

*Be the BEST*

# ACE TURBO

ACE TURBO Co., Ltd.

THE WORLD'S BEST TURBO BLOWER



[www.aceturbo.co.kr](http://www.aceturbo.co.kr)

# ACE TURBO IS

## THE WORLD'S BEST TURBO BLOWER.

Turbo blower and turbo compressor manufacturer based on high-speed motor technology.

- Ace produce the best performance products by the best conversing technology based on creative and flexible thinking.
- Ace will be a company that protect the global environment and provide comfort to mankind by producing various products that meet the customer's needs.
- Ace will provide economic benefits to customers with excellent product performance and provide clean and comfortable work environment to users with the customer-oriented product design.



# WHY TURBO BLOWER?

## FEATURES OF TURBO BLOWER.

### • In Economic terms

- It can be recover the initial investement cost within 3 years with high energy efficiency compared to the existing positive displacement blowers.
- Minimizes management cost through simple installation and maintenance.

### • In Enviromental terms

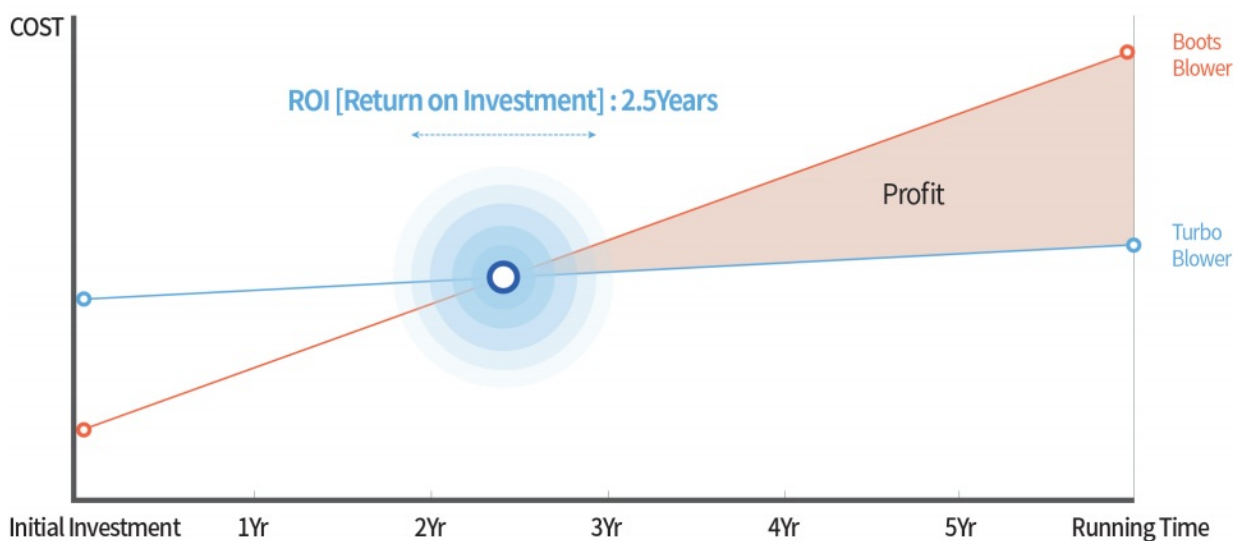
- Vibration and noise are very small, so it can be installed in residential areas.
- Since it is 100% oilless, it is an eco-friendly facility without any environmental pollution caused by oil.
- Due to the small installation area, the space on the site can be used efficiently.

### • In Convenience terms

- It provides optimal operating point depending on the site condition with a wide operation area.
- No need for a separate cooling system because the motor is cooled by suction air.



## ENERGY SAVING.



# TURBO BLOWER

## FEATURE.



### OIL FREE

: Eco friendly



### EASY OPERATION

: User interface



### AIR FOIL BEARING

: Zero friction loss



### ENERGY SAVING

: High efficiency



### DIRECT-COUPLED MOTOR

: Zero transmission loss



### PM SYNCHRONOUS MOTOR

: High efficiency



### VARIABLE CAPACITY

: Variable speed



### PLC CONTROL

: Variable operating mode



### VVVF DRIVE

: Soft start



### LOW NOISE

: Inlet silencer



### LOW VIBRATION

: Non-contact rotation



### MILLED IMPELLER

: High efficiency



### EASY MAINTENANCE

: Oil Free



### EASY INSTALLATION

: Packaged type



### ENCLOSURE TYPE

: Robust



## STRUCTURE.



### 1. TOUCH LCD

- All command inputs and status monitoring required for blower operation, including driving and stopping, can be performed.
- It consists of four screens: MAIN, DATA, MAP, and TRIP

### 3. COOLING AIR SILENCER

- It acts to reduce generated noise when motor cooling air is discharged to the outside.
- It is designed to connect pipes and discharge them directly to the outside if necessary.

### 5. AIR-END

- It consists of a high-speed motor, impeller, and air bearing and makes compressed air.
- It is designed with an optimal cooling structure to secure reliability.

### 2. INVERTER

- It adjusts rotational speed of the motor and the compression unit by changing the frequency according to the command of the controller.
- Additional energy saving is able to by adjusting capacity.

### 4. BLOW-OFF VALVE

- It prevents compressed air from flowing back from the pipe to the Air-End when blower starts and stops.
- It prevents an Air-End from the trip such as surge and overload operation.

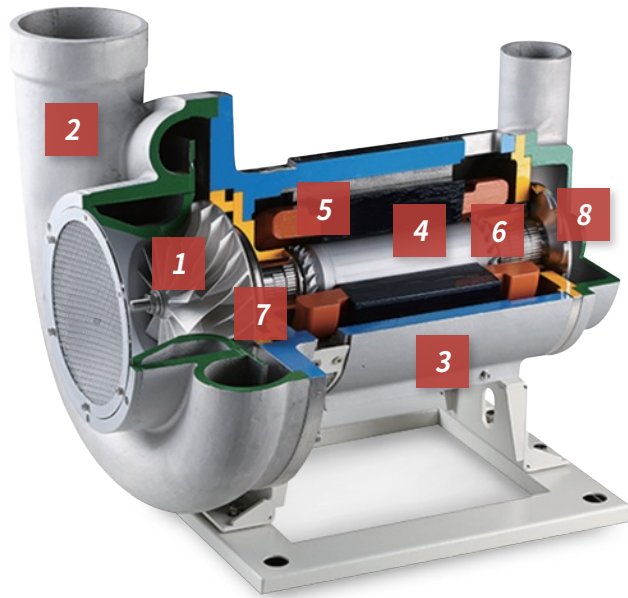
### 6. INLET SILENCER

- It acts to reduce noise emitted to the outside through the suction path in the Air-End.

# AIR-END

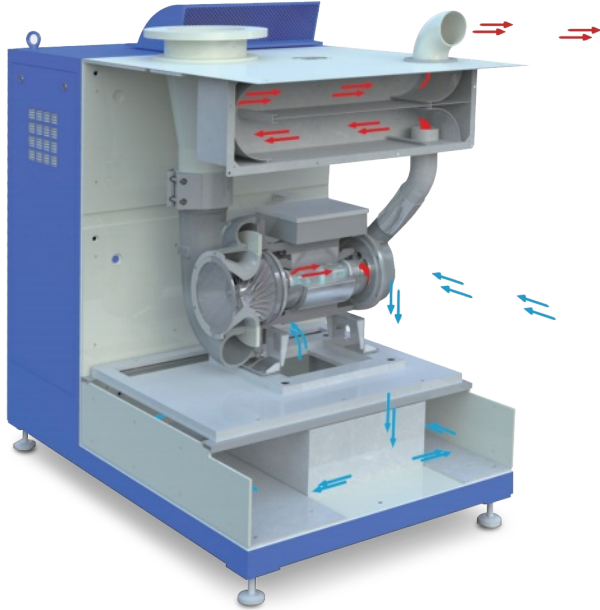
## STRUCTURE.

- 1. Impeller
- 2. Scroll (Volute)
- 3. Body (Motor Case)
- 4. Shaft (Rotor)
- 5. Stator (Winding)
- 6. Journal Bearing
- 7. Thrust Bearing
- 8. Cooling Fan

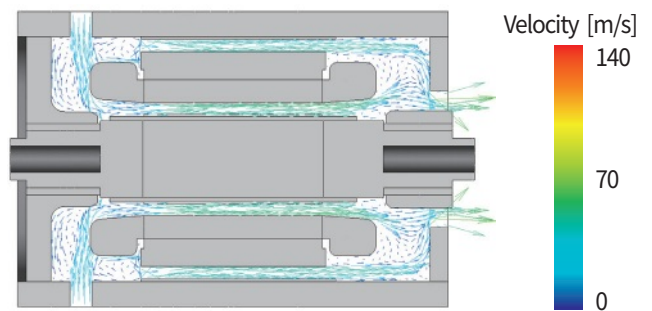


## MOTOR COOLING.

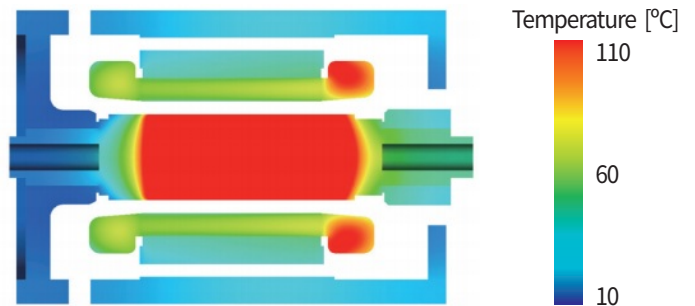
An efficient air flow path system has been established so that cooling air can optimally cool the motor.



< Cooling airflow diagram >



< Temperature distribution >

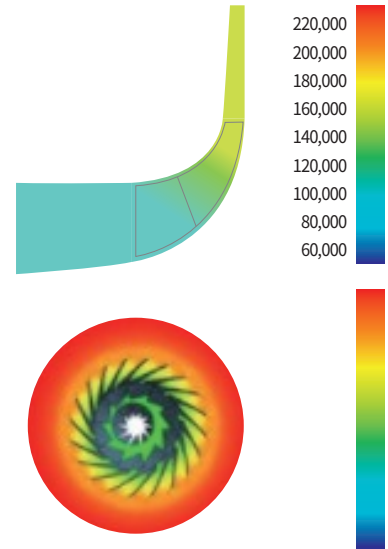


< Flow distribution >

# CORE TECHNOLOGY

## IMPELLER .

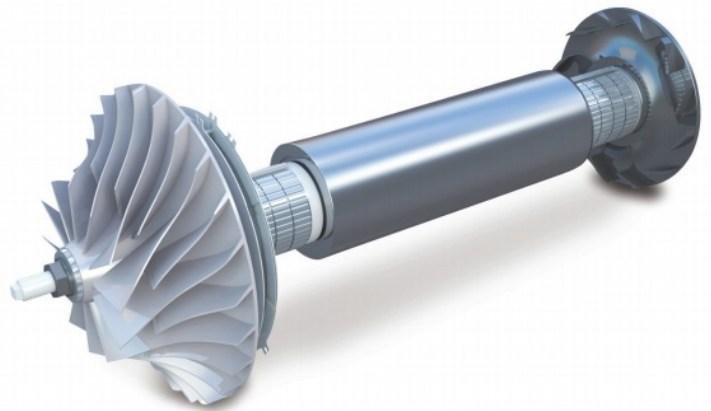
- Forged aluminum is processed directly with a 5-axis machine.
- It provides the best aerodynamic efficiency because the impeller is designed and manufactured according to customer requirements.



<Absolom Total Pressure>

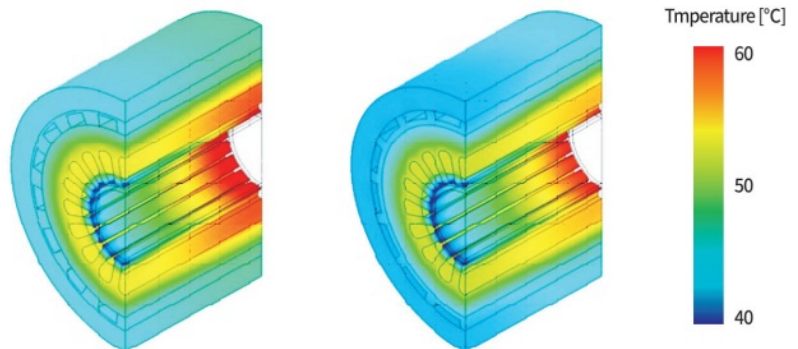
## SHAFT [ROTOR].

- Various rotors are used depending on the site condition.
- The rotor has no power transmission loss because the impeller and the motor cooling fan are directly connected.



## STATOR [WINDING].

- It is designed to minimize iron loss.
- The air flow by the cooling fan was accurately predicted and the cooling performance was improved.
- High efficiency and quality stability of the stator were secured.



< Present Model >

< Alternative Model >

# BEARING

ACE TURBO has secured the quality stability of Turbo Blower by producing reliable air bearing with its own structure and coating technology.

## THRUST & JOURNAL BEARING.

- It consists of two Thrust Bearing and two Journal Bearing.



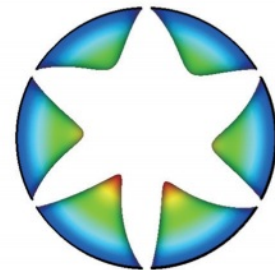
< Thrust Bearing >



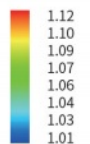
< Journal Bearing >

## MULTI-LEAF BUMP TYPE.

- During startup, wear caused by solid contact between the rotating shaft and the top foil was mitigated to improve lifespan.
- It is designed to have excellent high-speed safety by increasing rigidity and attenuation by more than 30%.



[Pressure]



< Multi-Leaf Bearing >

## DOUBLE-LAYER TEFLON COATING.

- Double-layer Teflon Coating was developed to improve the wear resistance and adhesion of the coating.



< Inconel >

< Embossing Forming >

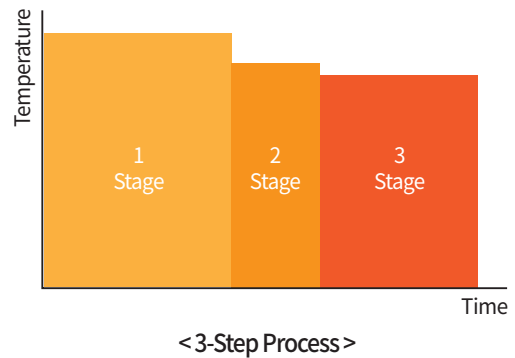
< Cu + Carbon mixture >

< Teflon Coating >



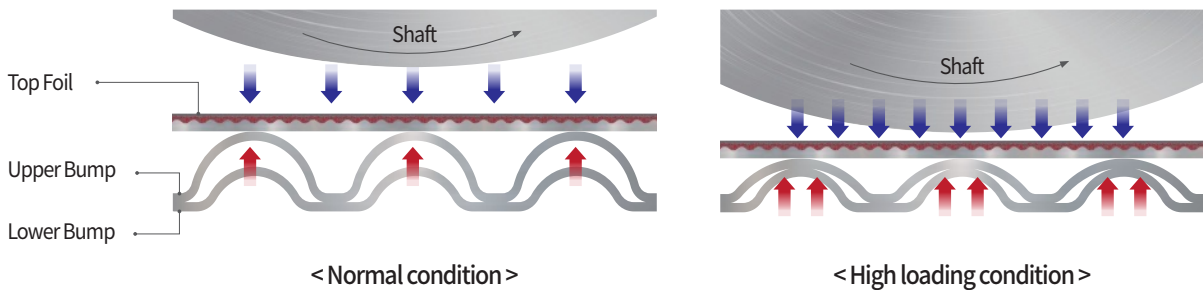
## 3-STEP HEAT TREATMENT .

- In order to improve the rigidity and tensile strength of the bearing, we developed our own three-step heat treatment process by adding a loosening process.
- According to this process, Inconel material was heat treated to improve the reliability of bearing.



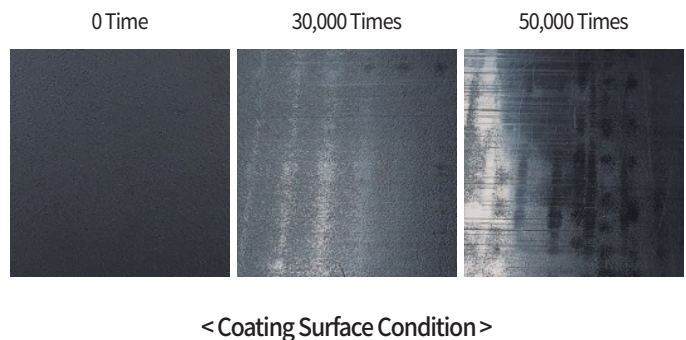
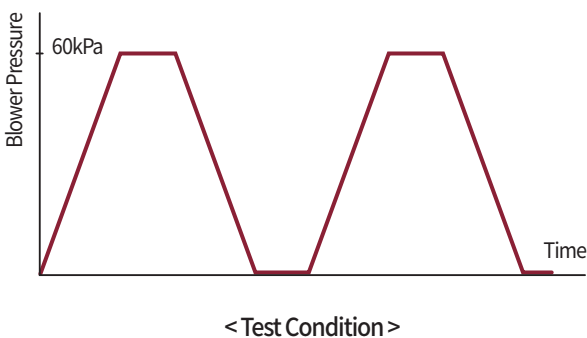
## DOUBLE-BUMP STRUCTURE .

- It is designed in the structure of one top two bump foil.
- The reliability of the product has been improved by preventing the deformation of bearing despite rapid load fluctuations.



## RELIABILITY TEST .

- The wear resistance of the coating was continuously confirmed through a reliability test that reproduced the harsh conditions.
- More than 50,000 on/off tests can guarantee durability for more than 10 years.



# USER INTERFACE

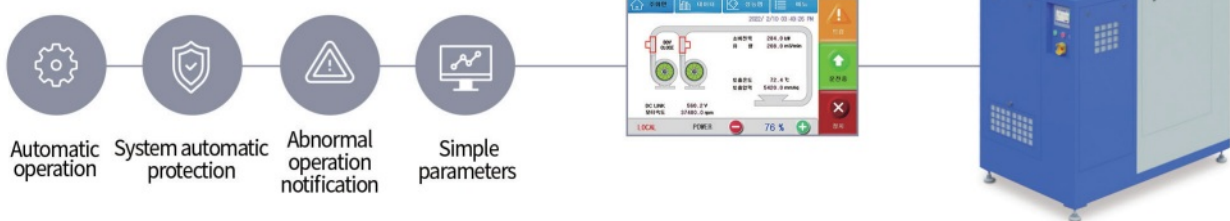
## COMMUNICATION PROTOCOL

- The application of the common protocol (Modbus) has promoted user convenience.
- Various protocols (Profibus, Ethernet, etc.) can respond to customer requests with separate option configurations.



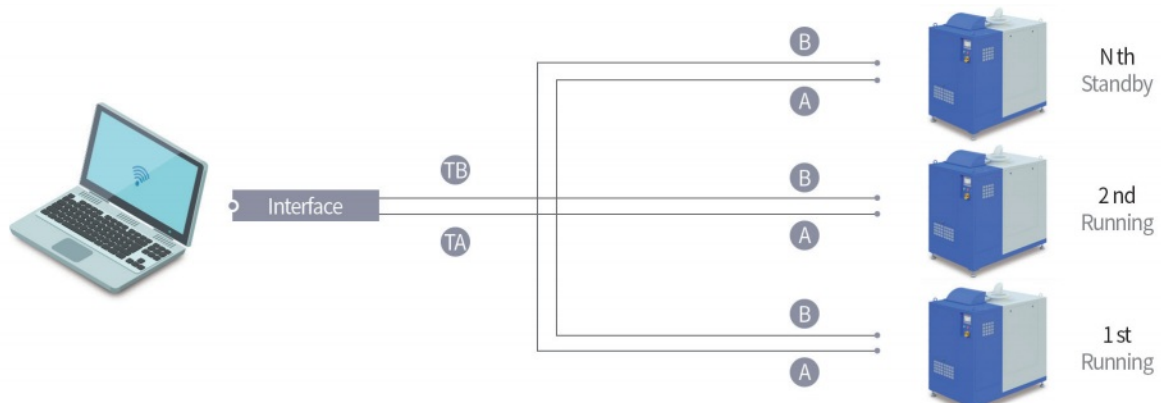
## USER CONVENIENCE

- Best active surveillance control function by hiring an easy-to-understand and convenient interface for users.
- Stable operation of the product by applying the high-resolution color touch screen.
- Three separate switches are adopted for emergency situations and applied them to enable rapid product operation.



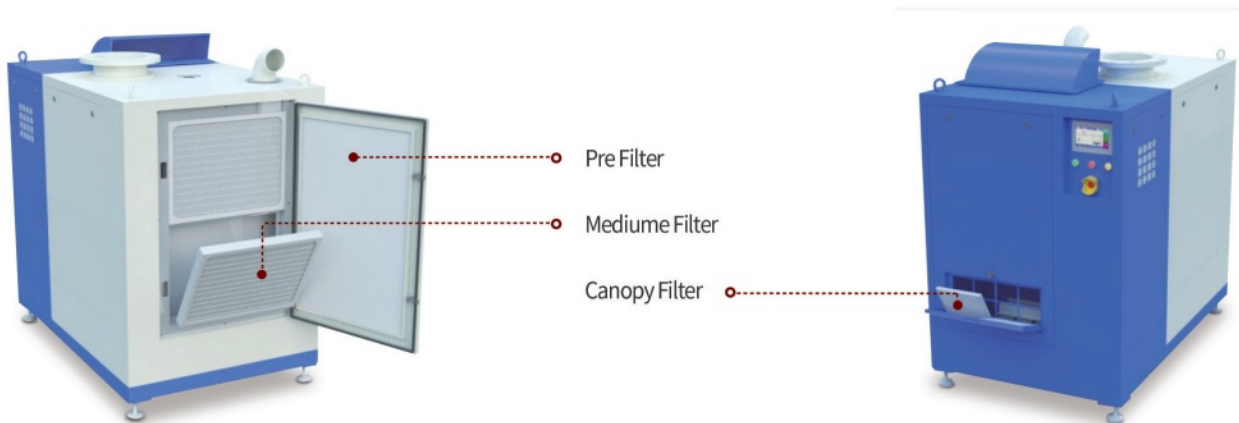
## THE BEST CONTROL SYSTEM

- With the optimal control system configuration, precise speed control by inverter algorithm has implemented.
- Various driving modes are provided to meet the requirements of product users to actively respond to changes in the field environment.
- As an option, we provide stable product operation by supporting integrated operation and monitoring control.



# SIMPLE MAINTENANCE

## CHANGE THE FILTER



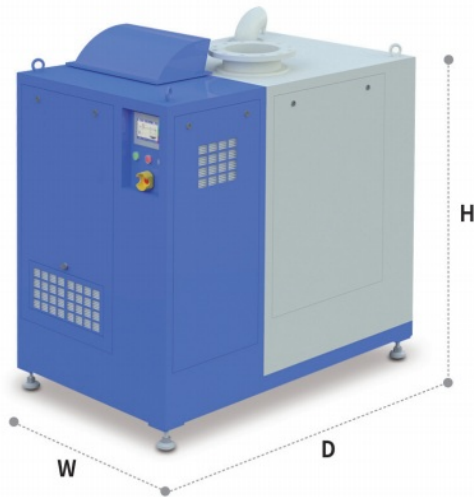
Change Filter cycle		Medium Filter	Pre Filter	Canopy Filter
Normal environment	Cleaning	3 M	1 M	3 M
	Exchange	6 M	3 M	6 M
Dusty environment	Cleaning	2 M	0.5 M	2 M
	Exchange	4 M	2 M	4 M
Material	Polyester	Spun Bounded Non-woven	Non-woven	Spun Bounded Non-woven
Specification	Particle Size	5.0 micron	5.0 micron	5.0 micron
	Efficiency	91.2%	71.00%	87.00%

## REPLACEMENT OF PART

- Parts were arranged so that the user could easily check the parts and provide an optimal space convenient for site maintenance.
- In particular, the Control Panel is designed to be concise and structured to have excellent performance and long lifespan.



# SPEC SHEET



## ATB100-06 [-special option]

- ①
- ②
- ③
- ④
- ⑤

- ① Ace Turbo
- ② B : Blower, C : Compressor
- ③ Shaft Power (HP)
- ④ Discharge Pressure (mmAq)
  - 06:6,000 •08:8,000 •10:10,000
- ⑤ Special Model
  - Except Standard Blower (380/440V, 3P, 50/60Hz, BOV)

Hp kPa/SCMM	10	20	30	50	75	100	125	150	200	250	300	350	400	500	600	700
60	7.3	14.5	23.0	36	51	74	89	104	129	173	194	236	271	340	389	466
80	5.2	11.1	17.7	28	37	57	73	86	101	141	157	183	225	279	310	361
100				22	31	47	57	69	83	112	129	153	176	222	254	302
120					28	37	50	60	70	94	109	128	149	183	215	253
Discharge(A)	80	150	150	150	200	250	250	250	300	350	350	350	400	500	500	500

### IP 54 Enclosure

Weight (kg)	390	415	510	540	600	910	920	930	950	1,400	1,480	1,500	2,200	3,700	3,860	3,900
Size (mm)	W	800	800	800	800	920	1,020	1,020	1,020	1,020	1,300	1,300	1,300	1,700	1,800	1,800
	D	1,200	1,200	1,200	1,200	1,450	1,700	1,700	1,700	1,700	2,000	2,000	2,000	2,500	3,500	3,500
	H	1,350	1,350	1,350	1,350	1,500	1,900	1,900	1,900	1,900	1,900	1,900	1,900	2,040	2,200	2,200
Noise(dBA)	73	73	73	73	73	75	75	78	78	83	83	83	85	85	85	85

### IP 55 Enclosure

Weight (kg)	480	500	600	630	770	1,180	1,190	1,200	1,220	1,720	1,800	1,820	2,520	4,020	1,480	4,220
Size (mm)	W	900	900	900	900	1,100	1,300	1,300	1,300	1,300	1,600	1,600	1,600	1,700	1,800	1,800
	D	1,250	1,250	1,250	1,250	1,600	1,850	1,850	1,850	1,850	2,200	2,200	2,200	2,800	3,500	3,500
	H	1,400	1,400	1,400	1,400	1,800	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,040	2,200	2,200

※ If you request a separate option, the size can be changed

# MODEL LINE UP

ACE have lined up products of various capacities ranging from 10Hp to 700Hp.  
In addition to the basic model (Single Core, Double Core), ACE produce various types of products that consider various installation ways and inlet conditions according to the requirements of the site and customer to realize customer satisfaction.

## STANDARD TYPE.



< Single Core Model >



< Double Core Model >

## INSTALLATION CONDITIONS.



< Separate Installation : Inverter separation type >



< IP55 : Outdoor waterproof type >

## INLET CONDITIONS.



< Standard : Open louver type >



< Duct Inlet : Flange type >



< Direct Suction : Pipe type >

※ For other special specifications, contact separately

# INSTALLATION

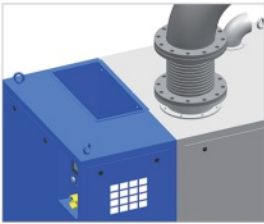
## INSTALLATION MAP

### ELBOW PIPE

: Part for changing the installation direction

### INVERTER COOLING AIR OUTLET

: Cooling air can be discharged outside by connecting it to a separate duct



### CHECK VALVE

: Parts to prevent backflow from the site to the blower

### SILENCER

: Parts for reducing the noise of discharged air

### MOTOR COOLING AIR OUTLET

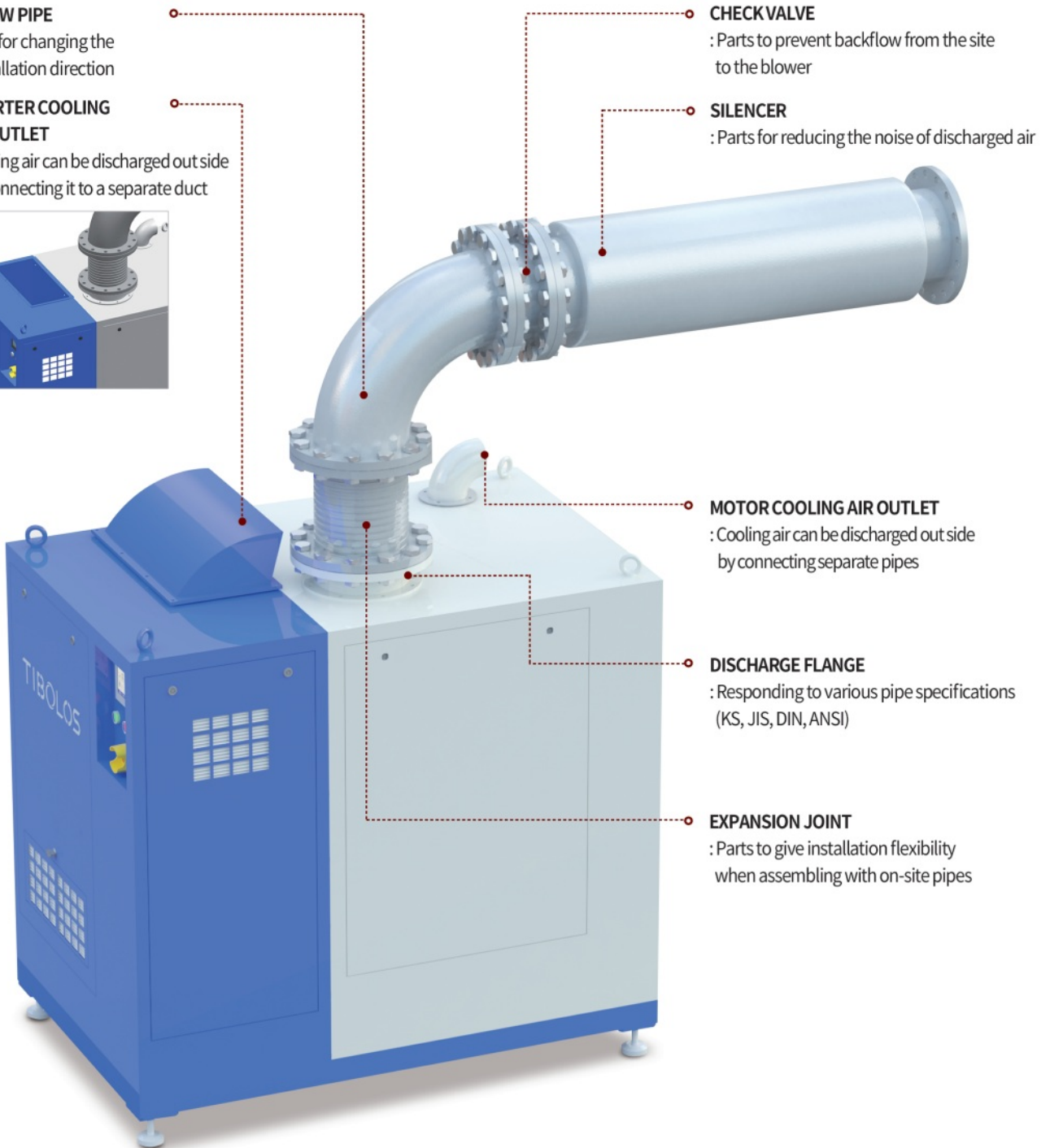
: Cooling air can be discharged outside by connecting separate pipes

### DISCHARGE FLANGE

: Responding to various pipe specifications (KS, JIS, DIN, ANSI)

### EXPANSION JOINT

: Parts to give installation flexibility when assembling with on-site pipes



# APPLICATION | REFERENCE

## APPLICATION.



Aeration  
in **sewage treatment plant**



Conveying pellets  
in **chemical factory**



Conveying raw materials  
in **cement factory**



Oxygen supply  
to **power plant**

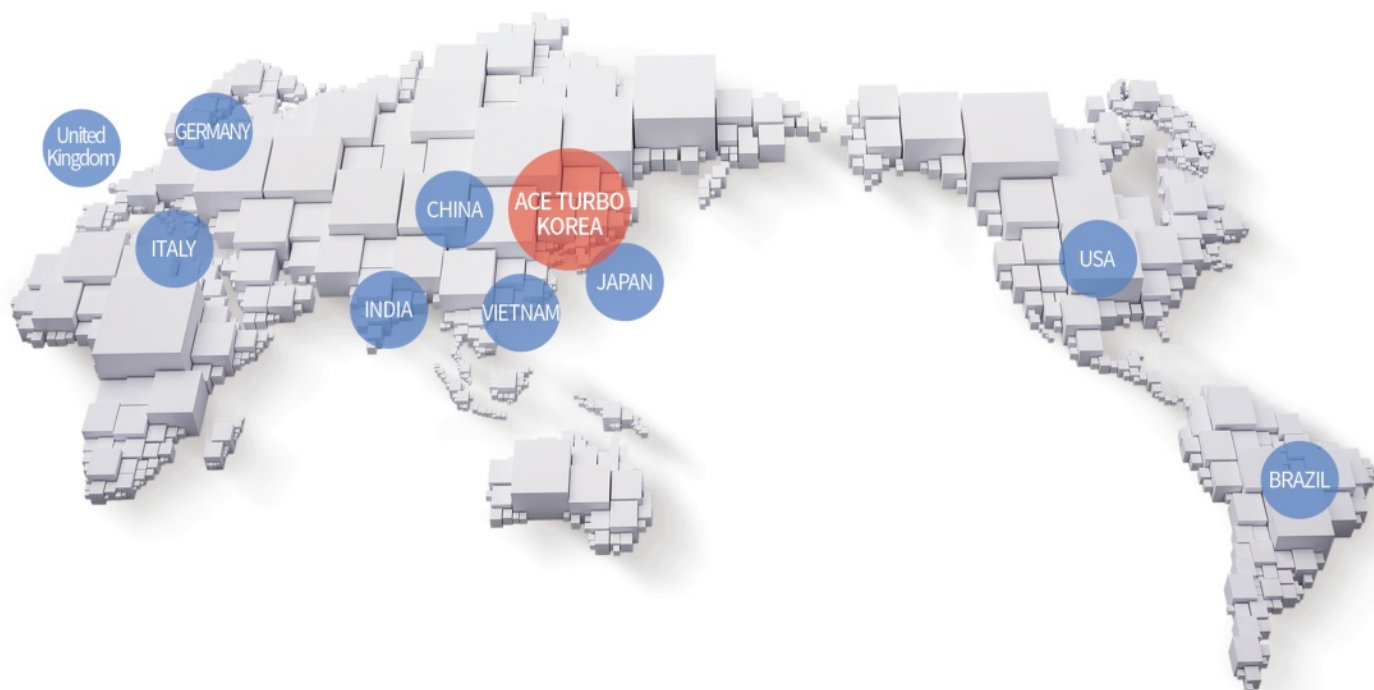
## GLOBAL REFERENCE.

Ace blower are used in the sewage treatment plant and other industrial process sites over the world and will also enter the fuel cell compressor.



*Be the BEST*

# GLOBAL SALES AND SERVICE



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