

Perfection in fluids.

The right *flow*
by German engineering.



EP BTB - Blower Test Benches

Performance measurement according to standard

Broschure EPE-161457



Made in
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Similar to figure

Compact characteristic curves test benches according to DIN EN ISO 5801

- Characteristic curve recording of fans & blowers
- Flow ranges up to 100,000 m³/h
- High measurement accuracy up to 1% MV (Optional 0.5% MV)

Description

EP BTB fan and blower test benches are designed for the measurement and characteristic line recording of fans and blowers according to DIN EN ISO 5801. The individual test benches can be designed for various volume flow ranges from 1.5 to 100,000 m³/h. The chamber pressure can be varied between ± 2500 Pa and more, depending on the design. This allows the simulation of different load conditions on the test piece.

Precise measurement according to DIN EN ISO 5801

The performance measurement is carried out in accordance to DIN EN ISO 5801 and serves as verification for customers in production and maintenance. Characteristic line determination is a key factor in the development and optimization of fans. The purpose is to provide energy-efficient fans and blowers with high efficiency and low energy consumption over the widest possible operating range. The optimization of fan series requires very high measurement accuracy and reproducible measurement results. The use of specific measuring elements enables a measurement accuracy of up to 0.5% MV on the EP BTB test benches.

Optimum measuring section design

Depending on the required measuring range, we select the optimum measuring section, e.g. LFE, Venturi, ultrasonic meter, etc., for your system. With Laminar Flow Elements (LFEs), for example, wide measuring ranges of up to 1:100 with high measurement accuracy can be achieved using only one measuring element. If the measurement range is even wider, different measurement paths can be combined.

User friendly systems

The compact characteristic curve test benches have a universal clamping plate for testing different test items (e.g. radial and axial fans). The hose connection allows the auxiliary blower to be operated in a separate room for noise reduction. The automatic characteristic line determination is carried out via the individual and user-friendly software with LabVIEW.



Standard solutions Application examples

- Automotive & automation:** Characteristic determination on HVACs for vehicles
- Building & energy technology** Blower test benches; Examination of cooker hoods, ventilation systems, etc.
- Fluid & valve technology:** Characteristic line determination for valves
- Aviation:** Testing of air conditioning components
- Gas & flow measurement technology** Test of fans with measuring equipment



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Measurement methods

Laminar Flow Element (LFE): Flow measurement according to differential pressure principle.

- Measurement range up to 1:100 - Volume flow up to approx. 5,000 m³/h
- Measurement accuracy up to 0.5% MV
- Typical differential pressure up to 25 hPa
- Low pressure loss



Venturi nozzles: Flow measurement according to differential pressure principle.

- Measurement range up to 1:10 - Flow rate up to 100,000 m³/h
- Measurement accuracy up to 1% MV
- Typical differential pressure up to 100 mbar (freely selectable)
- Remaining pressure loss approx. 20 % of the differential pressure



Wilson Grid Flow Sensor: Pitot tube flow measurement.

- Measurement range up to 1:10 - Flow rate up to 20,000 m³/h
- Measurement accuracy up to 0.5% MV
- Remaining pressure loss approx. 30% of the differential pressure



Orifice: Flow measurement according to differential pressure principle.

- Measurement range 1:10 - Volume flow according to nominal values
- Measurement accuracy up to 1% MV
- Remaining pressure loss approx. 80% of the differential pressure



Ultrasonic: Flow measurement according to ultrasonic principle.

- Measurement range up to 1:100 - Volume flow up to 100,000 m³/h
- Measurement accuracy up to 0.5% MV
- Remaining pressure loss < 5 hPa



Similar to figure

Flow ranges and application examples



Contact us and tell us your individual requirements.



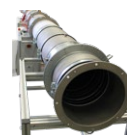
LMF® - flow measurement system

BTB175



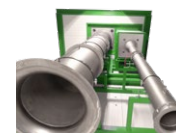
LMF® - flow measurement system

BTB1500



Passive measuring system (measuring orifice)

BTB6000



VMF® - flow measurement system

BTB60,000



LMF® - flow measurement system

BTB100



LMF® - flow measurement system

BTB300



VMF® - flow measurement system

BTB3000



LFE measurement sections & Wilson Grid Flow

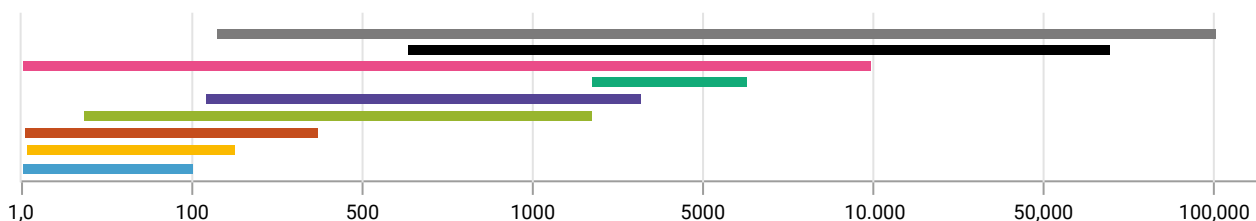
BTB10,000



Ultrasonic measurement system

BTB100,000

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Volume flow m³/h



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Configuration sheet

Compact characteristic curve test benches
According to DIN EN ISO 5801
Pressure- flow measurement systems

General data

<input type="checkbox"/>	Suction-side chamber test bench	<input type="checkbox"/>
<input type="checkbox"/>	Pressure-side chamber test bench	<input type="checkbox"/>
<input type="checkbox"/>	Bidirectional chamber test bench (switchable suction-pressure side)	<input type="checkbox"/>

	Min.	Max.	
Test piece-Ø:	<input type="text"/>	<input type="text"/>	mm
Chamber pressure:	<input type="text"/>	<input type="text"/>	Pa
Volume flow:	<input type="text"/>	<input type="text"/>	m³/h

Measurement accuracy volume flow

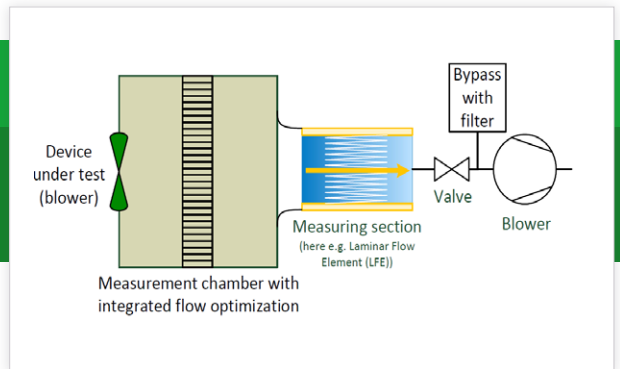
<input type="checkbox"/>	Standard measurement accuracy: ±1%
<input type="checkbox"/>	Or: Desired measurement accuracy: ± <input type="text"/>

Additional measured variables

	Min.	Max.	
Optical speed measurement test piece:	<input type="text"/>	<input type="text"/>	1/min
<u>Electrical supply for test piece:</u>			
Voltage:	<input type="text"/>	<input type="text"/>	V
Current:	<input type="text"/>	<input type="text"/>	A
Frequency:	<input type="text"/>	<input type="text"/>	Hz
Ambient conditions (weather station)	<input type="checkbox"/>		
Absolute pressure / temperature / relative humidity			

Additional comments or requirements

(e.g. acoustics, space, sensors, and other)



Technology scheme / construction scheme



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