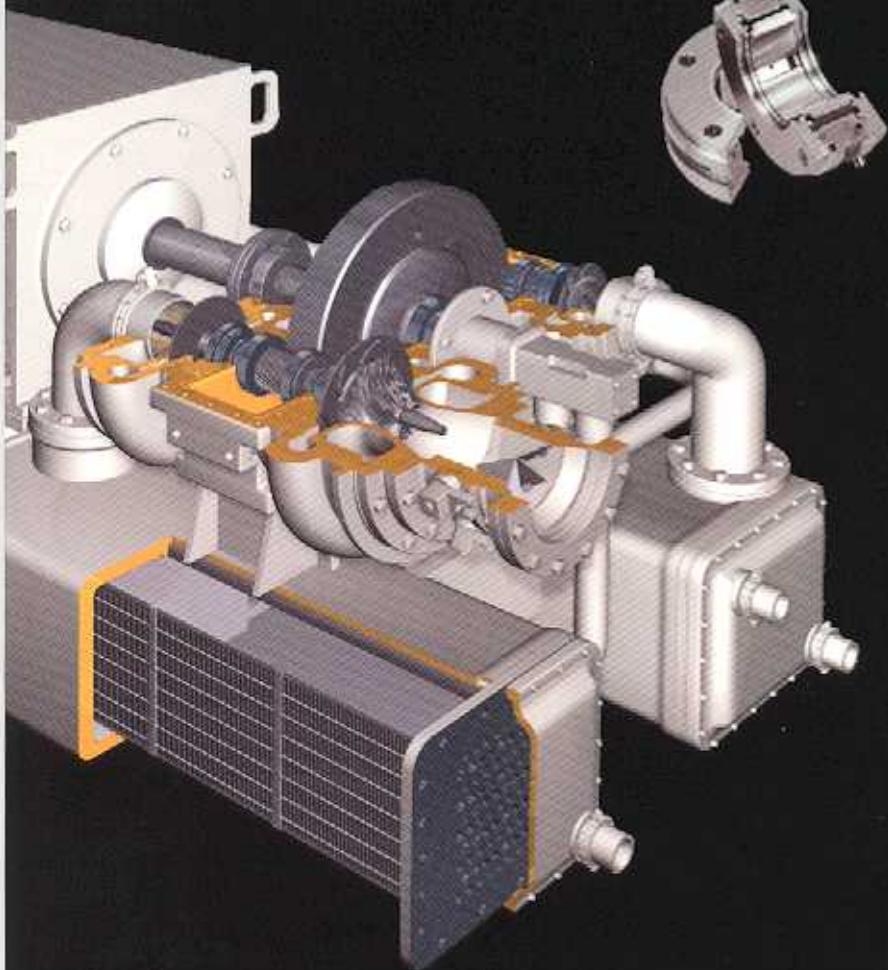


### Sealing System

A balanced, four-stage, self-buffered sealing system assures 100% pure air delivery to the customer's system, even under prolonged low system demand conditions. The air and oil seals are made of aluminum, and are non-contacting, split labyrinth design. This design offers a semi-permanent lifespan, and easy inspection, cleaning, removal or replacement.

### Intercooler

TurboMaster Intercoolers are compact, efficient and easily serviced. Straight water-in-tube design allows for convenient cleaning, inspection and maintenance, while the plate-finned tube structure furnishes excellent heat transfer with minimum pressure loss. Coated steel/iron surfaces, and copper alloy tubes with aluminum fins offer excellent standard corrosion/erosion resistance and long life. Optional materials and coatings are available for severely corrosive environments.



T e c h n o l o g y

Intelligent Master!

# Versatile Controller

## Convenient control system that enhances efficiency

The control system is designed to suit various industrial site conditions, and offers unparalleled operating efficiency with automated control and easy operation.

### Touch PLUS control panel

TurboMaster is equipped with Touch PLUS, our flexible and proven-reliable turbo compressor control system. This system provide its users with one of the most informative, user friendly operating and control environments on the market.

### Automatic dual or modulating control

TurboMaster controls automatically detect and respond to reduced flow demand. Every TurboMaster offers phenomenal turndown ratios, in some cases as great as 35%, thanks to its standard IGVs sophisticated control logic, and efficient backward leaning impeller designs. For compressor flow demands reaching all the way down to zero flow, Samsung offers two control different control systems to meet the user's needs;

1. **Automatic-dual control** is the most energy efficient means, and will automatically unload and reload the compressor during times of reduced demand.
2. **Modulating control** is offered for the customer who demands steady compressor output pressure, even during times of greatly reduced demand.

### Automatic control

TurboMaster control system detects and monitors all vital compressor operating parameters as standard. This includes; oil pressure/level/ temperature, rotor vibration and motor current among other functions. The control system logic is designed to prevent any dangerous or potentially harmful conditions, but if an abnormal condition does occur, the system will alarm the operator as to the problem. If the condition reaches a dangerous level, it will gently shut down the compressor automatically.

### Large color LCD touch screen

Some of the benefits offered by TurboMaster's large color LCD touch screen, is that it is easy and intuitive for the operator to enter required data. It also displays all the compressor system parameters neatly and systematically on its clear and easy to read screen. At a glance, the operator can react quickly to any problems, or make any needed adjustments.



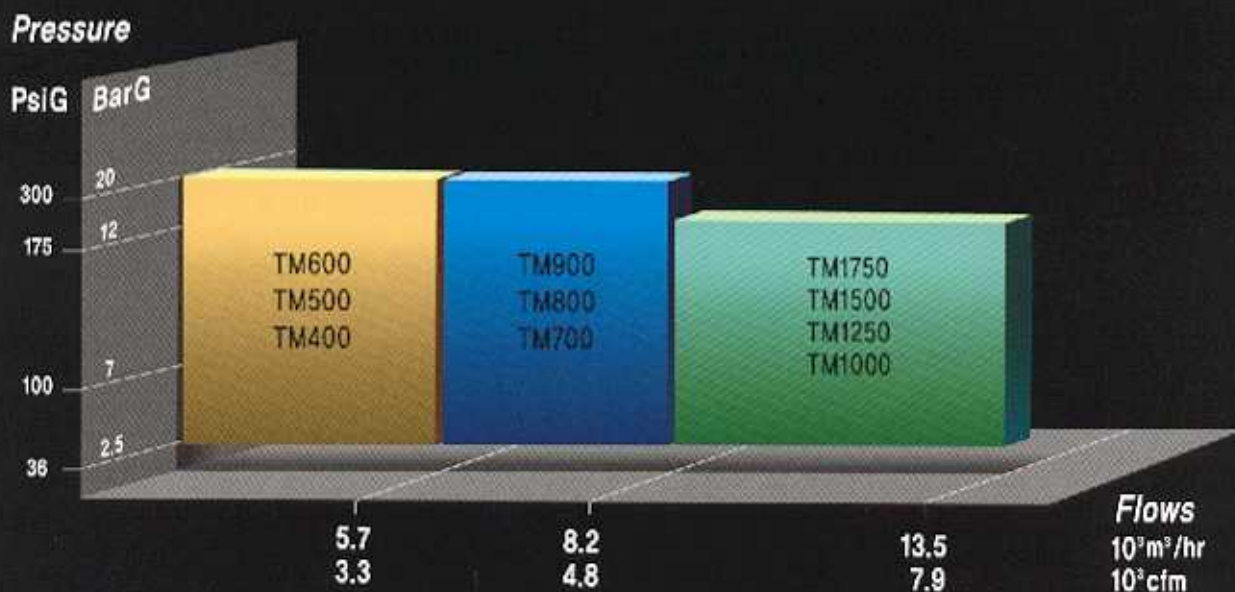
## Product Support

### We aim to satisfy TurboMaster customers from the first moment of purchase!

Samsung Techwin has reflected its long experience in the design and manufacture of aircraft engines with the TurboMaster air compressor, and aims to pursue customer satisfaction via a unique quality assurance system based on aircraft industry standards. Comprehensive after-sales management and flawless maintenance support are vital assets that securely link Samsung Techwin, a trusted air compressor manufacturer, with its valued customers.

# Standard Specification

## Output pressure and intake flow rate



## Specifications

Model	TM Series									
	TM 400	TM 500	TM 600	TM 700	TM 800	TM 900	TM 1000	TM 1250	TM 1500	TM 1750
Motor(HP)	400 ~ 600			700 ~ 900			1000 ~ 1750			
Capacity(m <sup>3</sup> /hr)	2200 ~ 5700			4300 ~ 8200			6100 ~ 13500			
Discharge Pressure(Bar G)	2.5 ~ 20									
Length x Width x Height(mm)	2900 x 1600 x 1800			3210 x 1900 x 1930			3985 x 2070 x 1980			
Weight(Tons)	4.2			6.0			7.0			

\* Electric Motor Excluded

### Standard specifications

- Compressor Core Unit ■ Control System ■ Lubrication System ■ Aftercooler with moisture separator
- Inlet Filter-Silencer ■ Inlet Filter D/P Gauge ■ Blowoff Valve Ass'y ■ Blowoff Silencer ■ Inlet Guide Vane
- Inlet Expansion Joint ■ Discharge Expansion Joint ■ Discharge Check Valve ■ Anchor Bolt & Shims

### Optional specifications

- Contant Pressure Control ■ Sequence Control ■ Monitoring System(MMI) ■ Sound Enclosure
- Dual Oil Coolers ■ Dual Oil Filters ■ Auto Condensate Drains ■ Additional Control ■ API Code



ISO14001 Cert. No. EM6 5412  
ISO9001 Cert. No. FM 24380

#### Samsung Techwin Turbo Compressor Status

- Jul., 1997 Certified ISO14001
- Nov., 1997 Acquired the KT Mark  
(Excellent Korean Technology)
- Apr., 1998 Awarded of Jang Young-Shil Prize
- Feb., 1999 Certified ISO9001
- Jul., 2001 Acquired the CE Mark



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Agent