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NAMWON
TURBOONE

The most efficient PM motor

NAMWON TURBOONE

Turbo Blower

The most efficient PM motor
Namwon turboone turbo blower

2016 Growth

2003 Development

1995.09 Establishment

Corporate history

Sept. 1995	Established Namwon
Oct. 1997	Received $10 Million Export Tower on the 34th Korea's Trade Day
May 2001	Established an exclusive sales contract with Kturbo Inc. for 15 countries in Asia
Jul. 2003	Established joint sales subsidiaries in Beijing and Qingdao,China and Taiwan
Mar. 2012	Established an investment corporation (subsidiary) in Qingdao,China
Sept. 2012	Started selling and manufacturing Namwon Turbo Blowers (Turbo One & NWTB)
Jan. 2015	Established the first plant in Hwasun
Oct. 2015	Started construction of the second plant in Naju

Certificates

NAMWON TURBOONE

TURBO ONE is a turbo blower manufacturer specialized in research, development, manufacture & sale and boasts of leading technologies for air bearing, precision processing impeller, high-speed and high-efficient motor, variable speed inverter and low-noise facility controller used in various industries.

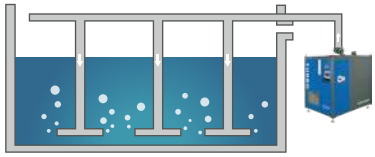
The best in efficiency, performance, and quality
The best choice for a more pleasant industrial environment!
Creation of customer profitability through energy-saving and cost-saving
Customer satisfaction through post-management service

Color Chart

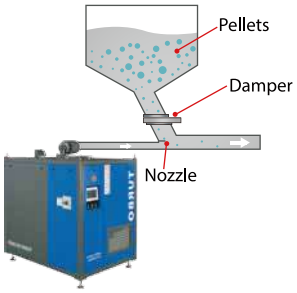
Technology that saves the nature,

Proved through Turbo Blowers by **Namwon Turbo One.**

Compressed Air of Turbo Blower satisfies diversified need in various industrial processes.

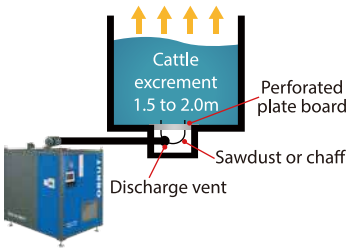


Water treatment facilities
Sewage, filthy water and wastewater treatment facilities
Waste water oxygen dissolution (inorganic substance propagation)

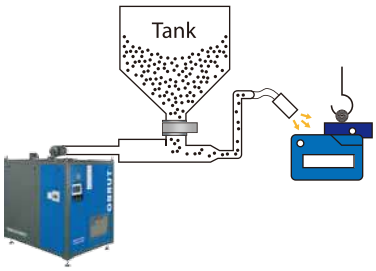


Mechanical Conveying System (MCS)
Mechanical conveying of cement material &chemical material
Other industries

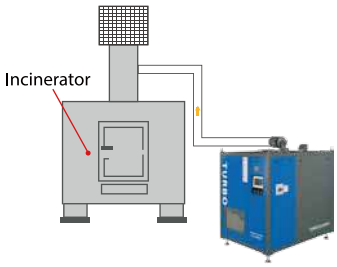
Dehumidification, drying & fuel gas desulfurization



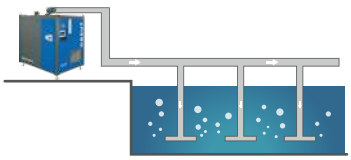
Compositing Fermentation
Supply of air to human waste treatment facilities in the agriculture and stockbreeding sectors



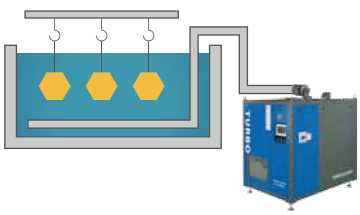
Sand Blasting



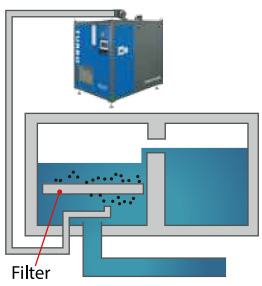
Incinerators



Oxygen Supply



Plating Bath



Back Washing

Turbo blower features

Characteristics of Turbo Blower by Namwon Turbo One

Convenient repair & management / Minimized repair & maintenance costs

- Application of foil air bearing without use of lubricant
- No need for regular supply of lubricant or exchange of bearing
- Cleanup or exchange of only the air filters

Elaborate composition

- Simple, small, light & elaborate
- Reduced manufacture cost, installation space & convenient transportation and installation

Convenient use and control

- Automatic measurement in terms of the number of revolutions of a motor, pressure, temperature and flow rate with a computer in a control room
- Control of static pressure operation, load/unload operation & ultra -load operation
- Automatic operation of blowers through surge prevention control

Energy-saving & energy-reduction (Up to 45%)

- High-efficient design in the compression part & application of high-efficient motors
- Comprehensive efficiency is 65% or higher, and the certificate of high efficiency energy using appliance acquired from Korea Energy Management Corporation

Low-noise, no-vibration & long lifespan

- Low noise (75~80dB-@1m or lower) due to the application of direct connection to air bearing (no contact among devices)
- No need for sound-proof facilities

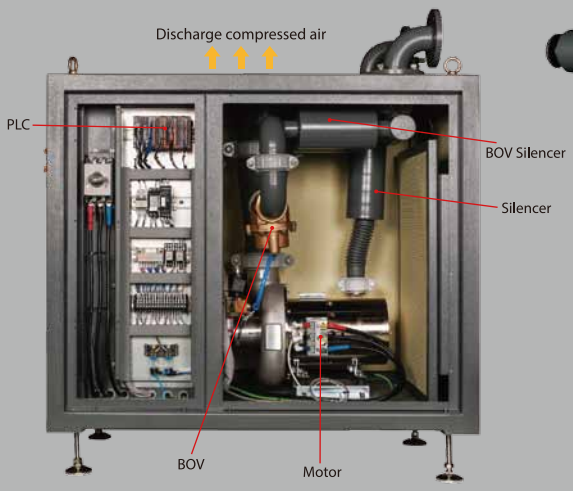
Oil free operation & supply of pure air & no-vibration

- Application of non-contact air bearing
- A centrifugal air blower where suction and discharge are conducted on a continual basis
- Zero-vibration products

Namwon Turbo Blower Structure

Plain type

Flange type

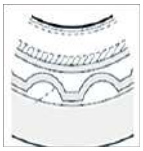


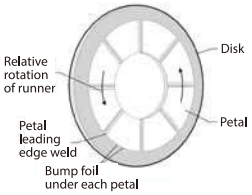
High Performance Turbo blower

Turbo Blower with ultimate operation capability based on the highest verified technology

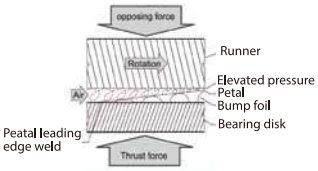
Air foil bearing

Non-contact bearing that uses the compressed force by the wedge effect of the surrounding air of the shaft rotating at high speed to support the load of the rotor

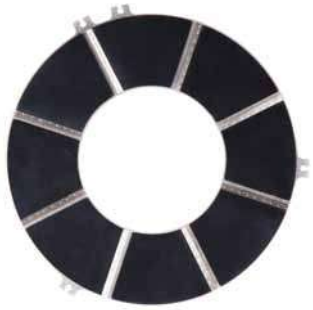




Thrust bearing



Thrust bearing assembly cross-section



Air bearing of Turbo One adopts a 100% oil-free non-contact method without using lubricant in a rotating machine, and it is free from malfunction based on a very simple system and can be conveniently repaired and maintained. It also maintains the highest efficiency by minimizing power loss and realizes stability and long life based on environmentally friendly air bearing without vibration and noise.

1)

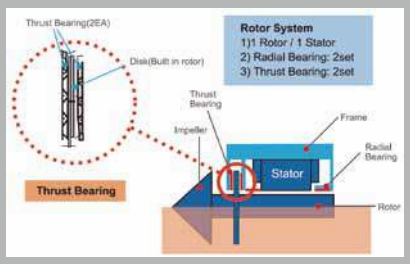
A shaft (a pivot) starts moving the inner surface of bearing.

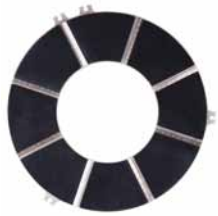
2)

As the speed is increased, the shaft is gradually moving toward the center.

3)

Just before it reaches the normal speed, the shaft is placed at the center of a circle.



Distinction	Air Foir Bearing	Tilting Pad Bearing	Ball Bearing
			
Lubricant	No use	use	use
Durability/life	Semi-permanent	Semi-permanent	Replacement required
Repair & maintenance	None	Check once every five years	Replacement after operation for a certain amount of time
Credibility	20	1	1
System	Simple	Complicated oil system (Pump, Filter, De-compressor, Pressure Sensor …)	
Application	Small device	Industrial device	Air craft engine & small devices

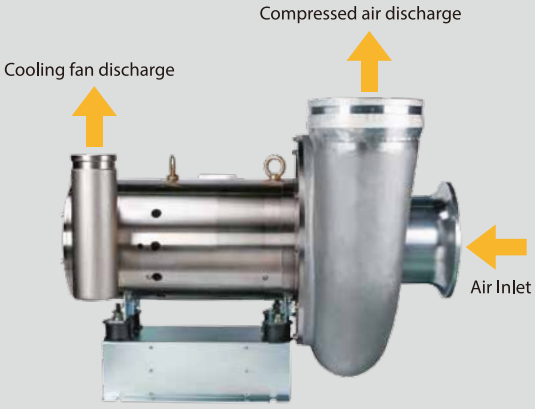
High-Speed Permanent Magnet Synchronous Motor (PMSM) with the Highest Efficiency

Turbo One PM Motor minimizes high frequency losses based on design for high-speed rotation to realize a 98% efficient speed motor.

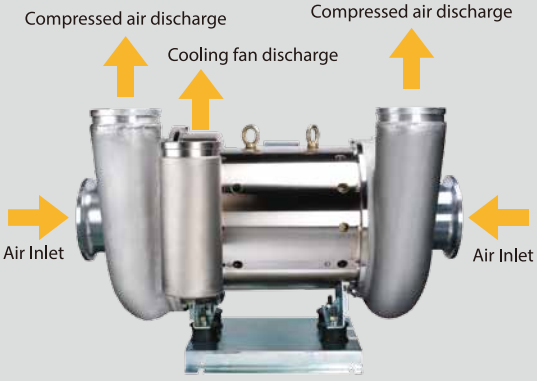
- No loss in power transmission based on direct-connection operation
- Maintenance of high efficiency throughout the entire sectors based on permanent magnets
- Up to 60,000RPM is realized through inverter frequency conversion
- A smaller radiant heat structure compared to capacity
- Optimized design in consideration of high-speed rotation
- Operation of rated current at 4.5%
- Over 20,000 times of start/stop cycle test

Inside composition of product up to 250HP

Inside composition of product over 300HP



Single impeller – up to 250HP

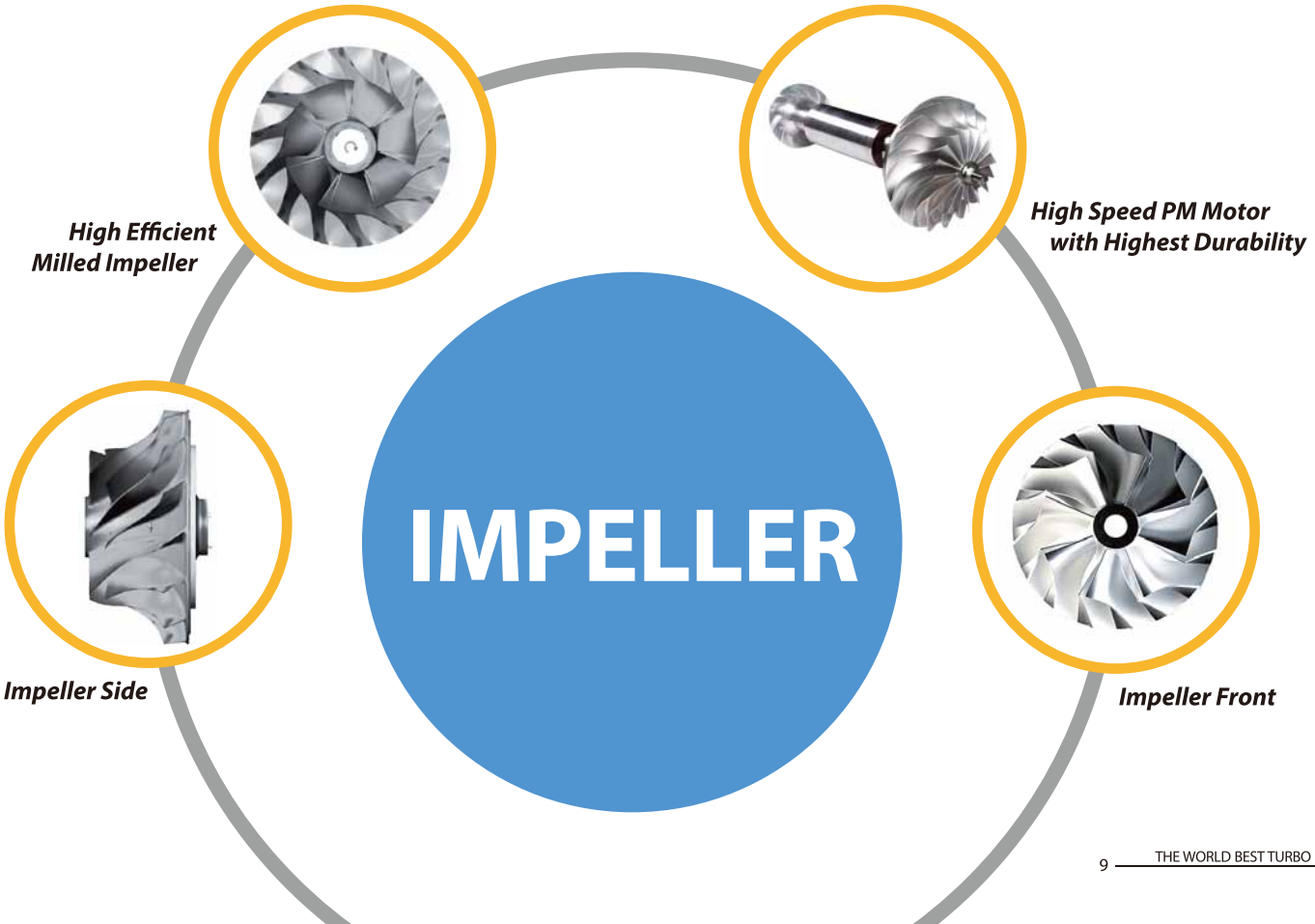


Dual impeller - over 300HP

Precision Manufacture-based Impeller

Turbo One Impeller manufactured with advanced aerodynamic system boasts high capacity based on the same technology as aeronautical engineering and the most sophisticated design.

- Adoption of high-strength heat-treatment aluminum AL7075
- Improvement of degree of precision and durability through 5-axis processing
- Light-weighted & minimum power consumption
- Low abrasion characteristics
- 100% transmission efficiency due to the direct connection to a shaft



Optimized high-efficiency inverter that realizes high performance

- Adoption of a Yaskawa inverter based on advanced energy-saving technology
- Operation of a motor with small electric current
- Reduced electric bills based on automatically maximized efficiency
- Controlled electronic noises and reduced unpleasant noises
- Controlled high frequency based on direct current reactors (Electric current distortion rate 40%)
- Precise and smooth operation
- High efficiency and credibility through 96% or higher rate of control efficiency
- Rapid response to a sudden load change
- KEB(Kinetic Energy Back-up) that realizes rapid and safe deceleration and suspension at a time of power failure.
- Prevention of malfunction at a high temperature based on sensorless technology
- Minimization of leading-in facilities with less than 1% staring current
- 0.3% Unload Power Consumption
- Light-weighted design

Yaskawa Inverter for up to 250HP

VACON Inverter for over 300HP

Cooling System

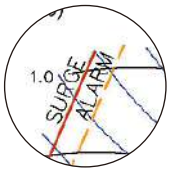
- Suction of outdoor air and cooling-down the motor and parts via self-cooling system
- Perfect air-conditioning system that does not require separate cooling water circulating system

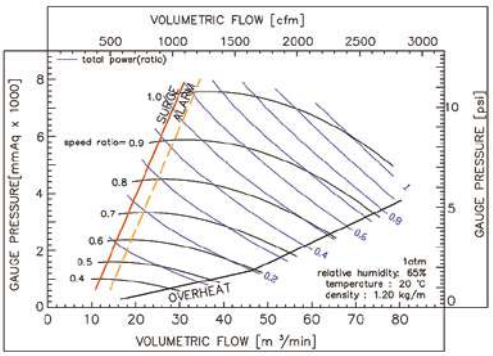
User-friendly graphic control system

- Convenient operation and control based on maintenance of constant pressure, flow or rotation through PLC controller setup
- Realization of remote control via Modbus RTU protocol using RS 485 port
- Convenient real-time monitoring of flow, pressure, temperature and rotation through a LCD display
- Convenient operation through the use of a touch screen
- Multilingual support

Surge preventive data logic

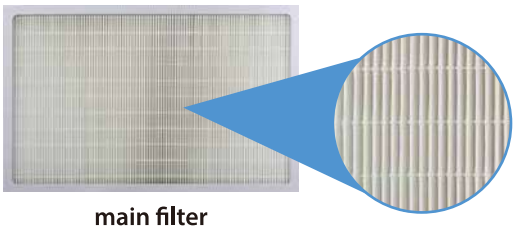
Automatic detection and blockage of surge that might occur at a time of operation of Blower through the use of an installed control program





Filter

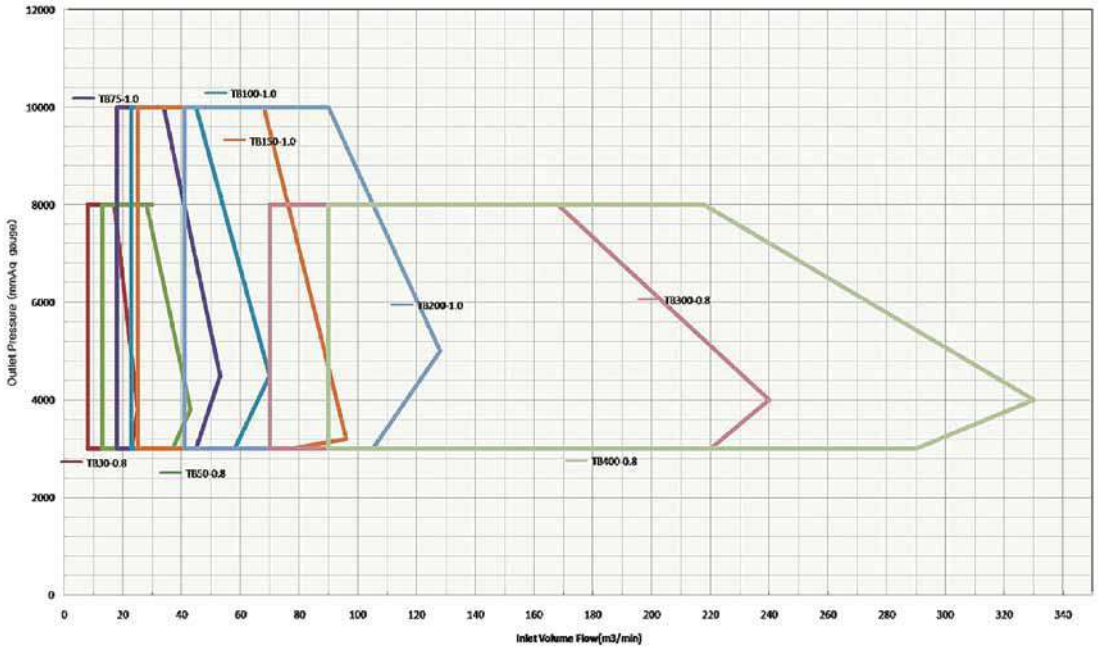
Pre-filter



main filter

- Simple replacement
- Double filter with improved capacity
- Small pressure losses

TB Performance Curve



Performance Standard Table

Condition: 1atm, RH 65%, Temp 20℃, Density 1.20kg/m

Tolerance: ± 5%

MODEL	Flow (m^3/min)	Pressure (mmAq)	Axial Power (HP)	Discharge Gauge (A)	Size(mm)			Weight (kg)	COOLING
					W	D	H		
TB20-0.5	15	5000	20	150	700	1200	1100	600	AIR
TB20-0.6	14	6000							
TB20-0.7	13	7000							
TB30-0.6	21	6000	30	150	700	1200	1000	600	
TB30-0.7	19	7000							
TB30-0.8	18	8000							
TB50-0.6	36	6000	50	150	700	1200	1000	600	
TB50-0.7	31	7000							
TB50-0.8	29	8000							
TB75-0.6	53	6000	75	200	850	1400	1400	720	
TB75-0.7	47	7000							
TB75-0.8	44	8000							
TB75-0.9	38	9000							
TB75-1.0	35	10000							
TB100-0.6	72	6000	100	200	850	1400	1400	750	
TB100-0.7	63	7000							
TB100-0.8	57	8000							
TB100-0.9	52	9000							
TB100-1.0	49	10000							
TB120-0.6	85	6000	120	200	850	1400	1400	750	
TB120-0.7	75	7000							
TB120-0.8	70	8000							
TB120-0.9	63	9000							
TB150-0.6	110	6000	150	300	900	1750	1650	950	
TB150-0.7	94	7000							
TB150-0.8	88	8000							
TB150-0.9	74	9000							
TB150-1.0	72	10000							
TB200-0.6	147	6000	200	300	900	1750	1650	1000	
TB200-0.7	126	7000							
TB200-0.8	114	8000							
TB200-0.9	96	9000							
TB200-1.0	93	10000							
TB250-0.6	170	6000	250	300	900	1750	1650	1000	
TB250-0.7	154	7000							
TB250-0.8	144	8000							
TB250-0.9	110	9000							
TB250-1.0	106	10000							
TB300-0.6	220	6000	300	400	1200	2200	2000	1300	
TB300-0.7	189	7000							
TB300-0.8	176	8000							
TB400-0.6	294	6000	400	400	1800	2500	1910	1500	
TB400-0.7	252	7000							
TB400-0.8	228	8000							
TB600-0.6	441	6000	600	500	2300	2600	2200	2100	
TB600-0.7	378	7000							
TB600-0.8	352	8000							

* The product specification can be changed without notice.
Contact us prior to place an order

Highly efficient energy-saving

Unlike existing roots blowers, Turbo Blower can generate the highest economic effects by using air bearing, serial connection technology, highly efficient impeller and super -speed motors to drastically save energy.
It can also improve the quality of industrial environment based on advanced environmentally friendly facilities, stabilize technology and set workers' mind at rest.

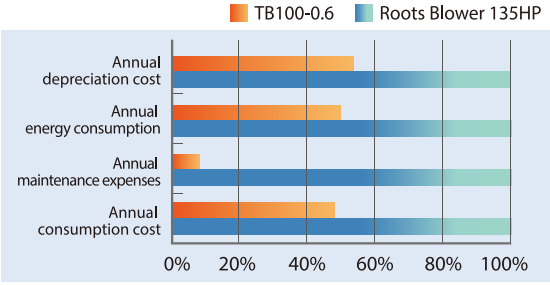
■High Energy Saving

Distinction	Roots Blower 135HP	Multiplying gear-type Speed-increasing multi-stage turbo	TB 100-0.6
			
Principle	Volumetric type	Centrifugal type	Centrifugal type
Power transmission	V-belt	Booster gear	High-speed serial motor
Discharge pressure	0.6 bar	0.6bar	0.6 bar
Discharge flow	70m³/min	70m³/min	70m³/min
Output	102kW	90kW	75kW
Noise (@1m)	95~110 dB	85 dB	Less than 80dB
Vibration	Severe	Some	Non-vibration
Lubricant	Necessary	Necessary	Unnecessary
Useful life	10 years	5 to 10 years	Semi-permanent

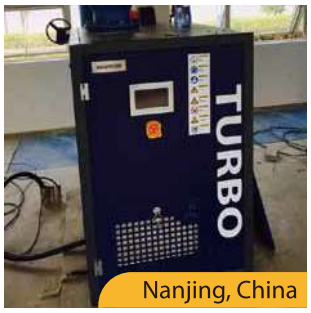
■Comparison of consumption power

Distinction	Roots Blower 135HP	TB100-0.6
Annual depreciation cost	100.0%	53.3%
Annual energy consumption	100.0%	50.0%
Annual maintenance expenses	100.0%	8.3%
Annual consumption cost	100.0%	48.9%

■Comparison of performance



Working Sites



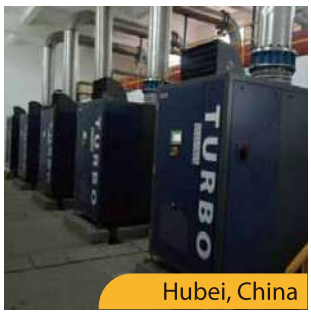
Nanjing, China

Ningxia, China

Yinchuan, China


Zhongshan, China


Gwangyang, Korea



Hubei, China

Shenzhen, China

Wuhan, China


Zhejiang, China

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