NEXT GENERATION TURBOMACHINERY

The information in this brochure is
“For Reference Only” and is subject to change without notice.
Certified performance data and dimensions shall be available upon request.

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Quality Management System

ISO 9001
ISO 14001

- Core Certificates : UL, CSA, CE
- Package Certificates : UL, CSA, CE
- Master Control Panel Certificates : UL, CSA, CE

AIR-BEARING HIGH-SPEED TURBO BLOWER

AIR-BEARING
HIGH-SPEED
TURBO BLOWER

TNE
TECHNOLOGY

BE SMALL
THINK BIG

TNE provides comprehensive energy savings and new renewable energy solutions using professional high-speed turbo technology derived from aerospace industry

TNE is committed to providing compact, affordable, robust, environmentally friendly, and energy efficient gear-less turbo blowers for energy savings in various industry. TNE is preparing for the future eco-friendly and renewable energy era through the development of various innovative products and technologies such as hydrogen fuel cell air compressors, refrigerant-free air cycle turbo heat-pump etc.

With the reliable innovative products and value engineering services, TNE is continually innovating and striving for the next generation of happiness and prosperity by conserving global resources and protecting the environment.

Eco-friendly energy savings and recovery solutions:

Oil-free air bearing
high-speed turbo technology

Business Area

Design, production, and distribution of turbo technology

New Energy
(Hydrogen Economy)

- Hydrogen fuel cell electric vehicle
- Hydrogen power generation

Environment
(Water and Wastewater)

- Energy savings and eco-friendly
- Air Bearing High Speed Turbo Blower

Aerospace and Renewable Energy

- Turbine Generator
- ACM/ECS
- Air cycle turbo heat-pump

Core Technology

01 Patented air bearings /magnetic bearing

02 High Efficiency airend compressor/turbine

03 High-speed robust rotor design

04 High Speed PMSM/ VFD

05 Value Engineering

06 Innovative cooling and modular packaging

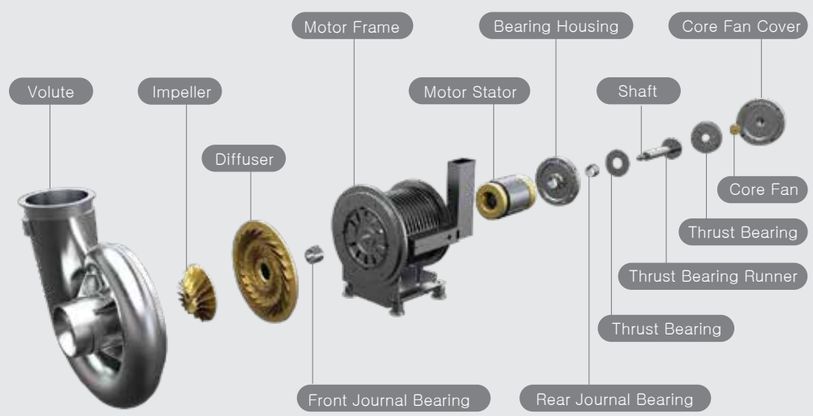
07 Turbomachinery Control and Electronics

Air Bearing High-Efficiency Airend

High Efficiency for Everywhere

- TNE air bearing high-speed turbo blowers are uniquely designed with a high-efficiency airend and innovative cooling system
- Patented non-welded air-bearing design provides consistent and reliable operation
- TNE test facilities satisfy domestic and overseas test standard such as PTC 13/ISO 5389 Annex G.
  Certified test report and factory witness test can be provided upon request.

Turbo Blower Parts



Key Features

Design for frequent start and stop applications

- Ideal for filter backwash and membrane application
- Enable for SBRs or Digestors application
- No more wasted energy from idle operation at no load

Patented improved and robust air bearing modules

- Weld-free air bearings for better reliability and consistency
- Quality inspection of independent bearing module for reliable and consistent service of mass production volume

Fully open discharge operation

- Vaned Diffuser option for a stable operation at zero pressure application while maintaining high efficiency

Operating Mode

- constant speed operation
- constant pressure operation
- DO/ Power Operation

Industry 4.0

- Remote monitoring and operation
- Programmable start/stop
- Automatic start/stop operation

High efficiency with a wide range of operations

- Single/dual or vane/vaneless diffuser combination according to operation conditions

Engineered outdoor enclosure near the application

- Comply with IP54 and IP56 standard ratings

Available for patented circulating system protecting electrical parts under H2S gas

- Closed circulation operation (Nitrogen circulation application)

Robust and Reliable Air Foil Bearing

AIR-BEARING

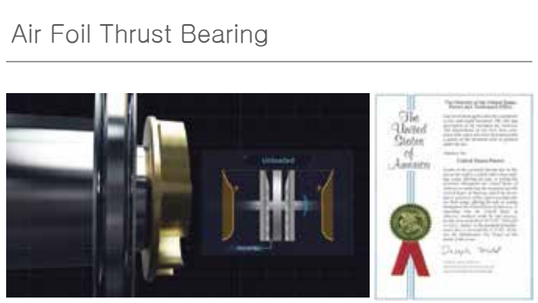
- Improved reliability with patented designs for mass production and simple mechanical assembly
- Sturdy design for frequent start and stop operation
- Longer life spans with contactless, gearless, and vibration-free operation
- Operation at zero discharge pressure with improved load capacity and stability
- Bearing module inspection at the component level for high level of quality control

Simple Assembly | No Welding | No Burst

Air Foil Journal Bearing

* Innovative bearing designs are patented in the US.

Air Foil Thrust Bearing



* Innovative bearing designs are patented in the US.

Standard Package

Patented dust-tight air cooled sound enclosure

HIGH-SPEED TURBO BLOWER

- Patented air-cooling systems with the closed-air inlet to the blower core
- Total air-cooled system: oil-free and lubricant-free operation
- Single control of flow from air inlet filter → improved reliability and easy maintenance
- Options for IP54 or equivalent grade enclosure for dust protection and outdoor installation

No VFD Cooling Fan

No more dust inside of the flow path

Blower for outdoor installation

- Customized outdoor installation near the application
- Central control of distributed blowers for the optimization of power savings
- Double layered IP54 stainless steel outdoor enclosure

Application

Various industry worldwide

Water and Wastewater Treatment Process

- Fine bubble or coarse bubble aeration
- Activated sludge, MBR/MBBR
- Deep Aeration
- Grit Chamber Aeration
- Filter Backwash

Pneumatic Conveying

- Petrochemical pellet, cement powder
- Powder and tablet in pharmaceutical industry
- Sugar, flour, grain and molt in food industry
- Lime in mining industry
- Twine and dyeing process in textile industry

TNE Air-Bearing High Speed Turbo Blower

Air Knife Application

- Food and beverage wash and drying
- Metal mill process
- Green house heating and snow removal
- Nitrogen Circulation
- Semi-conductor and LED processing

Other Industries

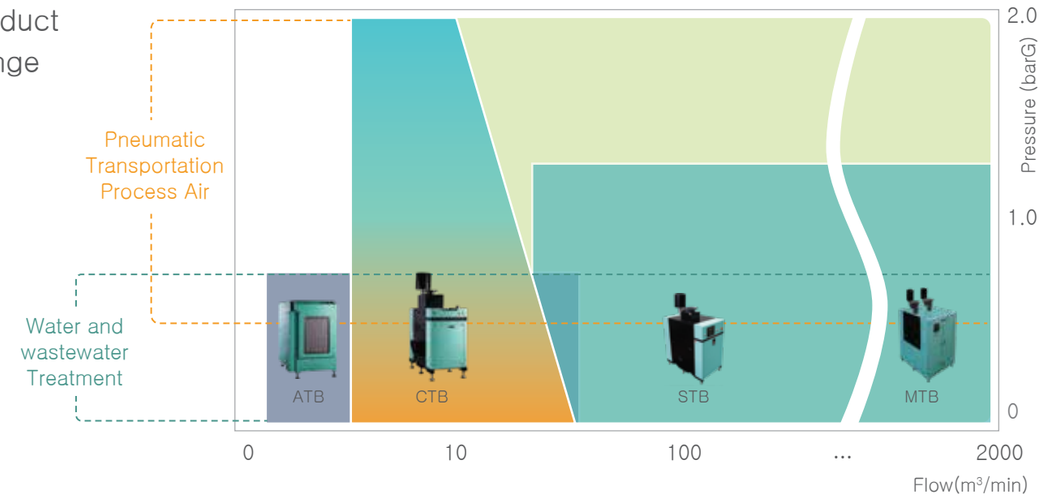
- Gas Collector/ Booster
- Fish farm aeration
- Dust collection system

versatile state-of-the-art technology is everywhere!

NEXT GENERATION OF TURBOMACHINERY

- No oil
- No water (air-cooled system)
- No gear
- No belt

Product Range



TNE Product Lineup

HIGH SPEED TURBO BLOWER

ATB ALL-AROUND TURBO BLOWER

Born to be versatile

Rated Power: 6~37 kW (10 ~50 HP)

- Oil-free high-efficiency operation
- Easy operation like PD blowers.
- Ultra compact size and light weight
- Quick and easy troubleshooting
- No more complicated control electronics

CTB COMPACT TURBO BLOWER

The innovation

Rated Power: 6~37 kW (10-50HP)

- Compact size and light weight compared to conventional small capacity blowers
- High efficiency with small capacity
- Patented dust-tight enclosed cooling design (no H2 gas corrosion)
- Quick and easy troubleshooting with "Swap and Fix" modular components
- High pressure capability to meet various applications (up to 20 PSIG)

STB STANDARD TURBO BLOWER

The improvement

Rated Power: 45~300 kW (60~400HP)

- Stable and improved operation with an optimal air foil bearing load capacity
- Improved operation quality with patented air foil bearings and dust-tight air-cooled sound enclosure
- Optimized selection between wide flow turndown and high efficiency
- Easy HMI design with local monitoring option

MTB MULTI-CORE TURBO BLOWER

The expansion and flexibility for the future

Rated Power: 75k~690kW above (100~900 HP above)

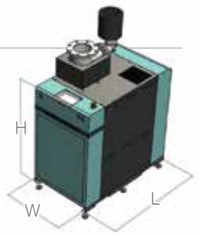
- Multiple cores operating at best efficiency point (BEP) with highly improved flow turndown ratio
- Operating at the optimal capacity based on real-time demand
- Enable to operate the system continuously despite the single core failure. No interference of inlet air flow and minimal downtime for maintenance
- Built-in backup system with an independent operation mode of each core

Product specifications

ATB

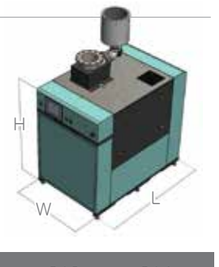
	S2	S4
W (mm)	460	699
L (mm)	971	1170
H (mm)	845	1095

CTB



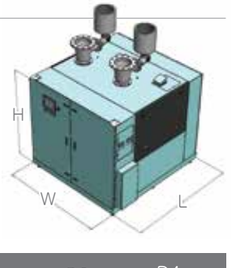
	S2	S4
W (mm)	482	647
L (mm)	975	1155
H (mm)	890	1155

STB



	S6	S8	S10	S12	S14
W (mm)	830	1000	1000	1100	1300
L (mm)	1480	1580	1750	1900	2000
H (mm)	1440	1480	1750	1800	2000

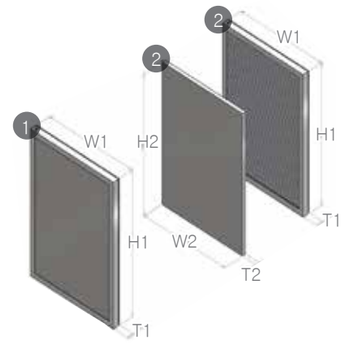
MTB



	D2	D3	D4
W (mm)	1300	1600	1800
L (mm)	1515	1990	1970
H (mm)	1330	1610	1640

*Inquire separately for D6 and D8

Air inlet filter specifications



1. Standard air inlet filter (Non-woven type)

	S2	S4	S6	S8	S10	S12	S14	D2	D3	D4
W1(mm)	330	400	400	460	780	860	1000	400	400	460
H1(mm)	400	550	550	780	1220	1350	1450	550	550	780
T1(mm)	30	30	30	30	30	30	30	30	30	30
수량(ea)	1	1	2	2	1	1	1	2	4	4

*Inquire separately for D6 and D8

2. Optional Premium air inlet filter (HEPA type main filter+ pre-filter)

	S2	S4	S6	S8	S10	S12	S14	D2	D3	D4
W1(mm)	325	395	405	470	790	870	1000	395	405	470
H1(mm)	410	560	550	780	1220	1350	1450	560	550	780
T1(mm)	30	30	30	30	30	30	30	30	30	30
T2(mm)	5	5	5	5	5	5	5	5	5	5
수량(ea)	1	1	2	2	1	1	1	2	4	4

*Inquire separately for D6 and D8

ATB/CTB

Pressure Ratio	Prs. Rise ΔP kPa	MODEL & VOLUME FLOW RATE (M³/MIN)											
2.28	130.0	0.76	1.68	2.47	3.47	4.6	5.7	6.8	8.2	10	11	14	18
2.18	120.0	0.81	1.80	2.65	3.72	5.0	6.2	7.3	8.8	11	12	14	19
2.09	110.0	0.88	1.95	2.86	4.02	5.3	6.6	7.8	9.5	12	13	16	20
1.99	100.0	0.95	2.12	3.11	4.37	5.8	7.2	8.5	10.3	13	14	17	22
1.89	90.0	1.04	2.32	3.41	4.79	6.4	7.9	9.3	11.3	14	16	19	24
1.79	80.0	1.16	2.58	3.79	5.32	7.1	8.8	10.4	12.5	15	18	21	27
1.69	70.0	1.30	2.90	4.26	5.98	8.0	9.9	11.7	14.1	17	20	23	30
1.59	60.0	1.49	3.32	4.88	6.85	9.2	11.3	13.3	16.2	20	23	27	35
1.49	50.0	1.75	3.89	5.72	8.04	10.8	13.3	15.7	19.0	23	27	31	41
1.39	40.0	2.13	4.74	6.96	9.78	13.2	16.2	19.1	23.1	28	32	38	49
1.30	30.0	2.74	6.10	8.97	12.59	17.0	20.8	24.5	29.7	36	42	49	64
1.20	20.0	3.92	8.71	12.81	17.98	24.4	29.7	35.0	42.4	51	59	70	91
RATED POWER	kW	2	4	6	8	11	13	15	18	22	25	29	37
	HP	2.6	5.3	8.0	11	15	17	20	24	30	34	39	50
PACKAGE		S0		S1		S2				S4			
INPUT VOLTAGE	V	220 ~ 480											380 ~ 480
FREQUENCY	Hz	50 ~ 60											
COOLING		AIR COOLED											
BEARING		AIR BEARING											

STB

MODEL & VOLUME FLOW RATE (M³/MIN)											
21	26	36	45	56	66	74	92	114	134	155	
23	28	39	49	60	70	80	99	123	144	166	
24	30	42	53	65	76	86	107	132	155	179	
26	33	45	57	71	83	93	116	144	168	195	
29	36	50	63	78	91	102	127	158	185	213	
32	40	55	70	86	100	114	141	175	205	237	
36	45	62	78	97	113	128	159	197	230	266	
41	51	71	90	111	129	146	182	226	264	305	
49	60	84	105	130	152	172	213	265	310	358	
59	73	102	128	158	185	209	260	322	377	435	
76	94	131	165	204	238	269	334	415	485	561	
109	134	187	235	291	340	384	477	592	693	801	
45	55	75	95	115	135	150	185	225	265	300	
60	74	101	127	154	181	201	248	302	355	402	
S6		S8		S10		S12		S14			
380 ~ 480											
50 ~ 60											
AIR COOLED											
AIR BEARING											

MTB

MODEL & VOLUME FLOW RATE (M³/MIN)																										
Pressure Ratio	Prs. Rise ΔP kPa	NUMBER OF CORES																								
		2								3											4					
2.28	130.0	20	27	35	42	52	72	91	112	63	78	108	136	168	223	276	343	401	464	84	104	144	182	224
2.18	120.0	21	29	38	45	56	77	97	120	68	83	116	146	181	239	297	368	431	497	90	111	155	195	241
2.09	110.0	23	31	41	49	60	84	105	130	73	90	125	158	195	258	320	397	465	537	97	120	167	210	260
1.99	100.0	25	34	44	53	65	91	114	141	79	98	136	172	212	280	348	432	505	584	106	131	182	229	283
1.89	90.0	27	37	48	58	72	100	126	155	87	107	150	188	233	307	382	474	554	640	116	143	199	251	310
1.79	80.0	30	41	54	64	79	111	139	172	97	119	166	209	258	341	424	526	615	710	129	159	221	278	344
1.69	70.0	34	47	60	72	89	124	157	193	109	134	187	235	290	383	476	591	691	799	145	179	249	313	387
1.59	60.0	39	53	69	83	102	142	179	221	124	154	214	269	332	439	545	677	792	915	166	205	285	359	443
1.49	50.0	46	63	81	97	120	167	210	260	146	180	251	316	390	515	640	795	929	1073	195	240	334	421	520
1.39	40.0	56	76	99	118	146	203	256	316	178	219	305	384	474	627	779	967	1131	1306	237	292	407	512	632
1.30	30.0	72	98	127	152	188	262	330	407	229	282	393	494	611	807	1003	1245	1456	1682	305	376	524	659	814
1.20	20.0	103	140	182	218	269	374	471	581	326	403	561	706	872	1153	1432	1777	2079	2402	435	537	748	941	1163
RATED POWER	kW	44	58	74	90	110	150	190	230	135	165	225	285	345	450	555	675	795	900	180	220	300	380	460
	HP	59	78	99	121	148	201	255	308	181	221	302	382	462	603	744	905	1066	1207	241	295	402	510	617
PACKAGE		D2			D3			D4		T3			T4		T5	T6		T7		Q3			Q4			
INPUT VOLTAGE	V	380 ~ 480																								
FREQUENCY	Hz	50 ~ 60																								
COOLING		AIR COOLED																								
BEARING		AIR BEARING																								