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TURBOWIN

TURBO BLOWER AND COMPRESSOR

INNOVATION OF TURBO TECHNOLOGY
FOR BLOWER INDUSTRY
BEYOND IMAGINATION

*HIGH SPEED MOTOR
CONTACTLESS AIR BEARING
VARIABLE SPEED AND DIRECT DRIVING*

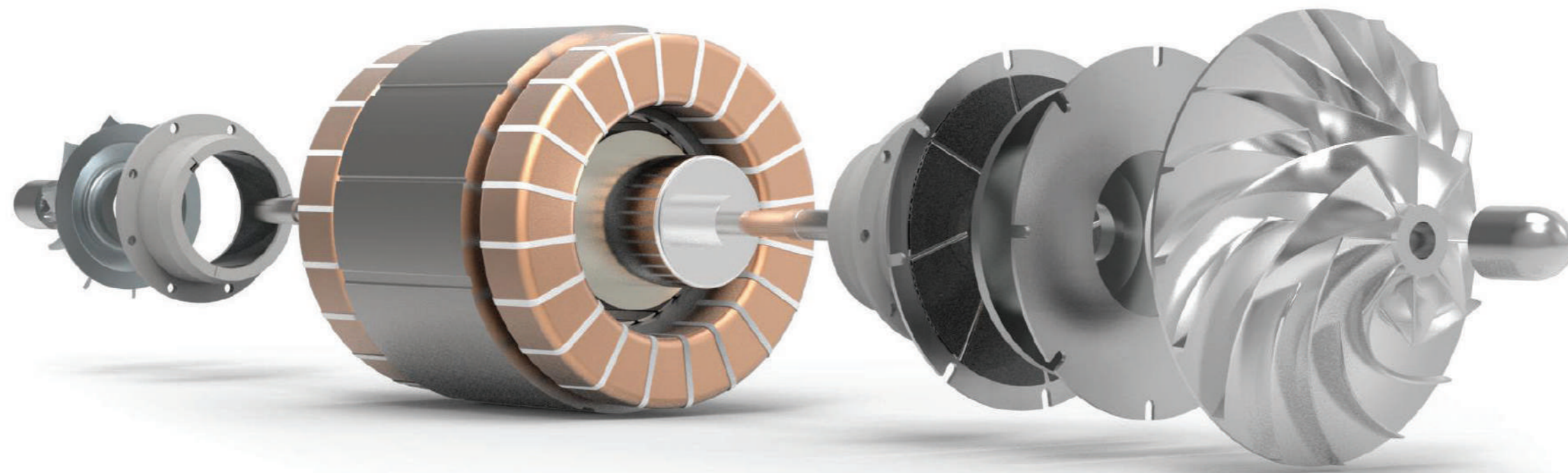


TURBOWIN

WITH THE WORLD'S TOP INNOVATORS AND EXPERTS IN TURBOMACHINERY TECHNOLOGY, TURBOWIN GUARANTEES BOTH OUTSTANDING EFFICIENCY AND STRONG CONFIDENCE IN MEETING YOUR AIR SUPPLY REQUIREMENTS.

A group of experts, dedicated to developing turbo machinery for more than 20 years, leads and manages Turbowin. The company expands the horizon of next-generation environmental industry with direct-coupled and eco-friendly turbo technology. Our products utilize highly efficient energy saving oil-less Air Foil Bearing technology. Turbowin's diverse product portfolio will provide the best solution for your municipal or industrial air supply needs.

Our turbo machines are a harmonization of extensive R&D experiences and ingenious patented technology. We serve more than 2 billion people in more than 70 countries around the world.



The above illustration shows the primary internal components of Turbowin Core, including the PM Motor, Air Foil Bearing and Impeller.

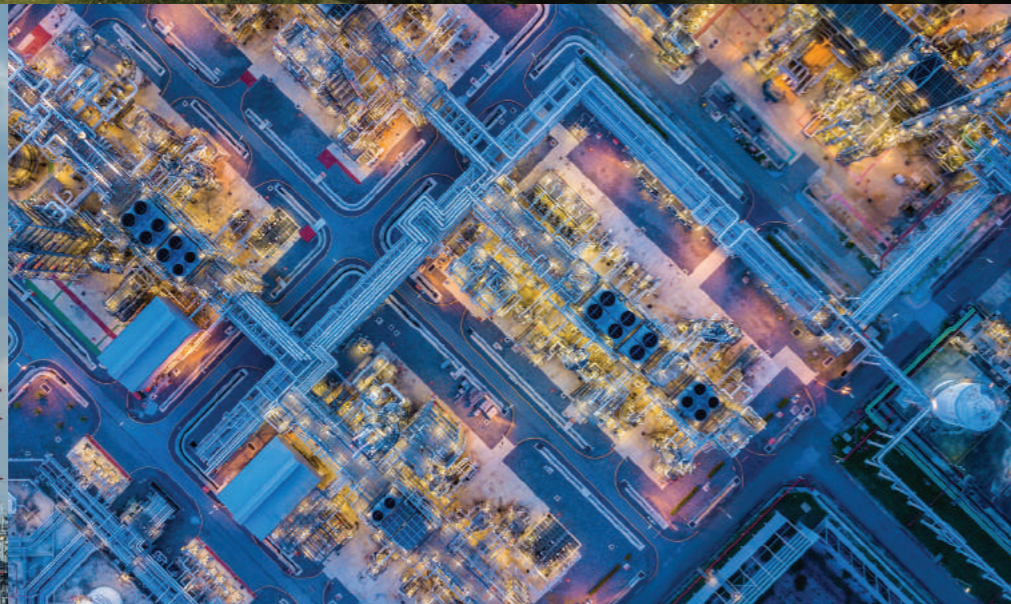
Certifications, Patents and Awards

Domestic Certifications	26
International Certifications	17
Domestic & International Patents	42
Awards	10

NO MATTER WHERE IT NEEDS

DIVERSE

Key Application Areas



WATER

Sewage / Wastewater Treatment Plant

Aeration blowers associated with the biological treatment of effluent within municipal sewage treatment plants

Downstream Control

Bioactive Response System (BARS) is a Fully-automated, highly efficient control system that optimizes the operation of aeration turbo blowers

POWER

Circulating Fluidized Bed Combustion

Blowers providing fluidizing air within the loop seal system on a circulating fluidized bed

Flue Gas Desulphurization

Oxidation air blowers associated with the cleaning of flue gases produced within power and heavy industrial plants

MINING

Iron Production

Blast furnace air blowers for reaction (hot blast) and combustion air applications

Metal Refining

Aeration, oxidation and combustion air blowers for biological and conversion processes

Metal Smelting

Oxidation air blowers for smelting processes

PETROCHEMICAL / REFINING

Fertilizer Production

Blowers / Compressors providing atomizing air for fertilized bed

Sulphur Recovery Units

Blowers/compressors providing reaction air for the catalytic recovery of Sulphur within refineries and gas processing facilities

INDUSTRIAL

Carbon Black

Blowers providing combustion air for the associated furnaces

Effluent Treatment

Aeration blowers associated with the biological treatment of effluent within industrial plants

Fermentation

Air blowers associated with biochemical fermentation within pharmaceutical and yeast production markets

Mechanical Vapor Recompression

Air blowers used to recompress vapor generated during an evaporation process so that it can be used as the heating medium for the same evaporation process

LOOK AT THESE INCREDIBLE RESULTS:

UNBELIEVABLE

Reduce your energy costs and Save Your Precious \$\$\$

57%

ENERGY REDUCTION

Project	Unit	Roots	Turbo Blower	Efficiency	Energy Saving	
Expectation	KW	132	93	39	33.7	29.5%
Real Value	A	127	54	73	53.2	57.5%

Customer	AUO
Location	Hsinchu Science Park, Hsinchu City 30078, Taiwan, R.O.C.
Application	Wastewater treatment
Model	125 HP 0.6Bar
Units	1 unit
Commissioning	October 14th, 2019

- | Low Vibration Under 1.0 mm/s
- | Low Noise Under 80dB ± 3dB
- | Only air filter changes required



AUO, Taiwan, R.O.C.

OVERWHELMING

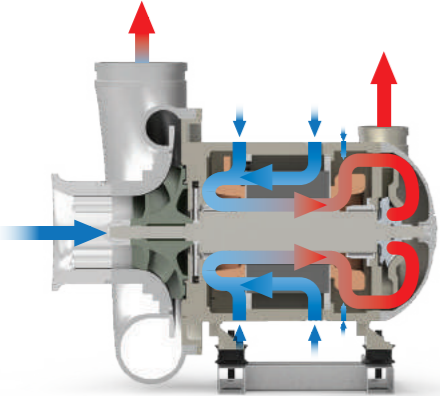
Core of Excellence



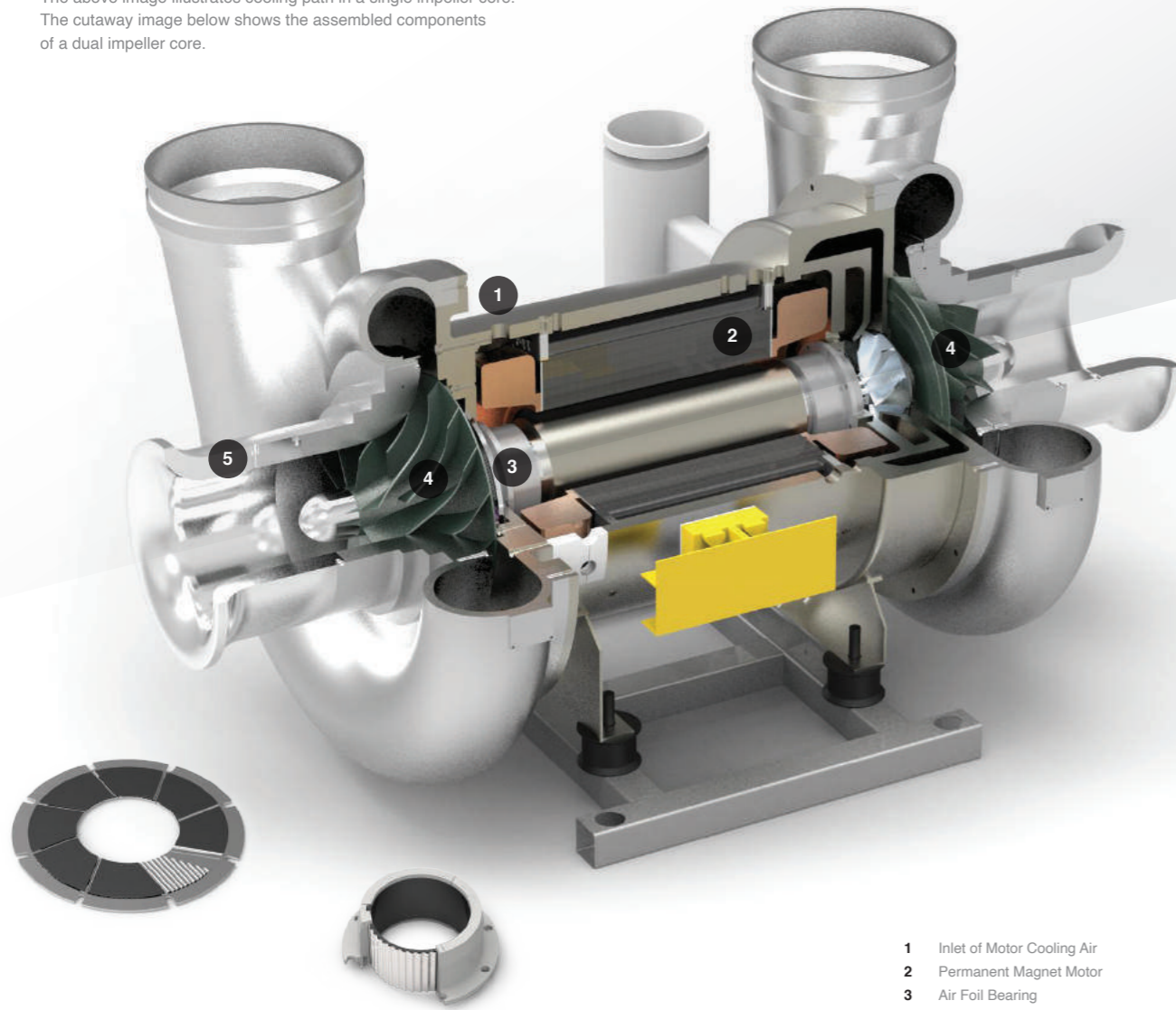
1

MOTOR COOLING SYSTEM PATENT # : 10-1580877 / 10-1607492

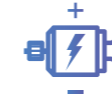
Turbowin's motor cooling system has a patented two-stage cooling structure that can lower the motor temperature more than 10 degrees compared to other brands. The air cools stator, bearing, winding and rotor. The heated air is exhausted outside of the enclosure.



The above image illustrates cooling path in a single impeller core. The cutaway image below shows the assembled components of a dual impeller core.



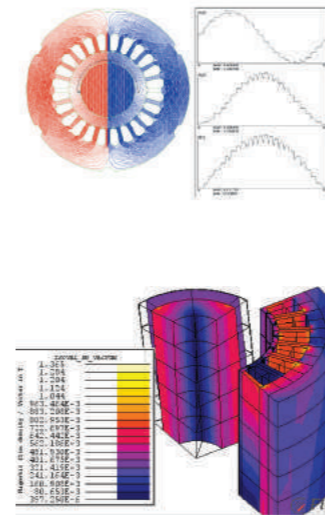
- 1 Inlet of Motor Cooling Air
- 2 Permanent Magnet Motor
- 3 Air Foil Bearing
- 4 Impeller
- 5 Parameter Sensing System



2

HIGH EFFICIENT PERMANENT MAGNET MOTOR

Turbowin PM motor is a high efficient (95%), self-designed and manufactured product, which can perform at ultra-high speed ranging from 20,000 to 150,000 RPM.



4

AIR FOIL BEARING PATENT # : 10-1632356 / 30-0858674

The frictionless characteristic of our oil-less air foil bearing makes it extremely durable. Our bearing has passed On/Off testing of over 100,000 cycles.



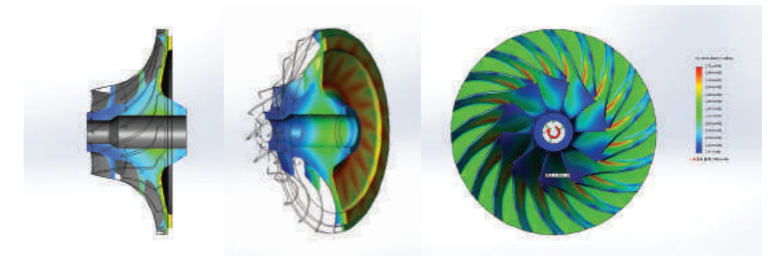
The image on the left shows air foil bearing's physical condition after 100,000 times of on/off tests.



3

HIGH PERFORMANCE IMPELLER

Turbowin's impeller is an in-house designed and manufactured product. It guarantees high-efficiency with same quality all the times. It is made of high strength aluminum alloy (AL7075-T651) that is precisely processed up to 0.001mm thickness. Our impeller with hard anodizing on the surface has an excellent corrosion and chemical resistance, so it has an excellent performance in hostile environments. Turbowin also provide stainless steel and titanium impellers.



5

ON-MACHINE REAL TIME PARAMETER MEASUREMENT PATENT # : C-2016-006451

The control system, which measures pressure, temperature, and flow rate in real time, controls the VFD and BOV quickly and precisely. Our bell-mouth flow meter can measure the flow within $\pm 0.5\%$ tolerance (JIS B 8340).

OUTSTANDING

Simplified Structure

1 Water resistant enclosure PATENT # : 10-1616274

Patented water resistant enclosure for outdoor applications, a simple overhead canopy and covers on inlet louvers are often all that is required.



2 BOV(Blow Off Valve) PATENT # : 10-1651589

The BOV protects the core from surge during operation and in emergency circumstances. Our patented BOV has a unique design that is operated by internally generated differential pressure without supply of external compressed air.

3 Rotor Locking Device PATENT # : 10-1791977

All Turbowin machines are shipped with our patented rotor locking device. This is to minimize any damage during transportation and installation period.

4 Control Panel

The Control Panel can utilize either a PLC or MICOM controller, based on the customers preference. For the PLC option, we can offer any of Allen-Bradley, SIEMENS, RS-AUTO or LG. The control panel can be connected remotely to plant SCADA via Ethernet, RS485 or RS422.



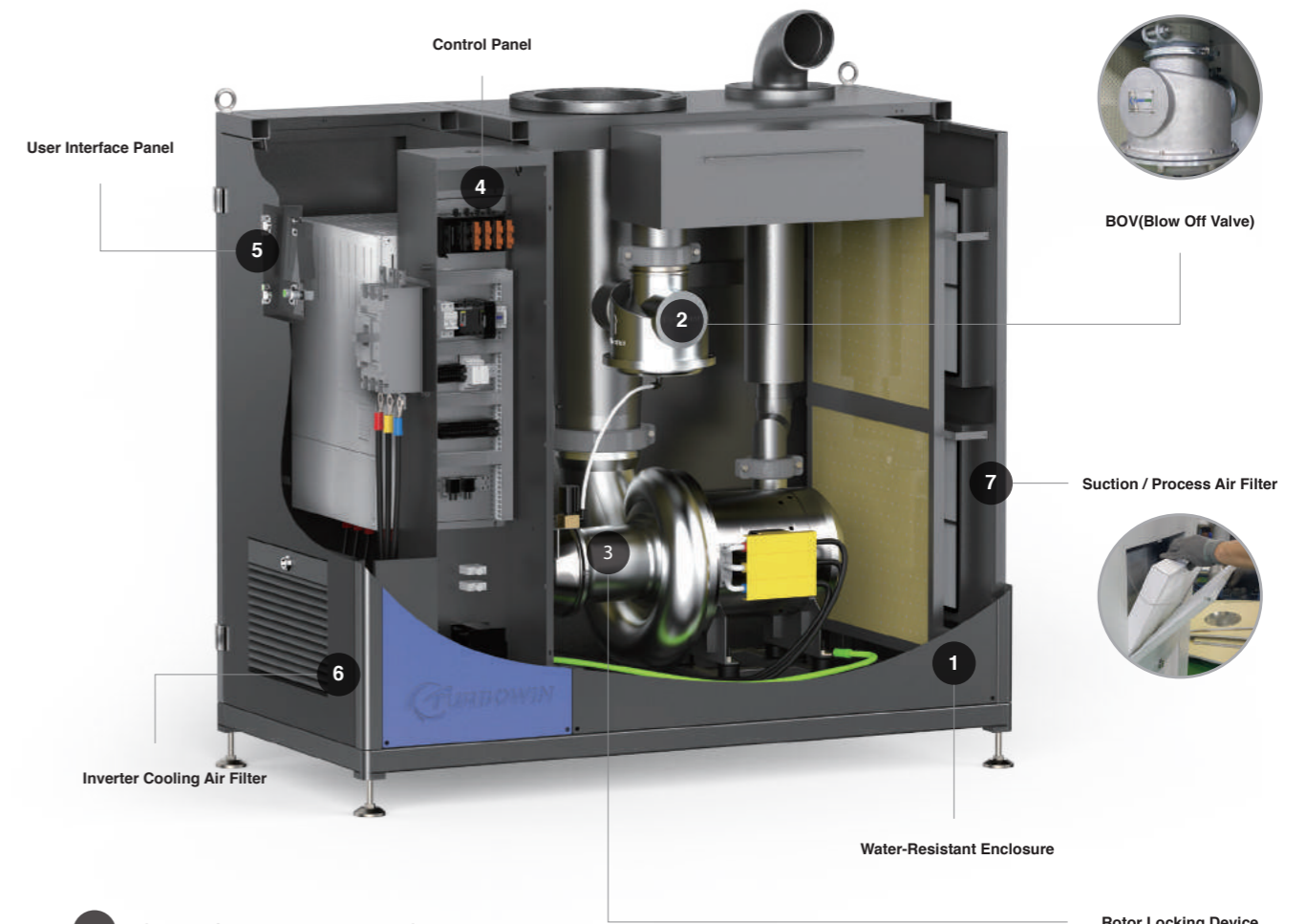
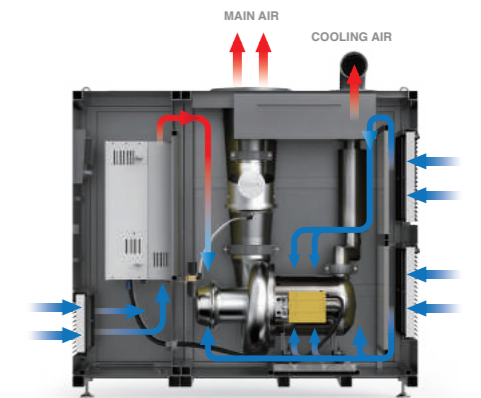
5 User Interface Panel

All Turbowin control systems use either a 7 or 10 inch touch screen so that users can easily and precisely control operational targeting values and control parameters . Four operation switches (RUN, LOAD, STOP, EMERGENCY) allow proper operation during normal and emergency conditions.



6 VFD Cooling System

Turbowin blowers use UL/CE certified VFD from well known industry suppliers to run the high-speed motor. VFD Cooling Air can be either passed from the electrical compartment into the core compartment (Type A), or it can be ducted to the outside of the enclosure (Type B). The image to the right depicts the Type A cooling system.



7 Suction / Process Air Filtering System

Intake air passes through a non-woven free-filter and a pleated main air filter (combined minimum efficiency 85%) to effectively remove potentially harmful contaminants. The filter can be replaced easily even during operation.

Rotor Locking Device



TROUBLE-FREE & SAFE

No Matter How Complex



- ✓ **TWO YEARS GUARANTEE**
- ✓ **EXTREMELY LOW VIBRATION (BELOW 1.0 MM/S)**
- ✓ **LOW NOISE (UNDER 80DB +/- 3DB)**
- ✓ **100% OIL-FREE (ECO-FRIENDLY)**
- ✓ **PLC CONTROL AND SCADA INTERFACE (INTEGRATED CONTROL FOR REMOTE MONITORING AND OPERATION)**
- ✓ **HIGH SPEED VFD (VARIABLE SPEED DRIVER) CONTROL**
- ✓ **EASY OPERATION AND MAINTENANCE**

RELIABLE

More than 2 Billion People in 70 Countries benefit from our machine



DESCRIPTION	
CUSTOMER	U.S.A.
APPLICATION	WASTE WATER TREATMENT
MODEL	WL100-10
UNITS	2EA



DESCRIPTION	
CUSTOMER	JAPAN (OSAKA)
APPLICATION	WASTE WATER TREATMENT
MODEL	WL75-08
UNITS	2EA



DESCRIPTION	
CUSTOMER	RUSSIA
APPLICATION	WASTE WATER TREATMENT
MODEL	WL300-06
UNITS	1EA

WIDE

Product Range



WL10
WL20
WL30

WL40
WL50

WL75
WL100
WL125

WL150
WL200

WL300

High Efficiency Turbo Machinery

- HIGH SPEED MOTOR
- CONTACTLESS AIR BEARING
- VARIABLE SPEED AND DIRECT DRIVING



WL400

WL500



WH50

WH75
WH100

WH150
WH200

WH300

WH400

WL SERIES

Single Impeller Series



Featured Model WL30-08

- Flow 5~160 m³/min
- Pressure 0.4~1.2 bar
- Noise 80dB ± 3dB
- RPM 24,000 ~ 55,000

WL single impeller series are small, efficient and durable turbo blowers. These blowers can be used for air supply in water and wastewater treatment plants, dry powder transfer in chemical or cement plants, air knife and numerous other industrial applications. These single impeller machines are the best solution for low to medium air volume, low pressure requirements.

SPECIFICATION

	WL10	WL20	WL30	WL40	WL50	WL75	WL100	WL125	WL150	WL200	WL250
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SPECIFICATION	DISCHARGE PRESSURE (mmAq)	Single Impeller Type										
		Condition : 1 atm, 20°C, 65% RH, Tolerance of air flow rate ±5%										
AIR FLOW RATE (m ³ /min)	4,000			28	37	47	70	100	115	130	-	-
	6,000	7	14	20	25	34	51	69	82	105	140	160
	8,000	5	11	17	22	28	42	55	70	84	109	135
	10,000	-	-	14	18	21	34	45	55	65	87	104
	12,000	-	-	-	-	18	28	38	47	57	75	93
SHAFT POWER (hp)		10	20	30	40	50	75	100	125	150	200	250
EXHAUST PIPE (mm)	4,000			150A	150A	200A	250A	300A	300A	300A	-	-
	6,000	80A	100A	125A	150A	150A	200A	200A	200A	300A	300A	300A
	8,000	80A	100A	125A	150A	150A	200A	200A	200A	250A	300A	300A
	10,000	-	-	100A	125A	150A	150A	200A	200A	250A	250A	300A
	12,000	-	-	-	-	125A	150A	150A	200A	200A	250A	250A
DIMENSION (mm)	W	650	650	650	700	700	850	850	850	900	900	900
	L	1100	1100	1100	1,300	1,300	1,500	1,500	1,500	1,800	1,800	1,800
	H	1000	1000	1000	1,100	1,100	1,400	1,400	1,400	1,650	1,650	1,650
WEIGHT (kg)		300	320	350	450	450	550	600	650	800	850	900
BLOW OFF V/M		40	50	50	65	65	125	125	125	125	125	125
FUSE, BREAKER (Ampere)		30	50	60	80	100	150	200	250	300	350	400

WL SERIES

Twin Impeller, Twin core Series



Featured Model
WL300-08

Flow	114~540 m ³ /min	Turbowin's WL Twin Impeller / Single Core and Twin Impeller / Twin Core machines can be utilized for all of the same applications as the single impeller machines, but are suited to the larger volume, medium to high air flow ranges. The Twin Core machines are also well suited to applications where a wider turn-down range is desired with turn-downs of up to 4:1 compared to the standard 2:1 turndown of single core machines.
Pressure	0.4~1.2 bar	
Noise	80dB ± 3dB	
RPM	24,000 ~ 40,000	

SPECIFICATION WL200 WL300 WL400 WL500 WL600 WL700 WL800 WL1000

SPECIFICATION	DISCHARGE PRESSURE (mmAq)	WL200-WL500: Twin Impeller Type / WL600-WL1000: Twin Core Type Condition : 1 atm, 20°C, 65% RH, Tolerance of air flow rate ±5%							
		WL200	WL300	WL400	WL500	WL600	WL700	WL800	WL1000
AIR FLOW RATE (m ³ /min)	4,000	200	266	-	-	-	-	-	-
	6,000	-	210	272	320	420	420	475	640
	8,000	-	164	216	270	320	320	370	540
	10,000	-	133	172	208	260	260	300	416
	12,000	-	113	145	185	228	228	255	370
SHAFT POWER (hp)		200	300	400	500	600	600	700	1000
EXHAUST PIPE (mm)	4,000	400A	500A	-	-	-	-	-	-
	6,000	-	400A	400A	500A	500A	500A	600A	600A
	8,000	-	400A	400A	400A	500A	500A	500A	600A
	10,000	-	300A	400A	400A	400A	400A	400A	600A
	12,000	-	250A	300A	400A	400A	400A	400A	500A
DIMENSION (mm)	W	1200	1200	1600	1600	1900	1900	1900	3500
	L	2200	2200	3000	3000	3500	3500	3500	3500
	H	2000	2000	2000	2000	2100	2100	2100	2100
WEIGHT (kg)		1300	1500	1700	2000	3000	3000	3200	3500
BLOW OFF V/M		175	175	175	175*2	175*2	175*2	175*2	175*2
FUSE, BREAKER (Ampere)		400	500	630	800	500*2	500*2	630*2	800*2

WH SERIES

MultiStage Impeller Series



Featured Model
WH300-40

Flow	12~1270 m ³ /min	The WH Series is Turbowin's premium next-generation multi-stage turbo compressor with Air foil Bearing Technology. Turbowin has broaden its line-up range up to 8 bar which makes it capable of building pressure from 1.5 to 8 bar typically reserved for industrial compressors. WH Series applications include deep tank aeration in wastewater treatment plants, production process air in chemical, textile, food & beverage, petrochemical, glass manufacturing plants, air knife applications in semiconductor manufacturing and other industrial medium-to-high pressure applications. This product is the best solution for energy saving application which requires low carbon footprint.
Pressure	1.5~8 bar	
Noise	80dB ± 3dB	
RPM	24,000 ~ 55,000	
System	100% Oil-less system	
Life Cycle	Semi-Permanent	

SPECIFICATION WH50 WH75 WH100 WH150 WH200 WH300 WH400

SPECIFICATION	DISCHARGE PRESSURE (mmAq)	Condition : 1 atm, 20°C, 65% RH, Tolerance of air flow rate ±5%							
		WH50	WH75	WH100	WH150	WH200	WH300	WH400	
AIR FLOW RATE (m ³ /min)	AIR COOLING	1.5	16	24	32	48	65	96	127
	WATER COOLING	2.0	12	18	25	37	50	75	100
		4.0	-	-	18	-	36	55	72
		8.0	-	-	12	-	24	36	48
SHAFT POWER (hp)		50	75	100	150	200	300	400	
EXHAUST PIPE (mm)	1.5	100	125	150	150	200	250	250	
	2.0	100	100	125	150	150	200	250	
	4.0	-	-	100	-	150	200	200	
	8.0	-	-	100	-	125	150	150	
DIMENSION (mm)	W	750	850	850	1050	1050	1500	1500	
	L	1700	1850	1800	2100	2100	2500	2500	
	H	1250	1450	1450	1700	1700	2000	2000	
WEIGHT (kg)		600	750	800	1100	1300	1800	2500	
SOL V/V		65	65	40	125	50	65	80	
FUSE, BREAKER (Ampere)		100	150	200	300	350	500	630	