



TURBO BLOWER

Long endurance

Modern technology

High efficiency

Turbo Blowers

MIVALT - MTB

In recent years, we have come to see energy as a valuable commodity.

That is why we have come up with a modern and efficient solution - MTB, MTC Turbo blowers and TC Turbo compressors.

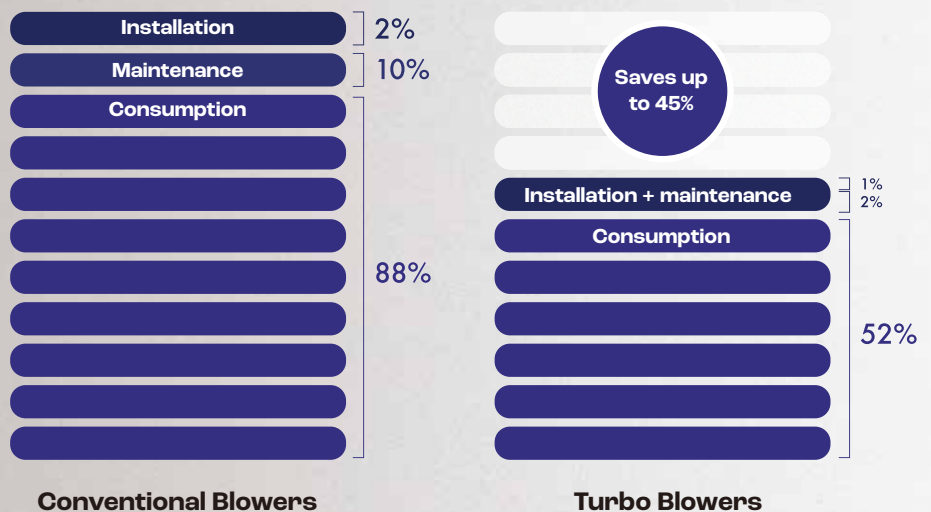


Cost Comparison Benefits

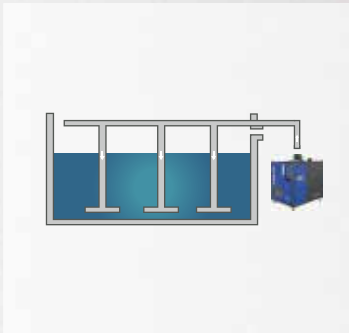
Distinctive features and advantages

Efficiency	Low operating costs	Zero vibration	Compactness
<ul style="list-style-type: none"> - Reduces power consumption by up to 45% compared to conventional blowers - High efficiency 	<ul style="list-style-type: none"> - Maintenance-free air bearings - Regular replacement of the air filter only 	<ul style="list-style-type: none"> - Air bearing allows operation with minimal vibration of the machine - No soundproofing required (noise level 75-80 dB) 	<ul style="list-style-type: none"> - Minimal dimensions compared to other types of blowers - The structure is equipped with fasteners for safe handling

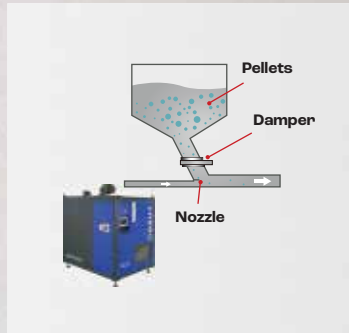
Costs Comparison



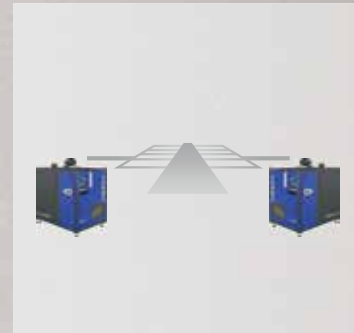
Variety of usage



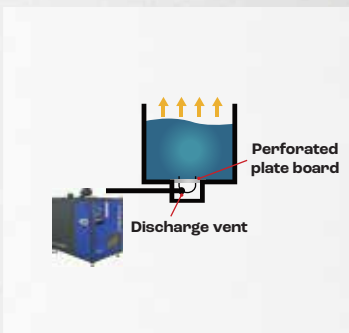
Water treatment facilities



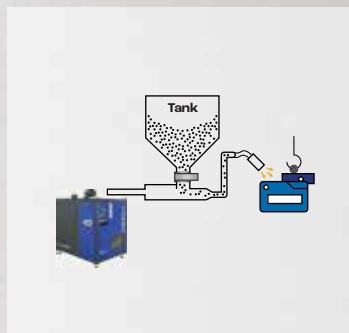
Transport of bulk materials



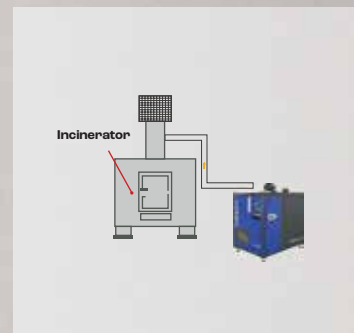
Dehumidification, drying & fuel gas desulphurisation



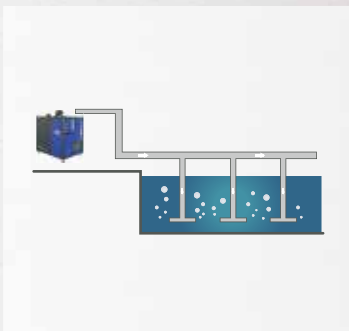
Fermentation



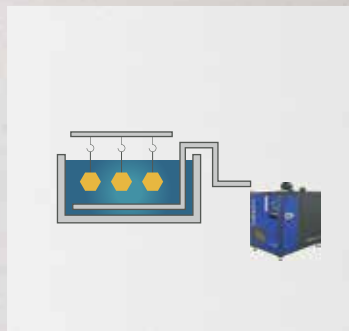
Sand blasting



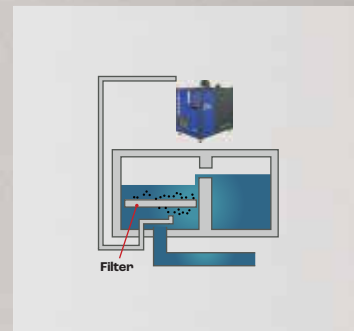
Incinerators



Aeration / Oxygen supply



Plating baths



Back washing

Operation without Complications

Easy maintenance

- Air filter cleaning and replacement only
- Dual filtration system increases the reliability of the machine (pre-filter + main filter)
- Low suction pressure losses due to filtration system

Lorem ipsum



Low noise and vibration

- Noise level of the machine does not exceed 75-80dB at 1m (no need for soundproofing)
- Minimal vibration due to rotor balance and machine design



Remote control

- Remote control operation is available anywhere and anytime through various network infrastructures telephone network, internet, wireless network



Turbo Blower Structure



Inverter



HMI



Air filter



Blow off valve

Control panel and circuit breaker

Motor



Standard filter



Intake flange



Blow off valve



Control panel and circuit breaker

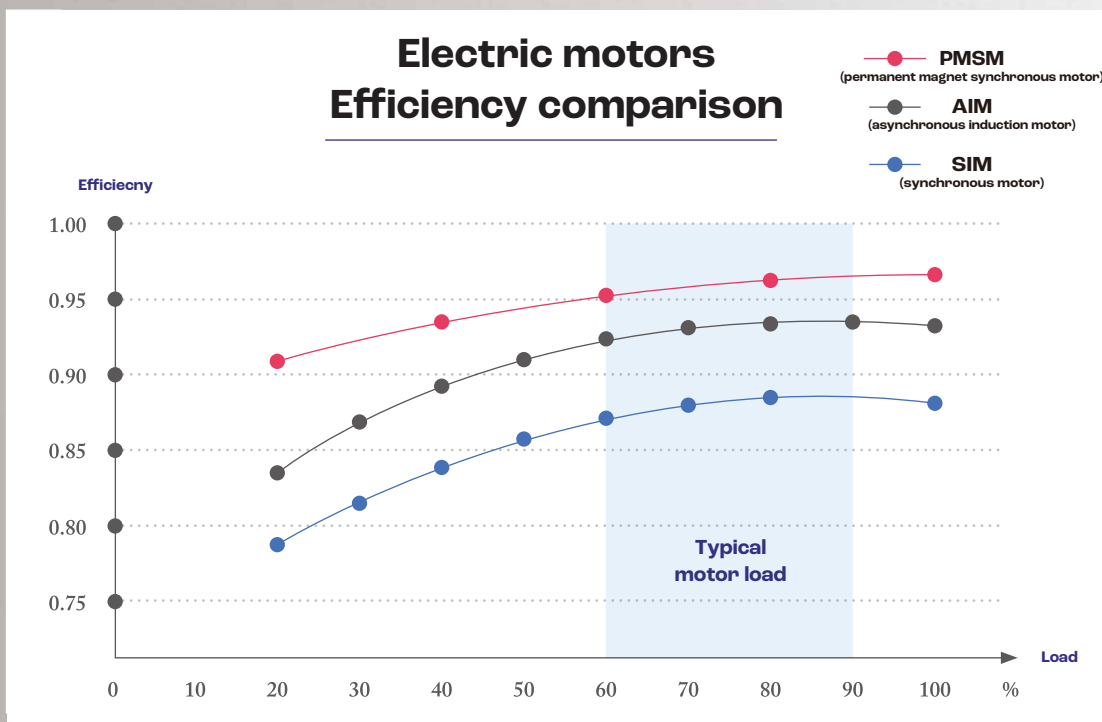


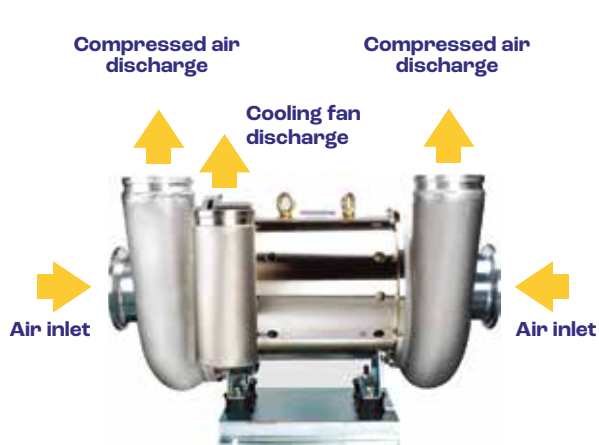
Motor + airend

High-speed permanent Magnet motor (PMSM)

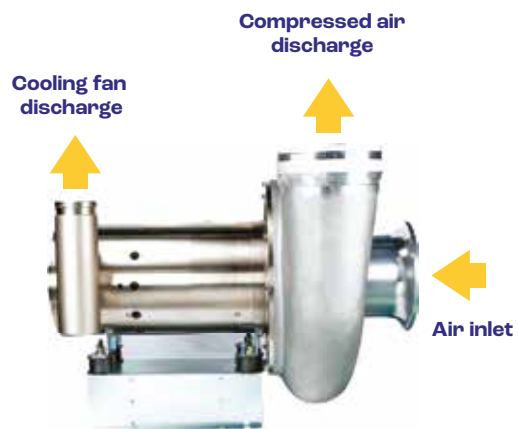
The design of the electric motor allows individual adjustment for optimum operation, achieving efficiencies of up to 98%

- Minimal losses due to direct drive
- Designed for high speeds
- Up to 120 000 RPM
- Efficient cooling structure, no reduction in efficiency due to warming
- Smooth start-up (start-up current is 4.5% of rated current)
- Start-Stop test conducted over 100 000 times
- PMSM motor is significantly smaller than induction motor
- Accurate speed control





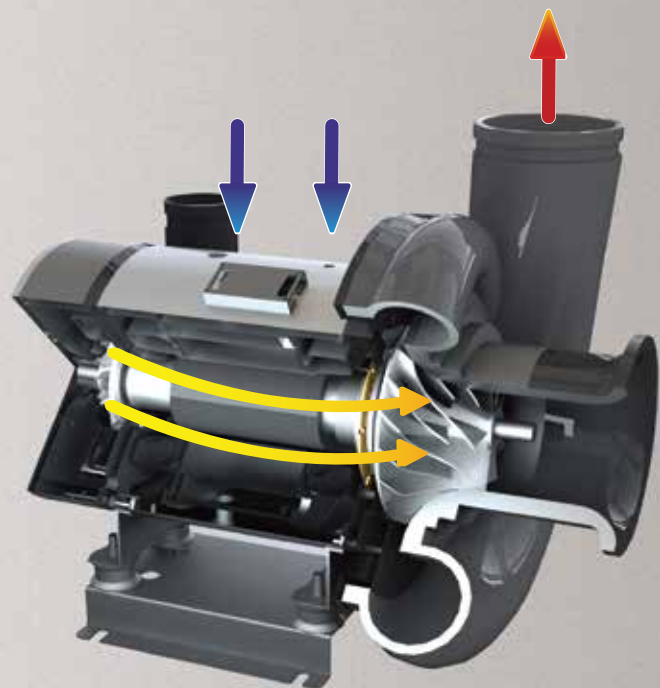
Dual impeller - 300 HP or higher



Single impeller - up to 250 HP

Cooling System

- Self-contained cooling system - heat exchange is mediated by the saturated ambient air. Cooling is required especially for the electric motor and air bearing.
- The cooling system is part of the rotor and therefore does not require a separate drive
- No maintenance required



Air bearings

Basic parameters and comparison

- Air bearings are lubricant-free and contactless
- No maintenance required due to air lubrication
- Special coating reduces frictional wear between rotor and bearing, providing long life and virtually zero maintenance costs

Comparison of Bearings



Air Bearing

Tilting Pad Bearing

Ball Bearing

Lubrication	Not required	Required	Required
Durability	Semi-permanent	Limited	Needs replacement
Maintenance	None	Regular checks	Regular replacement
Reliability	III	II	I
System	Simple	Complex oil system (Pump, filter, pressure sensor etc.)	

Impeller manufacture

The manufacture technology of MTB impellers reaches parameters of aircraft turbines

- Precise design ensures wide flow range and surge margin
- Uniform efficiency for each product through precise 5-axis milling
- High strength and durability obtained by AL7075 aluminium alloy material
- Anodized coating enhances hardness of the surface
- Direct connection to the shaft minimizes inaccuracies and vibration



High frequency inverter

- Inverter with state-of-the-art energy saving technology
- Compared to other onverters, it requires a lower starting current of the electric motor
- Reduces power consumption through vector control of output voltage
- Lower noise level, electronic noise cancellation
- Precise power control and smooth start-up
- High reliability and efficiency with 96% or more control efficiency
- Fast response even with sudden load fluctuations
- KEB (Kinetic Energy Back-up) system providing slowdown and fast decelartion in case of power failutre
- Sensorless technology prevents malfuctions at higher temperatures
- Lightweight design

Efficiency comparison by blower type



Roots blower



Screw blower



Turbo blower

	Roots blower	Screw blower	Turbo blower
Principle	Volumetric	Centrifugal	Centrifugal Turbo
Transmission	V-Belt	Gears	Direct connection
Discharge pressure	0.8 bar	0.8 bar	0.8 bar
Flow Rate	29m ³ /min	29m ³ /min	29m ³ /min
Power	55kW	48kW	35kW
Noise (at 1m)	95-110dB	90dB	75-78dB
Vibration	Severe	Minor	None
Lubrication	Required	Required	Ambient air
Maintenance	Regular and complex	Regular and complex	Simple (air filter replacement)

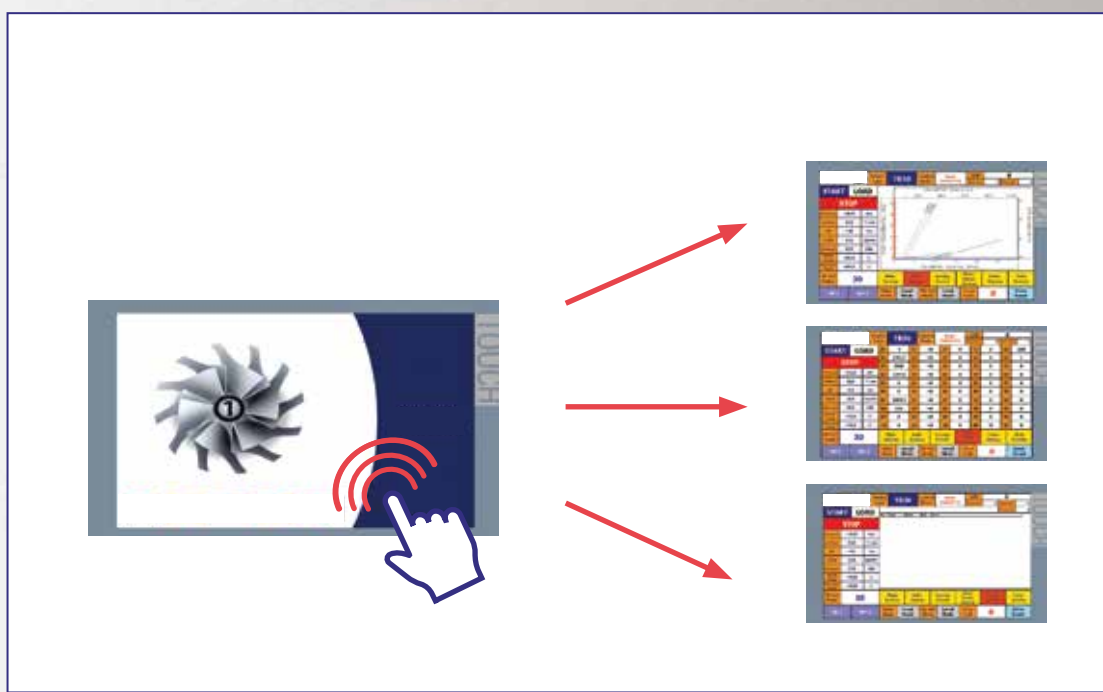
Autonomous control System

Premium PLC unit

- **Highly stable, accurate and precise blower control**
- **Lower rate of malfunction due to noise**
- **Optimized control logic allows control operation according to various user's needs in different modes such as constant pressure, flow rate or speed**
- **Remote control realized by Modbus RTU protocol support via RS485 serial port**
- **Reduced risk of damage to equipment due to protective technology (Prevention control logic)**

Optimized HMI

- **Real-time monitoring of the information of the blower operation such as flow rate, pressure, temperature and rotation speed through the LCD display**
- **Touchscreen allows easy operation**



Blower installation

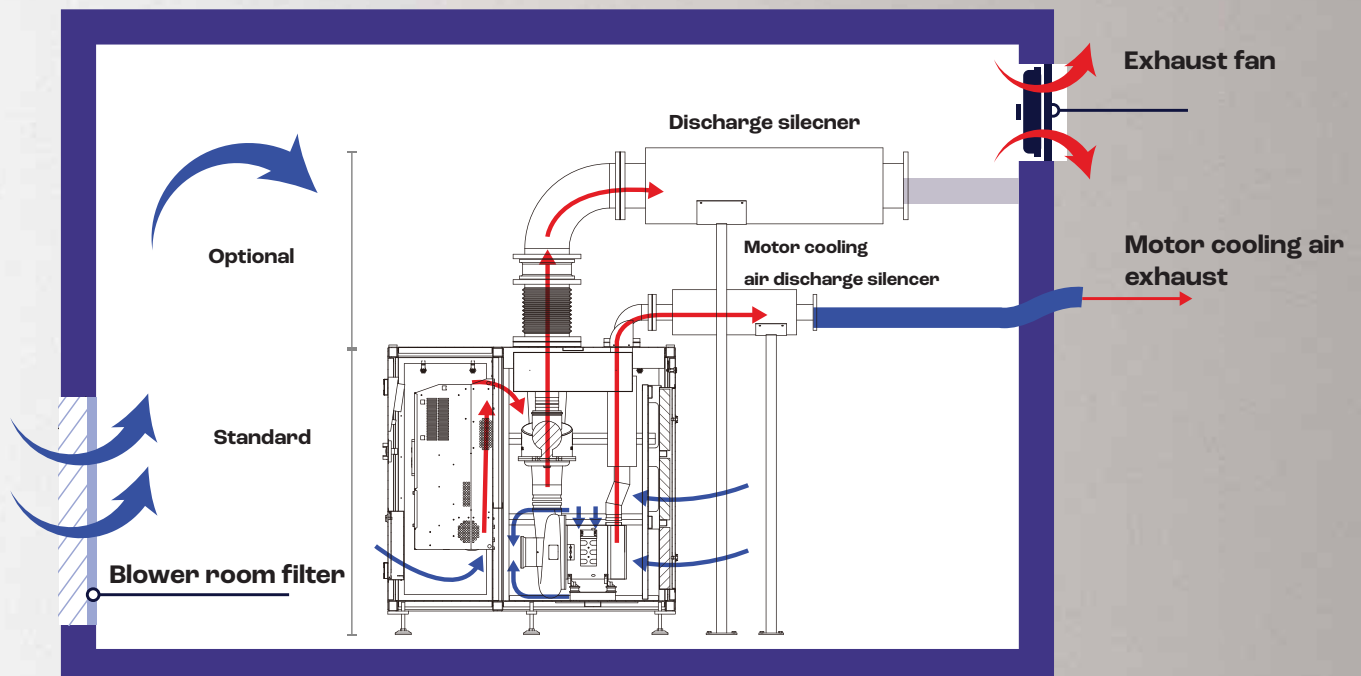
Easy nad simple installation (Plug & Play)

- No anchor or foundation work required due to minimal vibration of the machine
- Complete the installation simply by placing the blower in the desired location and connecting power line and piping
- Adjustable support allow easy alignment of the machine



Local installation drawing

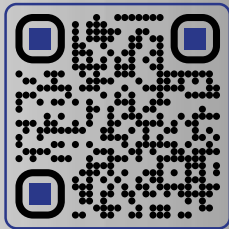
- Ventilation enhacement
- Thermal insulation (improved heat dissipation from the operation room)
- Order of installing the piping: FLexible joint -> Check valve -> Elbow -> discharge silencer
- Installation support axis in exhaust structure



Machine models



Model Name	Flow	Pressure	Power	Discharge Pipe Diameter	Size (mm)			Cooling
	m ³ /min	(bar)	(kW)	(mm)	w	l	h	
MTB10	3~8	0.3 ~ 0.8	7.5					Air Cooling
MTB15	5~13	0.3 ~ 0.8	11					
MTB20	6~15	0.3 ~ 0.8	15	150	700	1200	1120	
MTB25	7~25	0.3 ~ 0.8	22					
MTB30	10~42	0.3 ~ 0.8	37					
MTB50	18~62	0.3 ~ 1.0	55					
MTB75	23~105	0.3 ~ 1.0	75	200	1033	1690	1425	
MTB100	25~115	0.3 ~ 0.8	93					
MTB125	28~130	0.3 ~ 1.0	111					
MTB150	36~210	0.3 ~ 1.0	150	300	1033	2050	1697	
MTB200	40~235	0.3 ~ 1.0	186					
MTB250	80~260	0.3 ~ 1.0	223	400	1263	2260	2187	
MTB300	80~275	0.3 ~ 1.0	298	400	1760	2260	2187	
MTB500	90~330	0.6 ~ 1.0	372	500	1760	2260	2187	
MTB600	100~420	0.6 ~ 1.0	447	500	2150	3600	2187	
MTC600	100~520	0.6 ~ 1.0	596	600	2150	3500	2187	
MTC800	10~30	1.2 ~ 2.0	75	150	1033	1690	1425	
TC100	12~51	1.2 ~ 2.0	111	200	1033	2050	1697	
TC150	12~76	1.2 ~ 2.0	150	250	1033	2050	1697	
TC200	20~85	1.2 ~ 2.0	223	250	1263	2260	2187	
TC300								






Sustainability
Quality
Reliability

Moderní problémy require modern solutions,
We may help you,
MIVALT s.r.o.

MIVALT

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