

# KFM TURBO BLOWER

- Preventing surging by regulator(Patent 10-1004700)
- Automatic operation even in sudden air flow / pressure change
- Best quality, lower cost by removing unnecessary devices and sensors
- Economic operation by automatic optimal air flow operation
- 60,000 rpm high speed pmsm motor



SINCE 1976

Thinking of man and nature together

**(株)韓国流体機械**  
KOREA FLUID MACHINERY CO., LTD.



**KFM Turbo blower** has been developed based on experience and technology on Roots Blower to perform the function needed for industrial settings. Turbo blower's manufacturing cost has been lowered for a high performance to cost ratio.

## Characteristics

- Usage is calculated exactly as used rather than depending on the operator's ability. It leads to reduction in energy and personnel.
- Regulator to prevent surging drastically allows for operation in larger territory as there is no limit in pressure and air volume.

### ECONOMIC FEASIBILITY

- Automatically adjusted operation depending on air usage
- Power-factor improvements and downsizing from high-revving(60,000rpm) operation
- Removal of unnecessary accessories, automated energy saving
- No loss in energy and rise in efficiency from removal of reactor, cooling fan, and blow-off valve
- Supplied at lower cost because self developed parts
- Operation in no-load current is possible, minimizing electricity consumption

### ECO-FRIENDLY

- Recoverable filters applied, serviceable simply by cleaning
- Removal of blow-off valve leading to removal of noise and rise in indoor temperature
- Clean air by 100% oil-free operation
- Oil-free operation from air foil bearing use
- Quiet(80dB(A)) and low vibration operation

### CONVENIENCE

- Usage of regulator(Patent 10-1004700) allows for a large operation territory and removal of blow-off valve
- Inverter allows for a large operation territory
- Self-adjustments in operation by usage
- Surging area removed by automated operation and regulator use
- Long-distance control by RS-422/485 communication

### DURABILITY

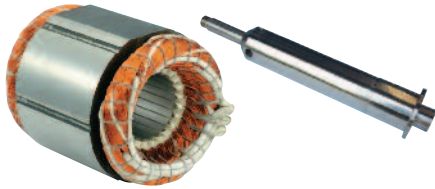
- Long life span of condenser, relay and IGBT lead to 10 year design life of inverter
- Rise in air foil bearing load guarantees longer lifespan (Patent 064863)
- Metal matrix composite rotor and iron-less and copper-less manufacture of bearing allow for life extension
- Strict quality test based on inspection regulation

## Applications

- Water treatment aeration, Fish farm aeration, Pipe cleaning, Drying, spray for painting, Powdered material, and conveying



## Structures & Advantage



### 1. Permanent Magnet Synchronous Motor (Patent 0636002)

- Technical cooperation with Korea electro technology research institute allows for improved power factor and efficiency.
- Rotor is made with self developed, non-magnetic, corrosion-resisting, lubricative composite material that can resist high revolutions and high temperature.
- Stator uses an air suction cooling method, which maintains a higher withstand voltage than standard. Electric current deviation is low.
- Motor temperature stays below 40°C, with no reduction in efficiency and lifetime.
- Rotor and impeller's weight balance can resist 80,000 rpm.



### 2. Air Foil Bearing (Patent 0648637)

- Semi permanent, replaceable bearing developed by KFM's technology.
- Dry type, non-contacting, oil-free, quiet, high-inertia dynamic load.
- Large operation territory with application of vaneless diffuser.
- 50% greater load with self-cooling and longer lifetime by removal of bump foil.



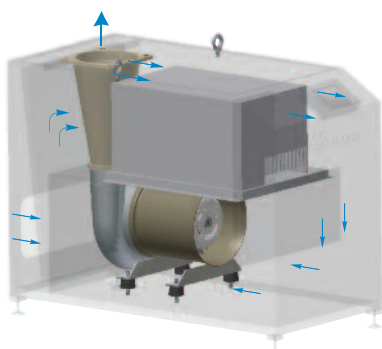
### 3. Impeller & Volute

- High-speed, high efficiency, best durability and low noise developed by KFM's technology.
- Elegant blades with strong durability made by Lost-Wax detailed cast.
- Large operation territory with application of vaneless diffuser.
- Greater choice of materials for various purposes.
- Thrust regulator method applied to maintain same air pressure between the impeller and the shroud side. High efficiency and low assembly tolerance lead to minimization of air blower.
- Various impellers and volutes are applied for suitable specifications.
- Production of high efficient closed type is possible.



### 4. Controller & Inverter

- Energy-saving, vector-controlled, sensor free, auto-tuning inverter is applied.
- Removal of reactor, cooling fan, noise filter, and various kinds of sensors allow for minimum energy loss and breakdown.
- Rev count, voltage, current, operation status can be easily checked with a LCD monitor.
- Pressure and flow control function is supported.
- Self-diagnosis and safe shutdown features.
- Complex parameter input is unnecessary due to removal of blow-off valve.



### 5. Cooling and Soundproof system

- Air suction cooling system cools inverter, motor, bearing and other sensor equipment, increasing efficiency.
- Airflow path is improved to block sound source that diffracts, reflects and amplifies. Thus soundproof effect is maximized.
- Reusable, semi-permanent filter is applied to supply clean air.
- Manufactured to be safe, soundproof, protection against heat and elegant.
- Eco-friendly and contributes to safety.
- Ground system removes short circuit danger.

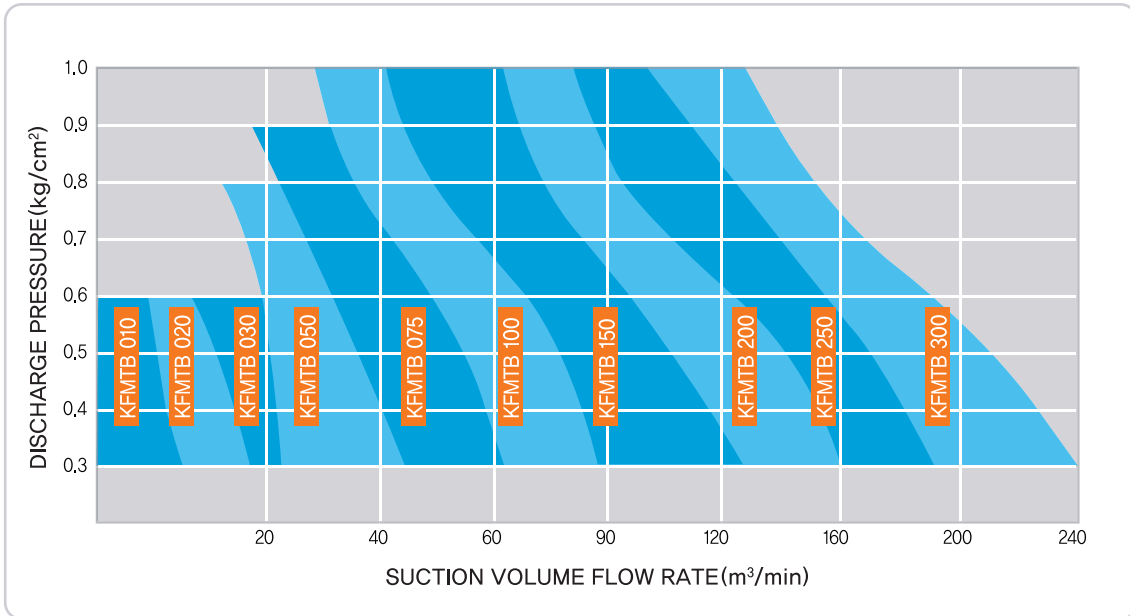
### 6. Economic feasibility (Patent 0892268)

- Self control system, air suction cooling system and axial thrust regulator system allow for a high efficiency operation.
- Efficiency and power factor is improved with high-speed revolution.
- Low power consumption from no admission to surging area with the regulator.
- Unmanned automated operation reduces personnel.
- No blow-off valve operation energy due to removal of blow-off valve.





## Performance Curve



## Performance Table

DISCHARGE PRESSURE (kg/cm <sup>2</sup> )	KFM TB 010	KFM TB 020	KFM TB 030	KFM TB 050	KFM TB 075	KFM TB 100	KFM TB 150	KFM TB 200	KFM TB 250	KFM TB 300
	SUCTION VOLUME FLOW RATE (m <sup>3</sup> /min)									
0.3	10	18	23	44	62	88	124	160	193	240
0.4	8	16	22	41	60	82	119	154	186	230
0.5	7	14	21	36	55	74	106	142	172	212
0.6	6	11	18	32	48	63	95	128	155	192
0.7	-	-	16	26	40	56	84	110	140	166
0.8	-	-	13	22	36	48	72	94	125	144
0.9	-	-	-	16	33	45	67	87	112	132
1.0	-	-	-	-	28	41	63	82	98	128

- Table shows maximum flow rate at suction state of temperature 20°C, 1atm, and 60% humidity.
- Power input should have 20% allowance to cover various operation conditions.



## Specification

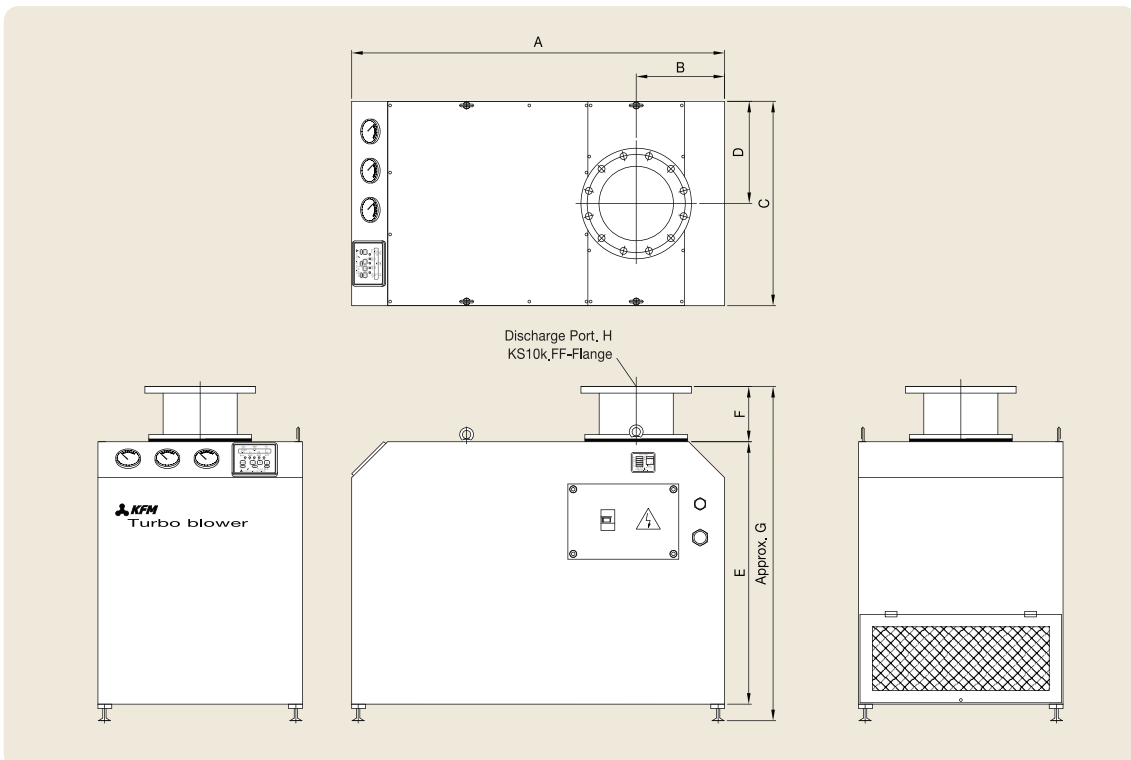
FLOW CONTROL METHOD	Proportional Operation Mode, Automatic Optimal Air Flow Operation Mode
FLOW RANGE	50~100%
POWER	380V~440V, 3 Phase, 50/60Hz
COOLING METHOD	Air Cooling
STANDARD PARTS	Pressure Sensor, Check Valve, Suction Filter

## Dimension

TYPE \ MODEL	KFMTB 010	KFMTB 020	KFMTB 030	KFMTB 050	KFMTB 075	KFMTB 100	KFMTB 150	KFMTB 200	KFMTB 250	KFMTB 300
A	950	1200	1300	1300	1350	1600	1600	2000	2300	2500
B	250	280	300	300	330	340	340	470	500	600
C	500	550	600	600	700	800	800	950	1400	1400
D	250	275	300	300	350	400	400	560	700	700
E	750	750	800	800	820	1000	1000	1120	1400	1400
F	100	100	115	115	118	118	118	138	150	150
G	915	915	980	980	1040	1190	1190	1330	1670	1650
H	100A	125A	150A	150A	200A	250A	250A	300A	350A	400A
Approx. Weight(kg)	200	250	320	360	490	610	630	820	1080	1300

- The dimension of this catalog may be changed without prior notice in order to improve the performance of the product.
- Please contact the manufacturer or supplier for change in sizes for installation space.

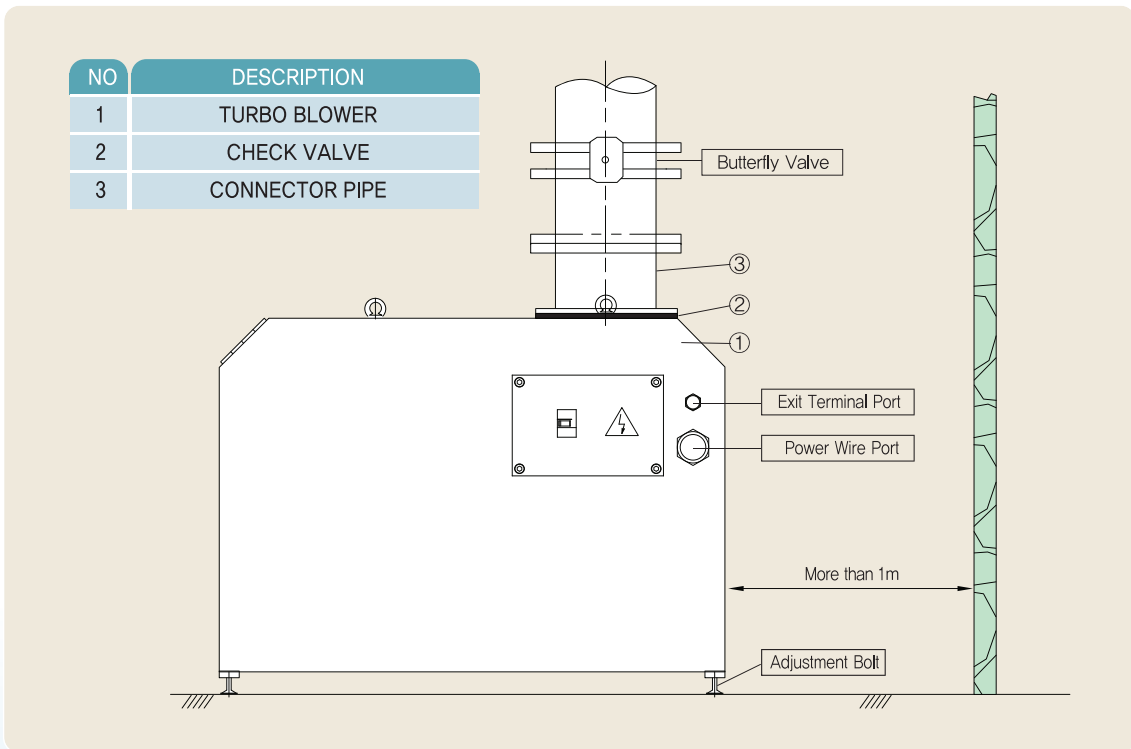
## Drawing





## Installation Guide

- Install the Turbo Blower at a well-ventilated place with the minimum temperature and humidity changes.
- Simply install and connect discharge pipes and electric wires. No need for anchor operation for machine to be stay fixed.
- Keep a distance of 1m from the wall for air flow and easy filter cleaning process.
- Install the Turbo Blower at a clean environment.
- In case of installing several Turbo Blowers, have a distance of 1m between them.
- Make sure the weight of the pipe does not affect the Turbo Blower.
- Turbo Blower should be moved with a crane.
- If Turbo Blower's piping does not fit, use adjustment bolts.
- Connect the adjustment bolts. to ground wire for safety.



## Instructions

- An operator may cause unnecessary surplus air energy loss, but a user can automatically operate without energy loss by valve manipulation only.
- Operation Adjustments can be made by change in rev-count while operation in constant pressure.
- Low pressure operation is possible as long as power is permitted during constant pressure operation.
- High voltage error can be removed by closing discharge valve.
- Low voltage error can be removed by closing discharge valve.



Man, Nature, and Culture –  
 “Thinking of man and nature together”



## HISTORY

1976	Jul	Established KFM in Busan
1976	Oct	Produced 2-Lobed Roots Blower
1978	Mar	Produced 3-Lobed Roots Blower
1979	Jul	Obtained Patent for 3-Lobed Roots Blower (Pat. No. 6654)
1982	Sep	Expanded and moved Head Office and Yangsan Plant to Yangsan, Korea
1983	Nov	Developed 3-Lobed Helical Roots Blower, second in the world
1986	Jan	Incorporated to KFM Co., Ltd. (Registration No. 184511-0001583)
1986	Jul	Started export business to South East Asia
1990	Mar	Manufactured the largest blower for cement plant (ST500)
1993	Sep	Launched mass production of 3-Lobed Helical Roots Blower, first in the world
1998	Apr	Patent application of Orbit Compressor & Vacuum Pump
1999	Jul	Obtained Quality Assurance System Certification ISO9001/KSA9001 from DNV/RVA
1999	Aug	Awarded for IR52 Jang Young Shil award for Orbit Compressor and Vacuum Pump
2000	Mar	Started to develop L type as a main product for domestic and overseas business
2000	Oct	Started export to Japan
2000	Dec	Realization of clean management without loan
2002	May	Obtained international patent covering 5 countries (U.S.A., Britain, Germany, Japan, China) for Orbit Compressor & Vacuum Pumps
2002	Nov	Obtained CE
2004	Mar	Opened China Agency
2004	Mar	Introduced Enterprise Resource Planning System
2005	Oct	Developed Turbo Blower KFMTB Series
2006	Apr	Started to sell KFMTB075
2006	Oct	Developed Turbo Blower KFMTB200
2006	Oct	Patent registration of super high speed motor for turbo blower (Patent 10-0636002)
2006	Nov	Patent registration of air foil bearing for turbo blower (Patent 10-0648637)
2007	Jan	ST600 blower development and supply (Iran A1 project/Hyundai Construction)
2007	Feb	Patent registration of safety valve for turbo blower (Patent 10-0684119)
2007	June	Development due to limitation of 3-lobed rotary air blower
2008	Mar	Patent registration of turbo centrifugal compressor (Patent 10-0813145)
2009	Apr	Patent registration of turbo blower multifunction valve (Patent 10-0892268)
2010	Dec	Patent registration of centrifugal compressor (pressure controlled) (Patent 10-1004700)
2010	Dec	Patent registration of centrifugal compressor (cooling structure) (Patent 10-1004701)
2011	June	Development of centrifugal compressor auto control for pressure and capacity variation
2011	Dec	ST700(1300HP) blower development and supply
2013	May	Started export to China, Vietnam (Turbo Blower)
2013	Oct	Awarded prime minister award for developing and exporting capital goods
2014	Aug	Patent registration of centrifugal compressor (pressure controlled & cooling structure) (Patent No. : US 8,814,499 B2)



## OVERSEAS BUSINESS & SERVICE NETWORKS

### ● OVERSEAS SALES CONTACT

#### **KFM TRADING(韓流)**

Rm 1201, Victoria B/D 705-1, Yeoksam-dong, Gangnam-gu, Seoul, Korea. (Zip Code:135-709)  
TEL : + 82-2-501-4860~61, + 82-2-565-9019 FAX : + 82-2-501-4862

### ● PARTNER IN JAPAN

#### **TSURUMI MANUFACTURING CO., LTD.**

16-40, 4-Chome, Tsurumi, Tsurumi-ku, Osaka 538-8585 Japan.  
TEL : +81-6-6911-2351 FAX : +81-6-6911-1800

### ● PARTNER IN CHINA

#### **SHANGHAI LEOPARD TRADE DEVELOPMENT CO., LTD.**

Room 405 No.7 Pujiang Building, Anshun Road, Shanghai 200052, P.R. China.  
TEL : +86-21-6294-7638 FAX : +86-21-6294-7636

#### **SHANDONG ZHANGQIU BLOWER CO., LTD.**

Mingshui Economic Development Zone, Zhangqiu City, Shandong Province, China.  
TEL : +86-531-83250080 +86-531-83250007  
FAX : +86-531-83250082

#### **QINGDAO XINGLIN MACHINERY CO., LTD.**

Room 1401 Unit 1 11 Building No.28 Wenchang Road, Licang District Qingdao City, China.  
TEL : +86-532-84610729 FAX : +86-532-84610729

### ● PARTNER IN INDIA

#### **SWAM PNEUMATICS PVT.LTD**

C-2, Sector III NOIDA 201 301, (U.P), INDIA.  
TEL : +91-120-4696222 FAX : +91-120-2443283

### ● PARTNER IN MALAYSIA

#### **Pumpen SDN BHD.**

10, Jalan PJU 1A/10 Taman Perindustrian Jaya, 47301 Petaling Jaya Selangor D. E. Malaysia.  
TEL : +603 7847 1318 FAX : +603 7847 1179

### ● PARTNER IN PHILIPPINES

#### **Aquatreat Environmental Systems Inc.**

Unit 12-D Bellamaja G/F, 411 Aglipay Street, Bgy. Old Zafiga, Mandaluyong City, Metromanila, PHILIPPINES 1550.  
TEL : +63 (2) 532-1446 FAX : +63 (2) 532-1474

### ● PARTNER IN VIETNAM

#### **KIMPHAT TECHNOLOGY COMPANY LIMITED**

No. 41/12, 2 street, Binh Hung Hoa A Ward, Binh Tan Dist, Ho Chi Minh City, Viet Nam.  
TEL : +84 8 3767 3207 FAX : + 84 8 3767 3208



Thinking of man and nature together

## **(株)韓国流体機械**

**KOREA FLUID MACHINERY CO., LTD.**

### ● HEAD OFFICE & PLANT

#### **KOREA FLUID MACHINERY CO., LTD.**

48, Eosil-ro, Yangsan-si, Gyeongsangnam-do, Korea.  
(ZIP CODE 626-230)  
TEL : + 82-55-372-0911~4, +82-51-463-0911  
+ 82-2-752-7550  
FAX : + 82-55-372-0915, +82-2-752-7550  
www.kfmblower.com e-mail : kfmc@kfmblower.com

### ● MAIN PRODUCTS

- Turbo Blower
- Rotary Blower
- Three Lobes Helical Blower
- Vacuum Pump
- Vane Type Blower & Vacuum Pump
- Pneumatic Bulk Handling Systems

DISTRIBUTOR