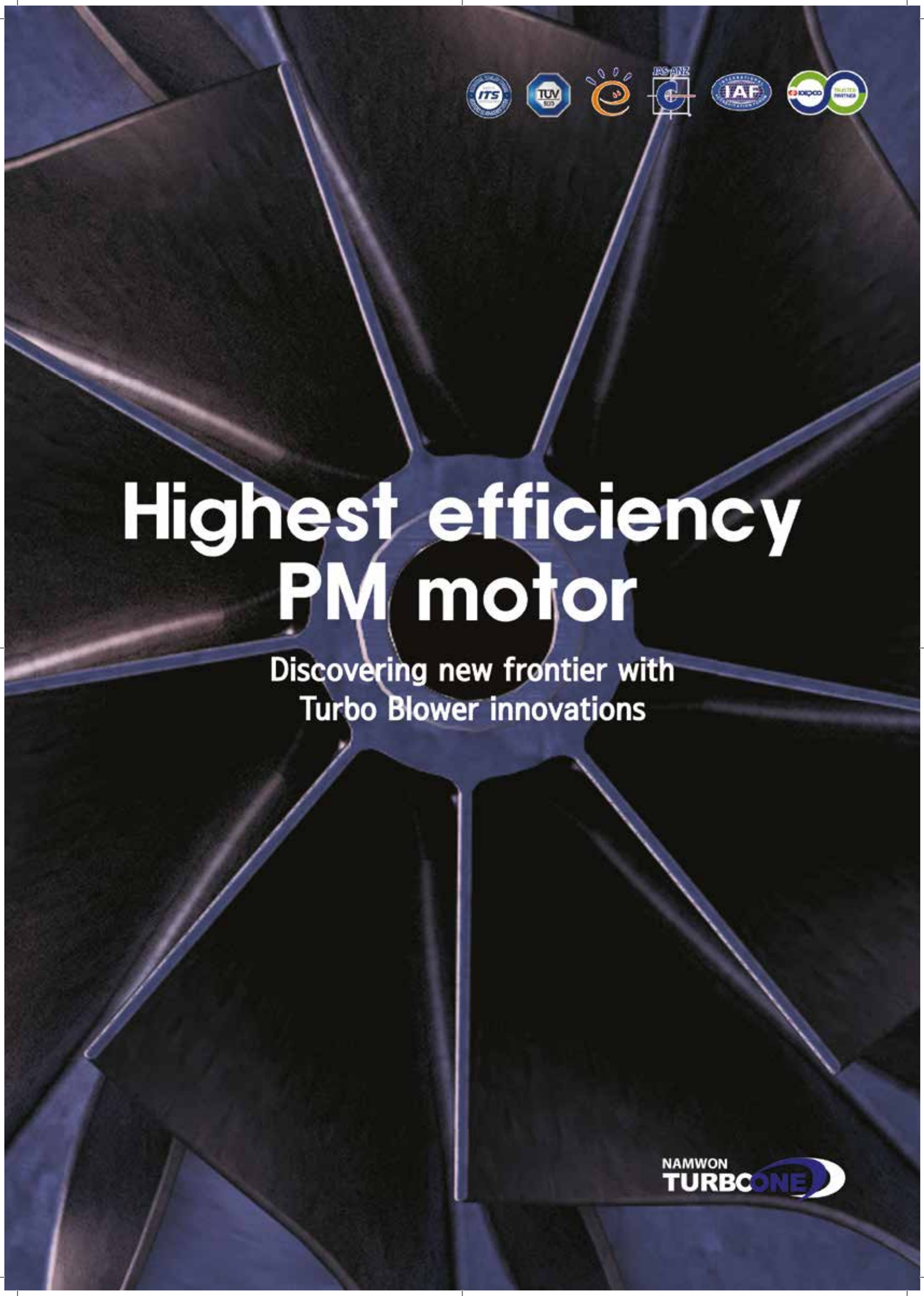

Highest efficiency
PM motor
Discovering new frontier with
Turbo Blower innovations
NAMWON
TURBCONE

Since 1995

History

Oct	1995	· Established Namwon Inc.
Oct	1997	· Awarded the 34th Korea Trade Day $ 10 Million Export Tower
Jul	2003	· Established joint venture company in Beijing, Qingdao, and Taiwan
Mar	2012	· Established full investment corporation (branch office) in Qingdao, China
Sep	2012	· Started production and sales of Namwon Turbo One blowers
Jan	2015	· Established the first manufacturing plant in Hwasun, Chonnam
Apr	2015	· Acquired ISO 9001, 14001 certification
May	2015	· Acquired Company affiliated research institute certification
Jun	2015	· Acquired Venture Business certification
Nov	2015	· Acquired CE certification
Jan	2016	· Acquired High Efficiency Equipment certification
Dec	2016	· Completed the 2nd Manufacturing plant in Naju, Chonnam (Moved headquarters).
Feb	2018	· Certified as a technologically innovative type Innobiz Company
Mar	2018	· Certified as a specialized company for material parts
Apr	2018	· Designated as a Global Hidden Champion
Aug	2018	· 30HP, 50HP, 75HP, 100HP, 150HP, 200HP obtained certification of high efficiency energy using equipment
Oct	2018	· NRTL certification
Dec	2018	· 55th Korea Trade Day awarded a citation from President of South Korea

Certificate


High efficiency appliance


High efficiency appliance


High efficiency appliance


CE


CE


CE


ISO9001


ISO14001


KTP


NRTL


NRTL


NRTL

Namwon Turbo One

is a specialized manufacturer of turbo blowers.
We are researching, developing, producing and selling
the highest performance products by combining the best technology
in each field such as air bearing,
precision machining impeller, ultra high speed high efficiency
permanent magnet motor, high speed control inverter,
automatic control logic and system design.

World's Leading Air-Bearing Turbo Blower Manufacturer

Namwon Turbo One is a specialized manufacturer of high-performance turbo blowers. We develop and incorporate the latest innovations in air bearing, precision machining impeller, high-speed high-efficiency permanent magnet motor, high-speed control inverter, automatic control logic and system design.
Namwon Turbo One is a one-of-a-kind company established in 1995.
Our company is trying to make a foray into the blower market in worldwide and has installed more than 2000 Turbo blowers in 600 regions up until now.

Key Features & Characteristics

Energy-Efficient

- Saves up to 45% of energy relative to comparable blowers
- Acquired a certificate of High Efficiency Energy Using Appliance from Korea Energy Agency

Low Maintenance cost

- Non-lubricating air-foil bearings
- Replacing the suction filter only

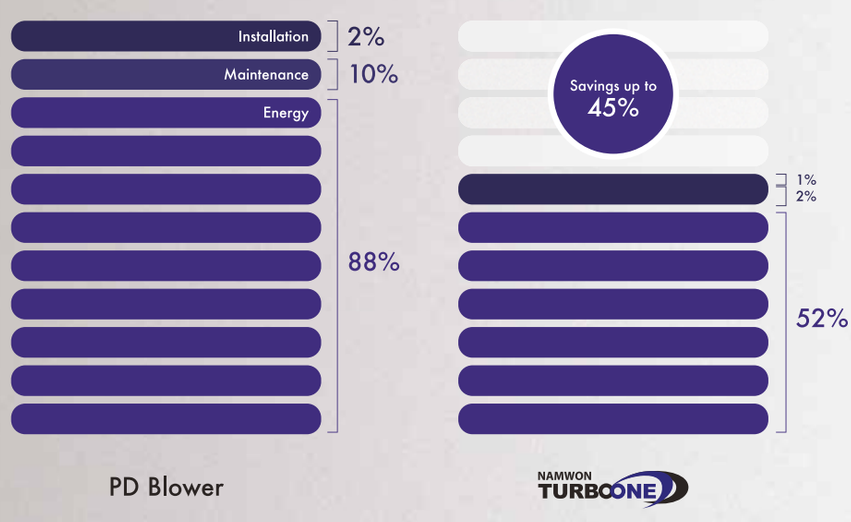
Vibration-Free

- Magnetic levitation shaft allows a vibration-free operation
- 75-80 dB equipment, no need of sound-proof auxiliaries

Compact Size

- The size of our Turbo Blower machine is only one third of PD Blower

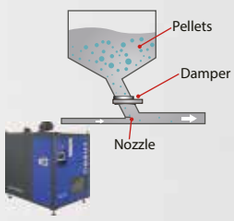
Cost Comparison



Exclusive product with variety of uses

Water treatment facilities

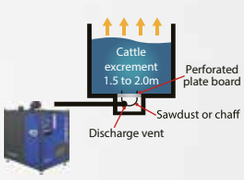
Supply compressed air into water tank to treat waste water, sewage and muck. Dissolve oxygen of waste water (Multiply inorganic substance)



Transfer powder type of materials

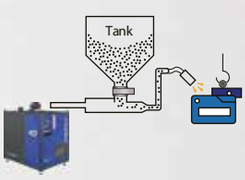
Transfer powder type of materials for cements, chemical ingredients and sugar etc.

Dehumidification, drying & fuel gas desulfurization

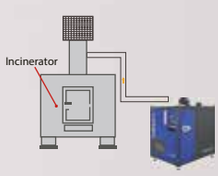


Compositing fermentation

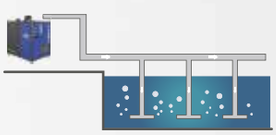
Supply of air to human waste treatment facilities in the agriculture and stockbreeding sectors



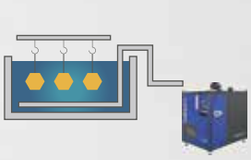
Sand blasting



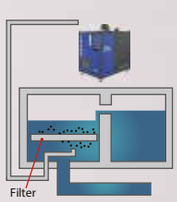
Incinerators



Oxygen supply



Plating bath



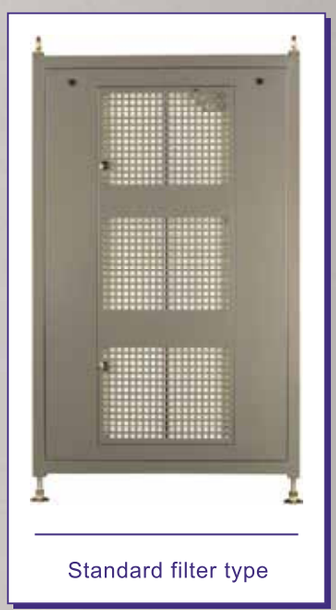
Back washing

Turbo Blower Product Structure

Inverter

HMI

Main Filter



Standard filter type

Inlet flange type

BOV

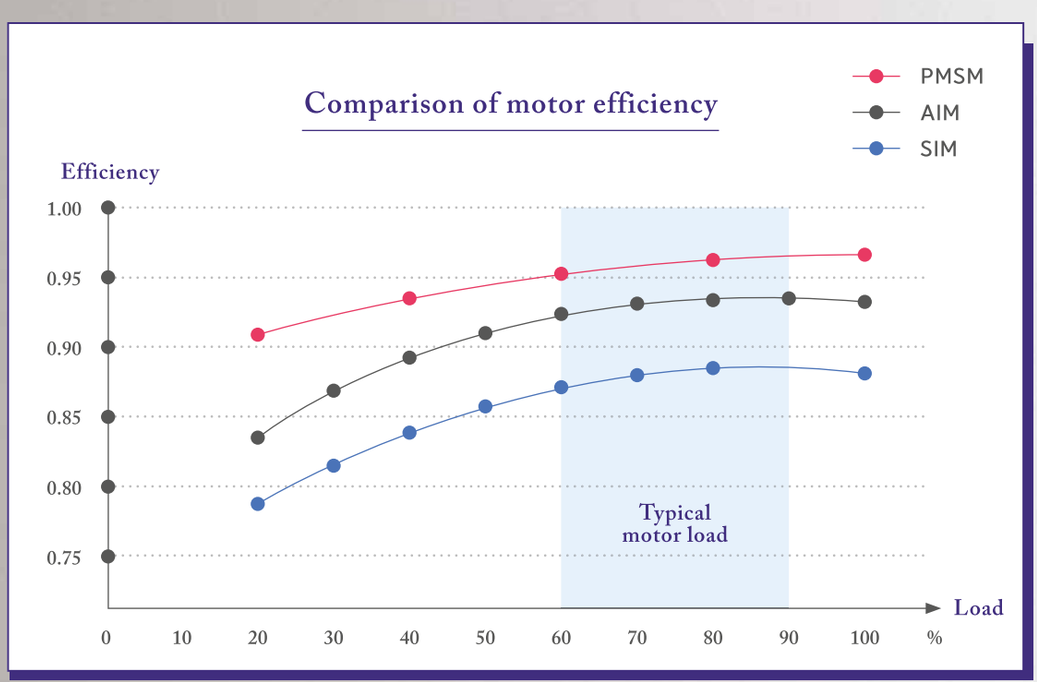
Control panel and
Circuit breaker

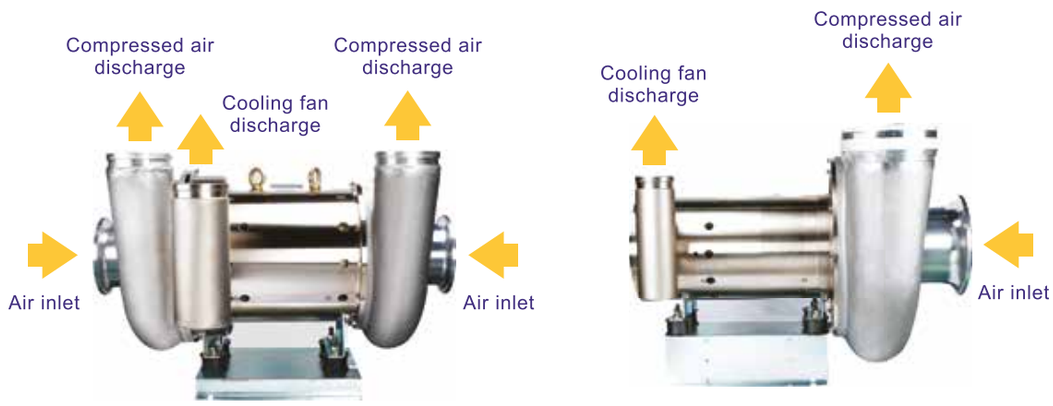
Motor Core+Airend

High-Efficiency, High-Speed Permanent Magnet Motor (PMSM)

TURBO ONE's PMS motors are optimized for high-speed rotation; minimizing current loss and delivering a maximum efficiency of 98%.

- No power loss due to direct drive
- Optimized design for high-speed rotation
- Rotate up to 120,000 RPM via inverter frequency conversion
- Efficient heat radiating structure, compared to other motors
- No need for separate start-up tool since start-up with 4.5% rated current
- No limit start/stop cycles
- High-speed permanent magnet motor is significantly smaller than induction motor
- Accurate speed control





Dual impeller - 300 HP or higher

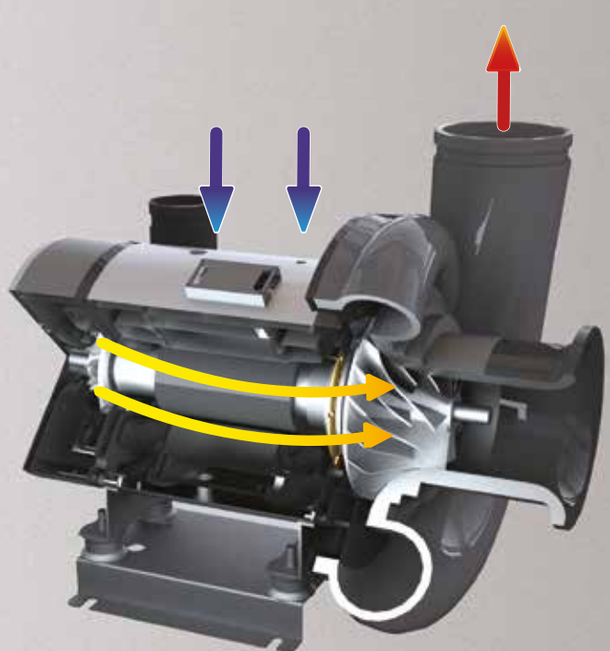
Single impeller – up to 250 HP

Cooling System

· Completely self-cooling system that cools the motor with the sucked outer ambient air by rotating the cooling fan

· Our cooling system does not require a separate power source, unlike the water-cooled type which requires a complex cooling water circulation system (including a pump)

· No maintennce required, including cooling water replenishment and pump management etc.



A complete air bearing turbo blower

Air foil bearing

Non-contact air bearing supports the load of the rotating body by leveraging the compression via the wedge effect around the shaft rotating at a high speed

- Our air bearings are 100% lubricant-free, contactless, and eco-friendly
- No maintenance needed due to proprietary non-lubricant system
- Our special coating reduces frictional wear between the rotor and bearing, providing a stable and long service life

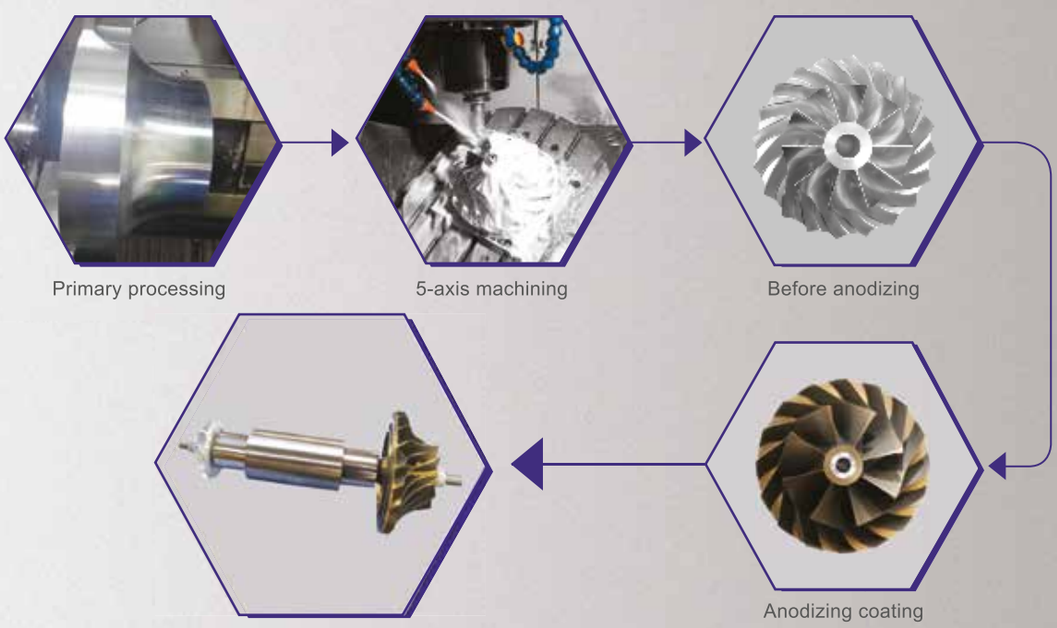
Comparison of bearings

Section			
	Air Foil Bearing	**Tilting Pad Bearing**	**Ball Bearing**
Lubricant	Not required	Required	Required
Durability/Life	Semi-permanent	Semi-permanent	Needs replacement
Maintenance	None	Check once every 5 years	Replace after a certain period of operation
Reliability	20	1	1
System	Simple	Complex oil system (Pump, filter, decompression system, pressure sensor etc.)	

High-efficiency, high-precision machining impeller

Turbo One's impeller is manufactured with state-of-the-art aerodynamic system technology. With the same technology found in aeronautical engineering, our products are sophisticated by design to deliver a highly-efficient and precise processing.

- Precise design ensures wide flow range and surge margin
- Precision machining through 5 axes machining ensures uniform efficiency for every product
- High durability due to the use of high strength heat treated aluminum AL7075
- Anodized coating enhances surface strength
- Direct connection to the shaft minimizes power transmission losses



High efficiency inverter optimized for high-speed rotation motor

High efficiency inverter

- Inverter with state-of-the-art energy saving technology
- Smaller motor start-up current required compared to other inverters
- Reduced electricity rates with automatic maximum efficiency operation
- Smaller noise generation, electronic noise suppression
- DC reactor internally suppresses harmonic level
- Precise operation and smooth start
- High efficiency and reliability with 96% or more control efficiency
- Fast reaction rate even with sudden load fluctuations
- KEB (Kinetic Energy Back-up) function that can decelerate and stop quickly and safely in case of power failure
- Sensor-less technology prevents malfunctions at high temperatures
- Less than 1% starting current- No need of a separate startup control panel
- 0.3% Unload Power Consumption
- Lightweight design

Comparison of Efficiency by Type of Blower

	 Existing roots blower	 Gear type speed-increasin	 Turbo one TB50-0.8
Principle	Volumetric	Centrifugal	Centrifugal Turbo
Power transmission	V-belt	Booster Gear	Direct connection
Discharge pressure	0.8bar	0.8bar	0.8bar
Flow Rate	29m³/min	29m³/min	29m³/min
Power	55kW	48kW	35kW
Noise (@1m)	95-110dB	90dB	Less than 75-78dB
Vibration	Severe	Minor	No Vibration
Lubricant	Required	Required	Not required
Maintenance	Regular and complex	Regular and complex	Very simple (only regular air filter replacement required)

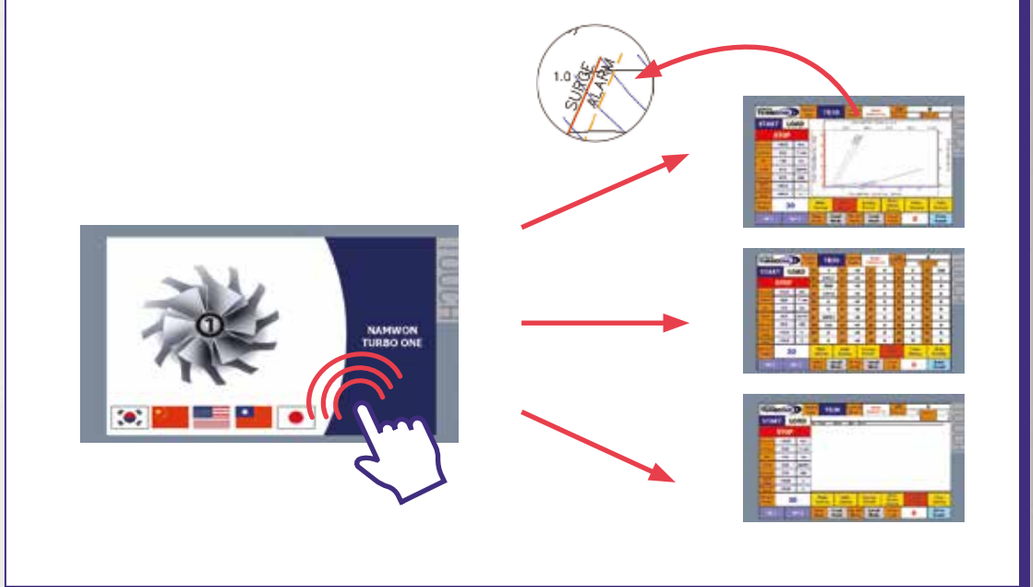
User-friendly control system

Use of premium PLC

- Highly stable, accurate and precise blower control
- Lower rate of malfunction due to noise
- Optimized control logic for high-speed blower allows control operation according to various user's needs in different modes such as constant pressure, constant flow rate, and constant speed
- Realization of remote control by Modbus RTU protocol support via RS485 serial port
- Reduces the possibility of surge that can occur during operation of the blower through surge prevention control logic

Usage of HMI from a system-specialized company

- Real-time monitoring of the information of the blower operation such as flow rate, pressure, temperature, and rotation speed through the LCD display
- touchscreen display allows for easy operations
- Enhanced user convenience with multi-language support



Convenient features of Turbo One's blowers

Simple maintenance

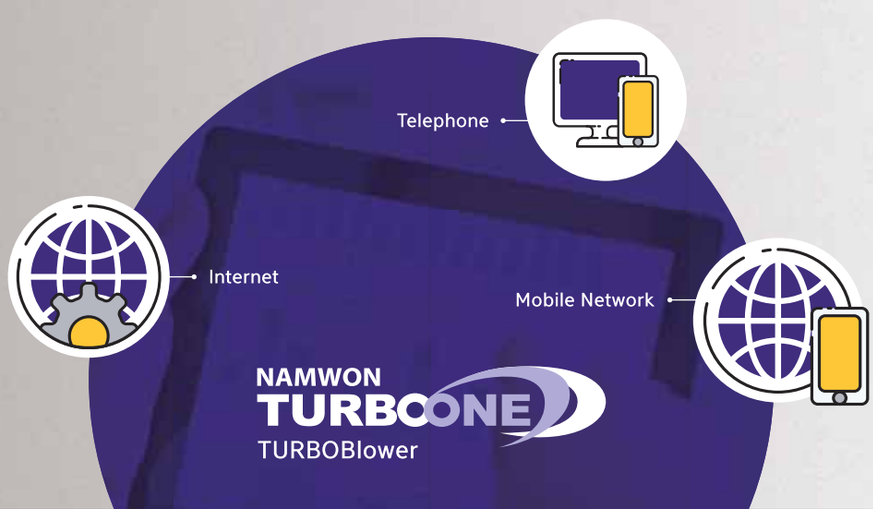
· Periodic maintenance is completed by removing the dirty filter and replacing it with a new one
· Dual filter structure (non-woven pretreatment filter + medium filter) improves compressed air quality
· Low pressure loss due to optimized design of fabrication filter

Low noise low vibration

· The noise of device is as low as 75-80dB at 1m
· No need for soundproofing
· Centrifugal blower with continuous suction and discharge
· The vibration of the product itself is at ZERO level

Convenient remote control

· Real remote control (IIoT) available at anytime and anywhere through various network infra structures including general telephone network, internet, mobile wireless network



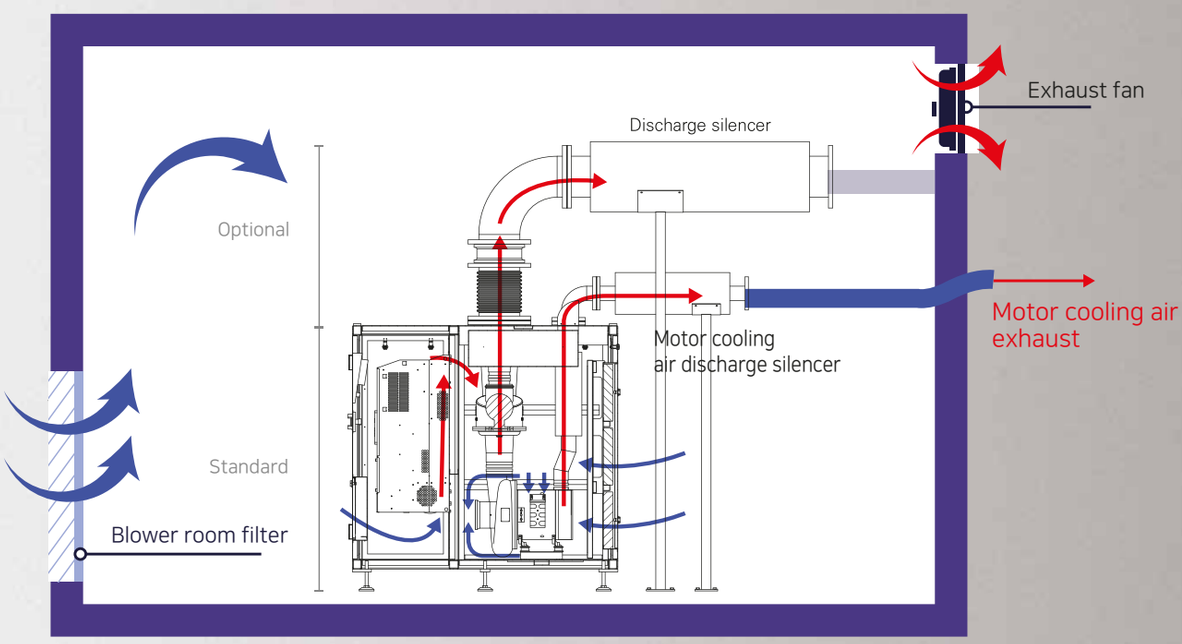
Blower Installation

Plug & Play simple and easy installation

- No anchor or foundation work required due to minimal vibration of our equipment
- Complete the installation simply by placing the blower in the desired location and connect power line and piping
- Easy leveling and installation complete with level foot adjustment at the bottom of the blower

Recommended installation drawing

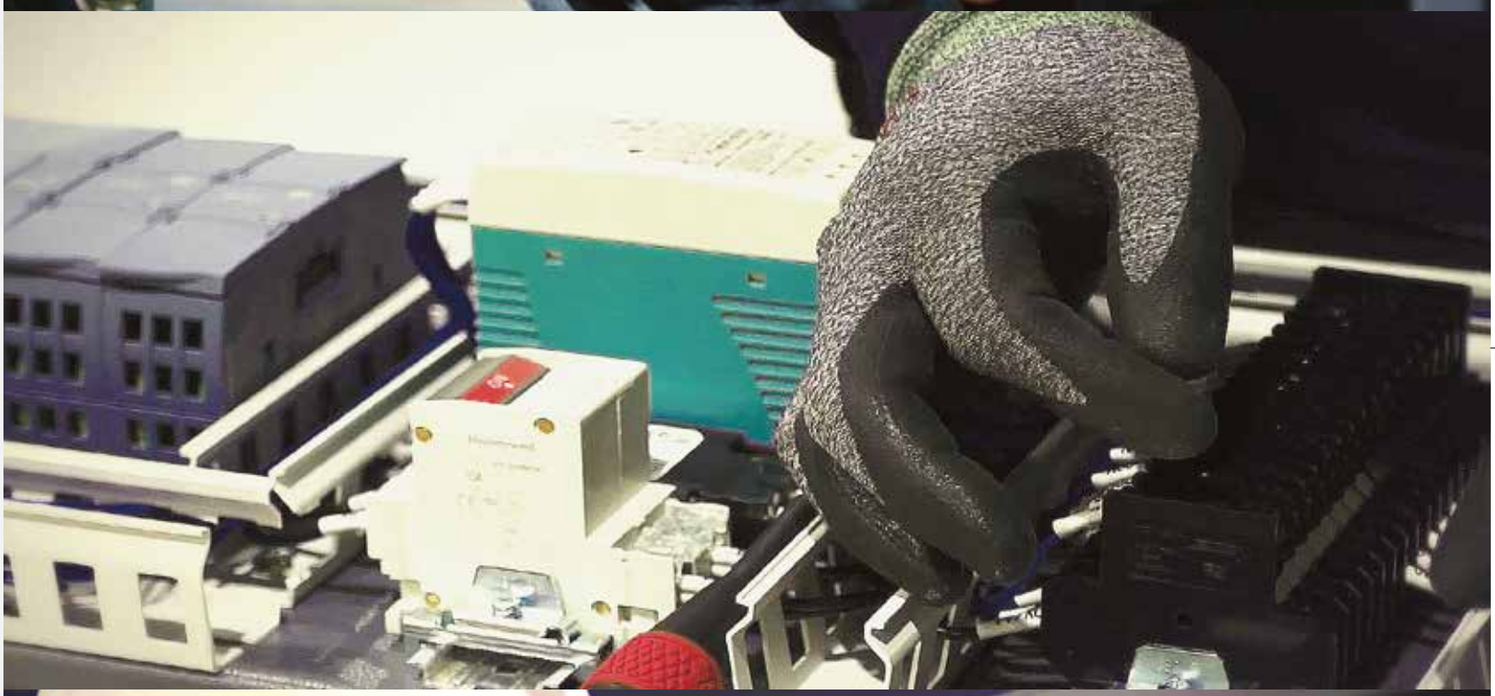
- Ventilation enhancement
- Heat insulation of discharge piping, which causes rise in the blower room temperature
- Exhaust of the motor cooling discharge air out of the motor room
- Order of installing the piping: Flexible joint → Check valve → Elbow → Discharge silencer
- Refer to installation diagram below, installation support axis in exhaust structure



Performance Specification Table

Model Name	Flow	Pressure	Shaft Power	Discharge	Size (mm)			Cooling
	m^3/min	(bar)	(HP)	(A KS 10K)	w	l	h	
TB10	3~8	0.3 ~ 0.8	10	150	700	1200	1120	Air cooled
TB15	5~13	0.3 ~ 0.8	15					
TB20	6~15	0.3 ~ 0.8	20					
TB30	7~25	0.3 ~ 0.8	30					
TB50	10~42	0.3 ~ 0.8	50					
TB75	18~62	0.3 ~ 1.0	75	200	1033	1690	1425	
TB100	23~105	0.3 ~ 1.0	100					
TB125	25~115	0.3 ~ 0.8	125					
TB150	28~130	0.3 ~ 1.0	150	300	1033	2050	1697	
TB200	36~210	0.3 ~ 1.0	200					
TB250	40~235	0.3 ~ 1.0	250					
TB300	80~260	0.3 ~ 1.0	300	400	1263	2260	2187	
TB400	80~275	0.3 ~ 1.0	400	400	1760	2260	2187	
TB500	90~330	0.6 ~ 1.0	500	500	1760	2260	2187	
TB600	100~420	0.6 ~ 1.0	600	500	2150	3600	2187	
TB800	100~520	0.6 ~ 1.0	800	600	2150	3500	2187	
TC100	10~30	1.2 ~ 2.0	100	150	1033	1690	1425	
TC150	12~51	1.2 ~ 2.0	150	200	1033	2050	1697	
TC200	12~76	1.2 ~ 2.0	200	250	1033	2050	1697	
TC300	20~85	1.2 ~ 2.0	300	250	1263	2260	2187	

Production Process



Namwon Turbo One Global Network

Client examples

Ninghai, Shenzhen, China

Hubin, China

Tianjin, China

Indonesia

Malaysia

Chile

Poland


NAMWON TURBOONE
UK
Poland
Spain
Italy
South Korea
Naju-Si
(Headquarter)
Gwangju Metropolitan City
(Second Office)
Hwasun-Gun
(First Plant)
Peru
Chile
Heilongjiang
Jilin
Liaoning
Shanxi
Ningxia
Neimenggu
Xinjiang
Gansu
Hebei
Qinghai
Shandong
Tianjin
Sichuan
Jiangsu
Guizhou
Henan
Yunnan
Hunan
Anhui
Guangxi
Zhejiang
Taiwan
Hubei
India
Hangzhou
(Overseas branch)
Fujian
Jiangxi
Qingdao
(Overseas branch)
Malaysia
Indonesia

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