

WÖHLER

**Operating Manual
Blower Check**



Wöhler BC 600

Order no. 24577 – 2021-02-16

The measure of technology

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1 General

1.1 Information about this operating manual



1.2 Symbols used in this operating manual

Read this operating manual carefully. It will enable you to operate the Wöhler BC 600 safely. Please keep this operating manual in a safe place for future reference.

The Wöhler BC 600 must be used only by professionally trained personnel exclusively for the purpose for which it was designed.

We accept no responsibility for any damage or loss resulting from any failure to observe this operating manual.

This operating manual is printed on eco-friendly recycled paper.



WARNING!

Highlights hazards. Failure to observe this information risks injury or death.



CAUTION!

Highlights risks that can lead to damage occurring to the device or the data files.



NOTE!

Highlights tips and other useful information.

1.3 Proper use

The Wöhler BC 600 Blower Check is used to detect air leakages as well as to determine the air tightness of building envelopes to DIN EN 13829 / ISO 9972.

The device is designed to be used for technical measurements; it must not be used to provide a permanent supply of air.

The blower fan is connected to a mobile device via WLAN (iOS or Android). The blower fan is controlled using the Wöhler BC 600 app on a mobile device.

In future it will be possible to connect and control up to four Wöhler BC 600 Blower Check devices via a single WLAN access point. This cutting edge functionality will make it possible to carry out measurements on large buildings using several devices simultaneously.

Any other use is considered improper use.

1.4 Country specific features

A country code is stored in the BC 600 firmware, which determines the language and country-specific requirements for the measurement.

If the Wöhler BC 600 app is started before the mobile device has ever been connected to a BC 600 fan unit, the app uses the system language of the mobile device.

If the user connects the app to a Wöhler BC 600, the app reads its country code and uses it from this point on. The country code is decisive for:

- the language of the app, the report and the manual
- the selectable requirements for the measurement.

2 How it works

2.1 Measuring principle

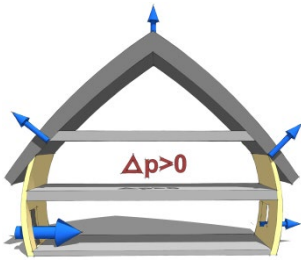


Fig. 1: Air flows—positive pressure method,

Wöhler BC 600 mounted in the doorway

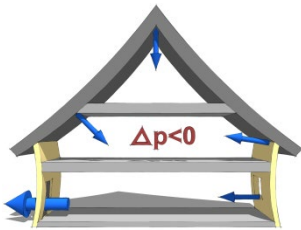


Fig. 2: Air flows—negative pressure method,

Wöhler BC 600 mounted in the doorway

2.2 Operating the device

The device is operated using the Wöhler BC 600 app, which can be downloaded free of charge to mobile devices running Android or iOS. It is also possible to manage and evaluate the measurement data in the app following a test. It is equally possible to print and/or send a measurement certificate via the app. That means no operating unit is required to control the device and no additional software is required to evaluate the data.

It is also possible to search for leakages without using the app. To do so, press the operating key on the blower fan.

The connection between the blower fan and the mobile device is established via a WLAN network created by the blower fan.

2.3 Multiple device mode



NOTE!

The multiple device mode is presently not available. Future versions of the app will include multiple device mode functionality.

The Wöhler BC 600 app makes it possible to carry out a measurement with up to four Wöhler BC 600 devices simultaneously. That makes it possible to determine the leakage rate of buildings with very large interior volumes or very leaky buildings (apartment buildings, gymnasias etc.) without having to divide the building into sections. That ensures it is possible to avoid disturbing influencing factors falsifying the results between sets of measurements. In that case the WLAN network used is created by an external router. The app also controls the individual devices during the measurement process carried out with several devices.

The app displays the overall results of all of the devices used. However, the tester is also able to retrieve the measurement data of the individual devices to be able to determine characteristics specific to individual measurement positions.

3 General safety instructions

3.1 Setup and installation

- The Wöhler BC 600 must be used only by skilled personnel exclusively for the purpose for which it was designed.
- Prevent children gaining access to the device at all times.
- Always visually inspect the device before using. In particular, the housing, cables and tubes must not exhibit any signs of damage. Ensure also that no moisture has ingressed the blower fan.
- Make sure the device is stable; use the envisaged mounting options where required.
- Make sure the ventilation slots are open and remain free of dust to allow the device to be sufficiently cooled.
- When connecting the blower fan use only cables with a grounding connection. Make sure the conductor cross-sections of any required extension lead are sufficiently dimensioned.
- Extinguish any open fires in the test area.
- When not securely installed the fan must only be operated at low speeds to prevent the device tipping over.

3.2 Ongoing operation



- Wear hearing protectors when the fan is operating at high speeds.
- It is strictly forbidden to operate the device in wet or damp environments.
- Listen to the noise the blower fan makes when starting up. Power down the blower fan at the main switch and disconnect the power plug if you hear any unusual noises.
- People must maintain a safe distance to the blower fan unit when it is in operation. Do not under any circumstances insert your fingers or objects through the fan grilles.

- Make sure there are no restrictions preventing the flow of conveyed air on the inlet and outlet sides. There is a risk that hair, clothing and construction material could be sucked into the fan. Furthermore, restrictions to the flow of air can falsify the measurement result.
- Avoid operating the blower fan at high speeds for too long without breaks during very warm weather in particular, as this risks the device overheating.
- Always switch off the blower fan and wait for the fan blades to stop before moving the unit. Disconnect the power plug to be on the safe side.
- Repairs must only be undertaken by trained, skilled personnel from Wöhler Technik GmbH.
- Always disconnect the device from the power supply before cleaning and inspecting.
- Protect the data stored in the Wöhler BC 600 app under Customer Management against unauthorized access by third parties. Make use of the security technology offered by the operating system of your mobile device.

3.3 Maintenance

3.4 Data security

3.5 Scope of supply of the standard version

Device	Basic features
Wöhler BC 600 Blower Check	1 blower fan unit
	1 cover to measure the zero-flow pressure difference
	Telescopic rod
	1 connection cable 2.5 m
	2 capillary tubes
	18 clamps 220 mm
	4 clamps 120 mm
	Clamps in plastic case
	1 fan strap, see Fig. 11
	1 lashing belt, see Fig. 23
	1 cloth door panel 1.5 x 2.6 m with fan strap
	1 transport bag
	Hexagon socket key to tighten the clamps of the telescopic rod

3.6 Transport



WARNING!

It is imperative that the Wöhler BC 600 is switched off before being moved.



CAUTION!

Do not place the blower with the motor facing down if it is to be laid flat for transporting or storage purposes; instead, make sure it rests on the back of the unit.

To avoid damage occurring during transport it is imperative to transport the device in the transport bag included in the scope of supply.

3.7 Disposal



Do not dispose of electronic equipment along with household waste. Dispose of electronic equipment in accordance with applicable environmental regulations.

3.8 Manufacturer's address

Wöhler Technik GmbH

Wöhler-Platz 1
33181 Bad Wünnenberg
Tel.: +49 2953 73-100
Fax: +49 2953 73-96100
Email: info@woehler.de

4 Specifications

4.1 Measurement values

Differential pressure	
Range	-100 .. 100 Pa
Resolution	0.1 Pa
Accuracy	Max of 0.25 Pa or 1% of measurement
Air flow rate at 50 Pa (extrapolated)	
Range	15 .. 6000 m ³ /h
Resolution	0.1 m ³ /h
Accuracy	+/- 5% or 1.5 m ³ /h (the respective higher value applies)
Air temperature	
Range	-20 .. 50 °C
Resolution	0.1 °C
Accuracy	+/- 0.5 °C
Absolute pressure	
Range	300 .. 1200 hPa
Resolution	0.1 hPa
Accuracy	+/- 3 hPa
Relative humidity	
Range	20 .. 80% RH
Resolution	0.1% RH
Accuracy	+/- 5% RH

4.2 Device data

Power supply	220 ... 230V AC, 50 ... 60 Hz
Max. current consumption	6.5 A
Degree of protection	IP 21
Dimensions (W x H x D)	571 x 726 x 170 mm
Weight	11.4 kg
Interfaces	WLAN (802.11 b/g/n) with WPA2 encryption
Connections	Inlet connector, differential pressure tubes
Storage temperature	-20 to 50 °C
Operating temperature	5 to 40 °C
Recommended calibration interval	Every 2 years

4.3 Cloth door panel

Dimensions	1.80 m x 2.80 m
Opening to mount blower fan	Ø 525 mm

4.4 Clamps (wide)

Max. clamping range	220 mm
Weight	0.155 kg
Dimensions (W x H x D)	220 x 50 x 141 mm

4.5 Clamps (narrow)

Max. clamping range	120 mm
Weight	0.067 kg
Dimensions (W x H x D)	120 x 48 x 124 mm

4.6 Installation frame

Min. installation opening (W x H)	0.8 x 0.9 m
Max. installation opening (W x H)	1.25 x 2.3 m
Weight	12 kg

4.7 App

Supported operating systems	Android (4.0.3 or later), iOS (6.1 or later) Windows 10
Other minimum requirements	WLAN
Recommended PDF reader app (to be installed separately on the mobile device)	Adobe Acrobat Reader

4.8 Assembly and connections

4.8.1 Blower fan

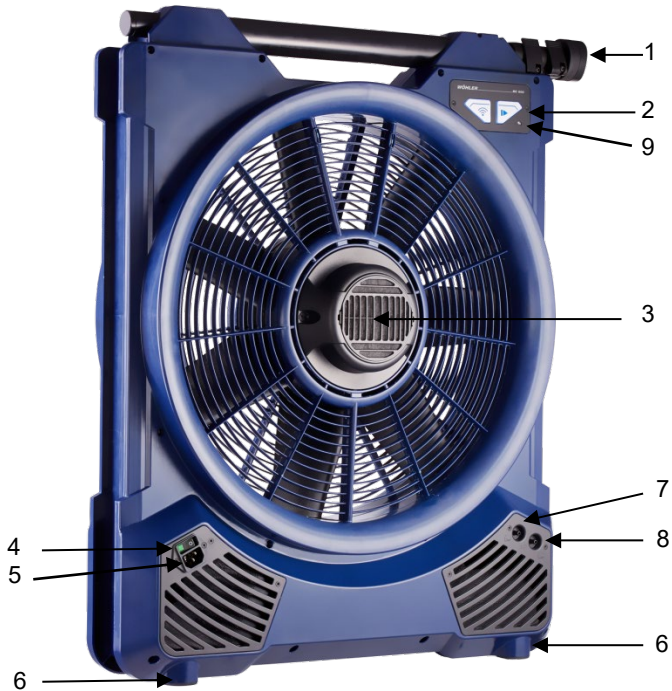


Fig. 3: Blower fan unit Wöhler BC 600, front view

Legend

- 1 Telescopic rod
- 2 Operating keys
- 3 Motor cover with filter
- 4 Main switch,
- 5 power supply connection
- 6 Supporting feet
- 7 Pressure connection
(for indoor capillary tube)
- 8 Pressure connection
(for outdoor capillary tube)
- 9 Infrared interface to transmit data to the thermal printer

4.8.2 Main switch and power supply connection



WARNING!

If a malfunction occurs, switch off the blower fan unit at the main switch (1) and disconnect the power plug (2).



Fig. 4: Main switch

4.8.3 Connections – capillary tubes

1 route the capillary tube into the building

2 route the capillary tube out of the building

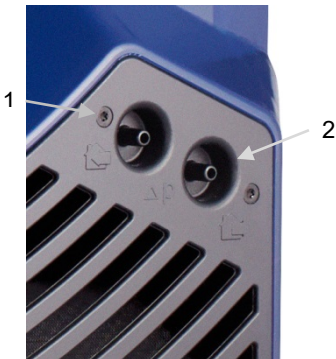


Fig. 5: Ports to connect capillary tubes for differential pressure measurements

4.8.4 Operating keys

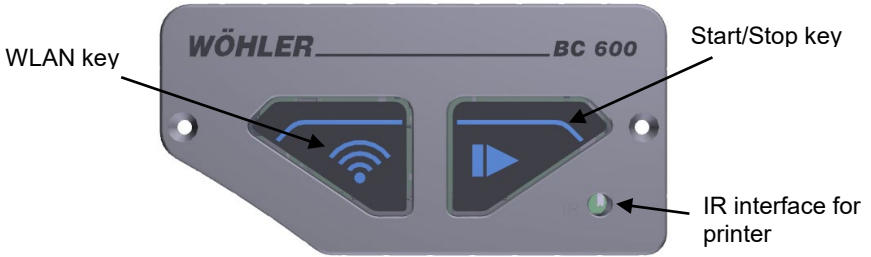


Fig. 6: Operating keys and IR interface

WLAN key

Situation	WLAN key
Immediately after the Wöhler BC 600 is switched on	Flashes regularly
After a mobile device connects to the access point of the Wöhler BC 600	Alternately flashes twice quickly and goes off
WLAN connection successfully established via the app	Lights up continuously
<ul style="list-style-type: none"> – Multiple device mode – Wöhler BC 600 is waiting for a connection to the access point 	Flashes very quickly
<ul style="list-style-type: none"> – Multiple device mode – Wöhler BC 600 is connected to the access point 	Lights up permanently with short interruptions

Start/Stop key

Situation	Start/Stop key
When zeroing the differential pressure sensor	Flashes quickly
<ul style="list-style-type: none"> – Measurement in progress – Set target differential pressure not yet reached 	Flashes
<ul style="list-style-type: none"> – Measurement in progress – Set target differential pressure reached 	Lights up continuously
<ul style="list-style-type: none"> – Measurement in progress – Wöhler BC 600 recognizes stable pressure level 	Flickers briefly

5 Preparing building leakage test

5.1 Building preparation to DIN EN 13829

DIN EN 13829 offers 2 methods for building preparation: Method A and method B.



NOTE!

Checklists containing precise notes on building preparation in accordance with method A and method B are provided in Annex 3 of the FLiB supplement to DIN EN 13829, FLiB information sheet 05/ 2015. These checklists are stored in the Wöhler BC 600 app, see chapter 8.7.1.

5.1.1 Method A: Testing a building in use

Method A contains stricter requirements. Method A is used when testing the building in the condition in which it is used. For test purposes all intentional openings to the outside (for example, cat flaps and letter boxes) are closed.

Switch off the extractor hood.

5.1.2 Method B: Testing the building envelope for leaks

When method B is used all adjustable openings are closed and all other intentional openings are sealed.

This method is required in the currently valid German Energy Saving Ordinance (EnEV 2014). Seal the extractor hood using a sealing bladder.

5.2 Building preparation to ISO 9972

The ISO 9972 offers 3 methods for building preparation. The corresponding checklists are stored in the Wöhler BC 600 app.

- | | |
|--|---|
| 5.2.1 Method 1: Testing a building in in use | All natural ventilation openings as well as openings for mechanical ventilation or air conditioning openings must be closed throughout the whole building. |
| 5.2.2 Method 2: Testing the building envelope | All intentional openings must be sealed and all doors, windows and trapdoors closed. |
| 5.2.3 Method 3: Testing the building for a specific purpose | All intentional openings must be adapted to the purpose of the measurement in accordance with the corresponding applicable standards or guidelines of the respective country. |



NOTE!

If it is not possible to seal openings with a sealing bladder, then they must be sealed with the panel and duct tape or similar material.

6 Measurement conditions to DIN EN 13829 /ISO 9972

6.1 Time of measurement

DIN EN 13829: After completion of the building envelope

ISO 9972: After completion of the airtight layer



NOTE!

However, for practical purposes it is better to carry out the measurement as early as possible and, where possible, before top surfaces and coatings are installed. This ensures the amount of work required to patch up or carry out repairs is kept as low as possible.

6.2 Weather conditions

Suitable weather conditions are fundamental to meaningful measurements. Ideal weather conditions are understood to be minor temperature differences between indoors and outdoors as well as low wind speeds.



NOTE!

If necessary, lower the temperature difference by altering the indoor temperature, for example by opening a window.

To comply with a measurement to DIN EN 13829 the following limit values must not be exceeded:

1. The product obtained from the temperature difference and the height of the building envelope must be less than 500 mK



NOTE!

The value 500 mK is stated in the DIN EN 13829. Due to the latest insights and practical experience the trade association Airtightness in Construction (FLiB) is of the view that the product obtained from the building height and the temperature difference must not exceed a maximum value of 250 mK, see FLiB manual Building Airtightness, September 2008, page 52 (correspondingly, ISO 9972 also states the value 250 mK).

2. Wind speed less than 6 m/s (Beaufort 3)

**NOTE!***To determine the wind speed refer to Table 1.**Table 1: Beaufort wind scale, reproduced from FLiB: Supplement to DIN EN 13829, April 2008*

Beau fort	Name	Wind speed (m/s)	Description
0	windless	< 0,45	No wind, smoke rises vertically
1	Quiet	0,45 – 1,34	Wind direction can only be determined by smoke (not by wind vane)
2	Light breeze	1,8 – 3,1	Wind can be felt in the face, leaves mover, wind vane moves
3	Weak breeze	3,6 – 5,4	Leaves and thin branches move; wind stretches a pennant
4	Moderate breeze	5,8 – 8	Wind is lifting dust and loose paper; wind is moving twigs and thin branches
5	Fresh breeze	8,5 – 10,7	Small trees begin to sway; there are foam heads on lakes
6	Strong wind	11,2 – 13,9	Strong branches in motion; umbrellas difficult to use
7	Stiff wind	14,3 – 17	Whole trees in motion; noticeable inhibition when walking against the wind
8	Stormy wind	17,4 – 20,6	Breaks branches from trees; makes walking considerably more difficult

7 Setting up and dismantling the Wöhler BC 600

7.1 Installation

It is possible to fit the Wöhler BC 600 in a doorway or window opening.



NOTE!

In difficult installation situations, for example a building shell, we recommend fitting the blower fan with an additional installation frame, see accessories. In that case the blower fan is installed in accordance with the operating manual of the additional installation frame.

- Min. installation opening: 0.8 m x 0.9 m
- Max. installation opening 1.25 x 2.3 m



NOTE!

Doors overwhelmingly exhibit bigger leaks than windows. Consequently, we recommend you give preference to installing the Wöhler BC 600 in a suitable window opening in the lowest floor level to be measured, if measuring with a single device. If there are different types of windows in the building, choose the window that exhibits the lowest leakage.

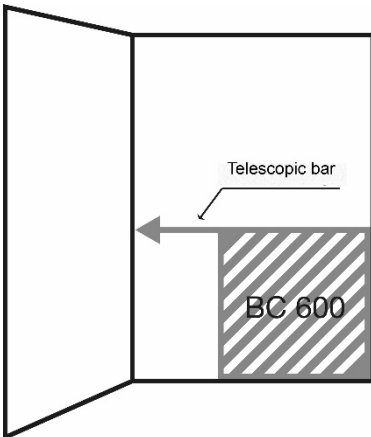


Fig. 7: Blower fan installed opposite the door or window hinges

Never install the Wöhler BC 600 in the middle of the opening, but rather always aligned flush on the left or the right.

- First select a suitable installation position for the Wöhler BC 600. This should be opposite the door or window hinges.



Fig. 8: Inserting the telescopic rod

Secure the cloth door panel to the blower fan unit

- Insert the telescopic rod into the blower fan so that it can be extended on the desired side.



NOTE!

A zipper facilitates routing the lines through the panel. This must remain closed during installation and when carrying out measurements. Irrespective of the installation situation the panel is always affixed to the rear of the device housing. That ensures the operating unit on the front of the device remains accessible at all times.

To affix the panel to the blower fan unit proceed as follows:

- Pull the fan hole in the panel over the edge of the blower fan.



NOTE!

Make sure the panel is placed the right way round on the blower fan unit.

Blower fan installation aligned flush left: The panel extends to the right

Blower fan installation aligned flush right: The panel extends to the left

NOTE!

There are two markings in the shape of a triangle on the blower fan. To ensure the panel is aligned straight make sure the marker band woven into the panel is between the markings.



Fig. 9: Arrow indicates marking on the fan



Fig. 10: Thumbs indicate marker band on the panel.



Fig. 11: Pull fan strap around the edge of the blower fan

- A fan strap is located in the panel opening.
- Fasten the fan strap so that the panel securely encloses the edge of the blower fan.



Fig. 12: Fan strap latch



NOTE!

If it is necessary to adjust the fan strap, it is possible to adjust its length by turning the latch accordingly.



Fig. 13: Clamping the telescopic rod in the window opening

- Place the blower fan aligned flush left or right in the door or window. The blower fan unit is equipped with a two-fold telescoping and extendable telescopic rod.
- Now clamp the telescopic rod in the door or window.



Fig. 14: Close-up view of the telescopic rod with clamps (1) and (2) as well as the head (3)

- To adjust the telescopic rod release both of the clamps, extend the telescopic rod to the desired length and then close the clamps again.
- Tighten the telescopic rod securely by turning the head (the rod head has a thread).



NOTE!

It is recommended that you screw back the head fully after dismantling the blower fan.

Setting up and dismantling the Wöhler BC 600

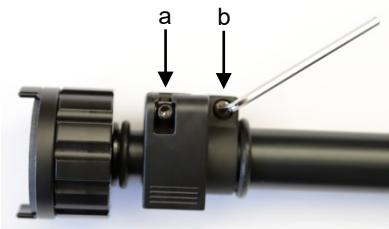


Fig. 15: Adjusting the clamps

- **If necessary**, adjust the clamps on the telescopic rod using the hexagon socket key included in the scope of supply.
 - a) To adjust the clamping force
 - b) To secure the clamp collar on the telescopic rod



CAUTION!

To ensure the screws do not get damaged always use the imperial sized hexagon socket key included in the scope of supply.



Fig. 16: Clamping the blower fan in a window with the telescopic rod

- Then clamp the door panel in the door or window opening using the clamps. When clamping the panel make sure it has as few folds as possible; ensure also that it is well secured between the frame and the blower fan. That is the only way to guarantee airtightness.



Fig. 17: Securing the panel with clamps

- First secure the panel roughly at first with 1-2 clamps at the top of the door/window opening.



Fig. 18: Wide and narrow clamps positioned

- Now tension the panel in the door or window. Begin in the corners.
- Secure the panel initially with wide clamps.



NOTE!

The clamps can be positioned next to one another or overlapping.

- Position the narrow clamps in the gaps.

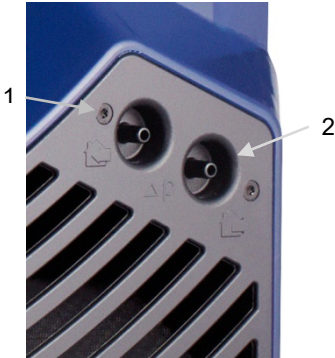


Fig. 19: Connections – capillary tubes

- Push the capillary tubes onto the pressure ports.
- Route the indoor capillary tube (1) into the building.



Fig. 20: The capillary tube is routed outdoors through the panel

- Open the zipper on the panel.
- Route the outdoor capillary tube (2) through the open zipper of the panel.
- Close the zipper.



NOTE!

Make sure the ends of the capillary tubes are positioned away from the flow of air.



Fig. 21: Blower fan with power cable and capillary tubes

- Connect the blower fan to the power supply using the power cable.

7.2 Dismantling

- Dismantle the test setup in the reverse order.



CAUTION!

Make sure the panel is completely dry before folding it together (risk of fungal growth).

Allow the blower fan to cool down for 2-3 minutes

before stowing it in the transport bag.



Fig. 22: Case with clamps

- It is essential that you place the clamps into the cutouts in the case.

There are two ways to stow the panel:

- Open the fan strap and remove the panel from the blower fan. Fold the panel and pack it into the front pocket of the Wöhler BC 600 transport bag.

or

Setting up and dismantling the Wöhler BC 600



- Keep the panel secured to the blower fan.
- Fold the panel carefully together so it is the same size as the blower fan.
- Place the lashing belt included in the scope of supply around the blower fan and panel.
- Pull the lashing belt tight so that the panel cannot slide.
- Pack the blower fan and panel into the Wöhler BC 600 transport bag

(Recommended when used a lot).

Fig. 23: Panel secured to the blower fan by the lashing belt for transport

- Pull the telescopic rod out of the blower fan and insert it into the side pocket of the Wöhler BC 600 transport bag.

There is a compartment in the front pocket of the transport bag in which you can keep a tablet and a note pad.

8 Operating the Wöhler BC 600 via the app

The Wöhler BC 600 app is designed to the control the Wöhler BC 600 as well as manage and evaluate data. It can be downloaded to any mobile device running either the Android or iOS operating system.



NOTE!

The Wöhler BC 600 app is the same for all mobile devices and operating systems. If the service technician uses a different mobile device to evaluate the data than used for the measurement, the technician will be presented with exactly the same screen view.

8.1 Downloading the app



Fig. 24: Icon of the Wöhler BC 600 app

8.2 Updating the app

- Depending on the operating system of your mobile device go to either the Google Play Store (Android), the App Store (iOS) or the Windows Store.
- Download the Wöhler BC 600 app free of charge to your mobile device.
- The icon “Wöhler BC 600 app” will subsequently appear on your start screen.

A banner is displayed in the notifications of your mobile device to inform you when the Wöhler BC 600 app has been updated. As a rule the app is updated automatically as soon as a new version is available. Depending on the settings of your mobile device it is possible that the app will not be automatically updated. In that case proceed as follows:

- Go to the Google Play Store (Android), the App Store (Apple) or the Windows Store.
- Download the update without deinstalling the previous version as this will ensure measurements and customer data stored to date are retained.



NOTE!

As the app is continuously adapted to changing normative requirements, entries are added to the data structure (new norms, room list, etc.). It is therefore not always possible to ensure complete downward compatibility, as older apps will not be able to recognize and interpret them. It is therefore possible that data exported with a newer app version cannot be read correctly by older app versions. With a newer version of the app, however, older data can always be imported again without problems.

8.3 Overview of functions

- ✓ Measurements using a single device or multiple devices simultaneously
- ✓ Leakage test
- ✓ Multi-point tests, including to DIN EN 13829 (Methods A and B) as well as to ISO 9972 (Methods 1, 2 and 3)
- ✓ Standard and associated limit values automat-

ically selected and applied after the applicable requirements are determined (for example, the German Energy Saving Ordinance (EnEV 2014), PHI 2016 etc.)

- ✓ Customer management
- ✓ Generate reports
- ✓ User guidance

If you use a mobile device running an Android version higher than 6.0, it is imperative that you permit the app to store data on your device so it can generate reports.

If you have deactivated permission to store data on your device, the following request is displayed when the app is launched

“Allow BC600_App to access photos, media and files on your device?”

- **It is essential that you tap “Allow” in response!**

You will then be able to use all app functions without any restrictions.

If you deny the request the following warning notice will appear repeatedly in the app “It is not possible to use the full range of functions if you do not grant permission to store data”.

If you confirm this message with OK, you will automatically go to your App settings (Settings > Apps > BC600_App)

- Tap permissions
- Activate Access storage.

You will then be able to use all app functions without any restrictions.

8.4 Customer management

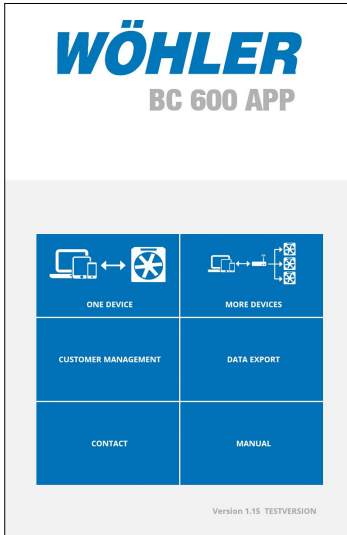


Fig. 25: Home screen of the Wöhler BC 600 app

8.4.1 Creating or editing customer files

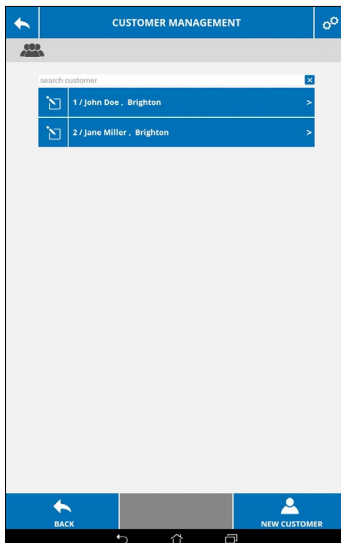


Fig. 26: Customer management

Before starting the measurement it is recommended that you create the corresponding customer, project and object files where you will store the acquired measurement data following the measurement. However, it is also possible to create the files after measurement prior to saving the values. It is possible to create the files irrespective of if the app is connected to the Wöhler BC 600 or not.

- On the Home screen tap **CUSTOMER MANAGEMENT**.

The Customer management menu opens where you can search for customer files, create new customer files and edit existing customer files.

- To search for a customer enter the name or the customer number in the search field.
- To create a new customer file, tap **NEW CUSTOMER**.



NOTE!

When you create a new customer enter the address of the customer under Customer data and the address of the object to be tested under Object data. If both addresses are the same it is possible to apply the customer address to the project data and the object data fields. If the addresses are not the same, enter the object address in the appropriate field.

The screenshot shows the 'EDIT CUSTOMER' screen in an app. At the top, there is a blue header with a back arrow on the left, the text 'EDIT CUSTOMER' in the center, and a menu icon on the right. Below the header, the screen is titled 'Customer data' and contains a form with the following fields: 'CUSTOMER NUMBER 3' (with a search icon), 'First name John', 'Last name Doe', 'Title', 'Company', 'Street', 'Area code', 'City', 'Country', 'Phone', 'Mobile', 'Fax', 'Email', and 'Website'. A 'CONTACT' label is positioned to the left of the 'City' field. At the bottom, there is a navigation bar with three buttons: 'CANCEL' (with a red X icon), 'DELETE' (with a trash can icon), and 'SAVE' (with a document icon).

Fig. 27: Entering customer data

A dialog box opens both when creating a new customer and when editing customer data, where it is possible to enter customer data via the keyboard.

- To save the information you entered tap **SAVE**.

OR

- Tap **DELETE** to delete the data record.

EDIT PROJECT

3 John Doe

Project data

Shorttitle Project 2020

COMMENT

REUSE CUSTOMER CONTACT

First name John

Last name Doe

Title

Company

Street

Area code

CONTACT

City

Country

Phone

Mobile

Fax

Email

Website

CANCEL DELETE SAVE

Fig. 28: Creating a new project

EDIT OBJECT

3 John Doe

Project 1 Project 2020

Object data

Shorttitle Object 2020

COMMENT

REUSE PROJECT CONTACT

First name John

Last name Doe

Title

Company

Street

Area code

CONTACT

City

Country

Phone

Mobile

Fax

Email

Website

CANCEL DELETE SAVE

Fig. 29: Enter object data: Entering address of the object to be tested

You have the option to create and assign one or several projects and one or several objects to each customer.

- To do so tap NEW PROJECT.
 - Enter the corresponding data and comments.
- You have the option to apply the address data previously stored in customer contacts.
- Tap SAVE

You can now create a new object.

- To do so tap NEW OBJECT.
- In this field enter the address of the object to be tested. It is also possible to apply the project address.

Fig. 30: Enter room data

Room	Length m	Width m	Area m ²	Height m	Volume m ³
Living room	4.23	4.54	19.20	2.45	47.05
Entry hall	3.10	1.68	5.21	2.45	12.76
Bathroom 1	2.00	2.40	4.80	2.45	11.76
Kitchen	4.10	3.80	15.58	2.45	38.17
Utility room	3.85	2.98	11.47	2.45	28.11
Storage room 1			6.00	2.45	14.70
Bathroom 2	3.00	4.40	13.20	2.40	31.68
Child 1	4.50	4.10	18.45	2.40	44.28
Child 2			20.00	2.40	48.00
Storage room 2					25.00
Bedroom	4.20	5.05	21.21	2.40	50.90
Hallway	5.00	1.94	9.70	2.40	23.28
Attic	9.75	6.80	66.30	2.20	145.86
Total volume / m ³					530.15

Fig. 31: Roomlist

DIN EN ISO 9972 requires a comprehensible documentation of the inner volume. Therefore, when creating or editing the object, you have the option of creating a room list for which the app automatically calculates the inner volume.

- Tap on the building information of the object.
- Enter the room data.

After you have entered the length, width and height, the app automatically calculates the area and volume. The area and height or directly the volume can also be entered.

The data of the room list is documented in the PDF report.

- Tap SAVE
- The Customer management menu then opens.
- To edit a previously created customer file, tap the Edit icon on the left next to the file.

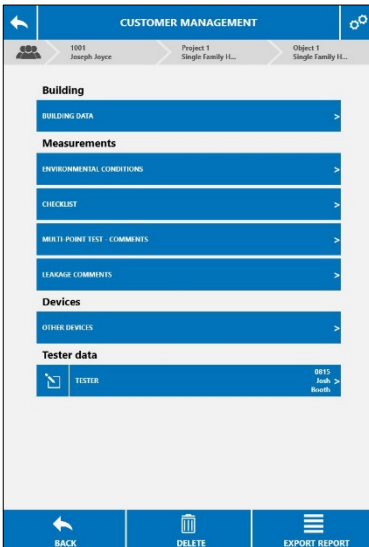


Fig. 32: Customer management > Customer > Project > Object

- In CUSTOMER MANAGEMENT tap the arrow (>) in the same line as the customer file (see Fig. 26) to access the previously created projects, properties and multi-point tests.

These fields are dimmed (unavailable) prior to the measurement, so it is not possible to enter any data.

After the measurement has been completed these fields are available (highlighted blue). You now have the option of editing or adding to the details (except the measurement data) prior to creating the protocol.



NOTE!

It is possible to create the test report in this view once the measurement is completed and all data has been entered (Export report key).

8.4.2 Deleting customer files



Fig. 33: Edit icon

- In the Customer management menu (see. Fig. 26) tap the Edit icon on the left next to the file you wish to delete.

The Customer data dialog box opens.

- Then tap the Delete icon.

8.5 Establishing contact

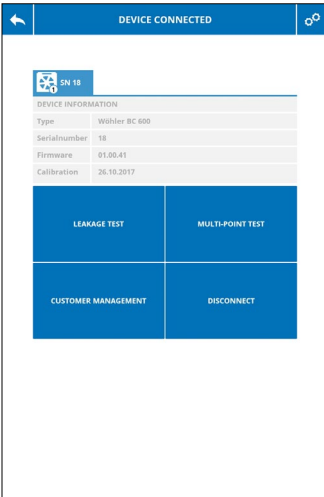


Fig. 34: Home screen Wöhler BC 600 app

- Tap the icon to launch the Wöhler BC 600 app.
- The Home screen opens.



NOTE!

Control fields active in the Wöhler BC 600 app are fundamentally highlighted by a dark blue background. Non-active fields are dimmed (unavailable).

8.5.1 Measuring with a Wöhler BC 600



Fig. 35: WLAN key indicated by an arrow

- Power on the Wöhler SM 600.
The Start key begins to flash after a few seconds. The WLAN key flashes continuously.
The Wöhler BC 600 Blower Check automatically creates its own WLAN network.



NOTE!

Generally speaking, the range of the WLAN network is approx. 100 m. Walls and obstructions lower the range.



Fig. 36: Icon "Measure with a single device"

- Tap "One device" in the app.
The mobile device will now search for devices to connect to via WLAN.



Fig. 37: Device connection

Configuring the mobile device

You are then requested to connect your mobile device to the Wöhler BC 600 via WLAN, if this has not yet happened.

- Tap cancel.

The mobile device automatically switches to the WLAN manager.

- (If this is prevented due to your settings, go to Settings > WLAN manager on your mobile device).
- Search for and select the **Wöhler BC 600** WLAN network.

Your device will be displayed as BC 600 + serial number in the WLAN manager on your device. The serial number of your Wöhler BC 600 is given on the rating plate on the rear of the blower fan.

Tap **Woehler BC600 SN xx** and then tap **Connect**.

- Enter the password (default password: 12345678)

Your mobile device will now connect to the Wöhler BC 600.



NOTE!

When WLAN is activated on the mobile device the Wöhler BC 600 will automatically connect with the app when it is switched on again.

- In the WLAN manager “Connected, no Internet” is displayed. Your mobile device is now able to communicate only with the Wöhler BC 600 via the app. It is not possible to use the Internet at the same time.
- Launch the Wöhler BC 600 app again and select “One device”.

The WLAN key on the Wöhler BC 600 will now light up permanently. > The WLAN connection between the Wöhler BC 600 and the mobile device has been established.

- You can now begin with measurements.

8.5.2 Measuring with several Wöhler BC 600 devices



NOTE!

Measuring with several Wöhler BC 600 devices is not yet possible with the current version of the Wöhler BC 600 app. However, future versions of the app will include multiple device mode functionality.

8.6 Leakage test

The leakage test serves to find weak points and larger leakages. It is named in ISO 9972 as part of the multi-point test. However, it can also be carried out separately, without performing a standard compliant multi-point test. The result is issued as an estimated n_{50} or q_{50} value, which can be used to assess the leak tightness of the building.

- In the main view select LEAKAGE TEST.
The following measurement view is displayed:

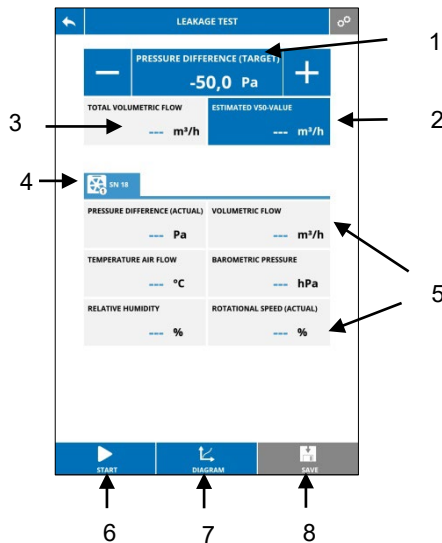


Fig. 38: Measurement view–leakage test

- 1 Input target pressure/speed
- 2 Select $V_{50}/n_{50}/q_{50}$
- 3 Volumetric flow (of all active devices)
- 4 Active devices; the values of the device highlighted are displayed
- 5 Measurement values of the active device
- 6 Start or stop measurement
- 7 Toggle measurement value view: graphic or numerical display
- 8 Save measurement values (active only when measurement stopped)

- Specify the PRESSURE DIFFERENCE (TARGET) (1). Alter the value using the +/- buttons or
- Tap the button PRESSURE DIFFERENCE (TARGET) and enter the desired value in the dialog box that opens.

The default value is -50 Pa. This value can be changed in the SETUP menu.



NOTE!

Generally speaking, preference should be given to a negative pressure measurement because it is easy to feel inflowing air and recognize leakages accordingly. A fog spray gun is suitable for this test, see Accessories. A positive pressure measurement can be a wise choice for old buildings, as this prevents noxious substances being drawn into the interior of the building. A fog machine is suitable for this case, see Accessories.

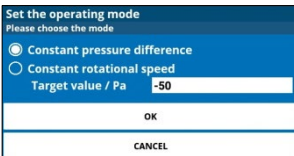


Fig. 39: Operating mode “constant rotational speed” for demonstration purposes only

It is possible to select a constant rotational speed instead of the constant pressure difference.



NOTE!

The option of specifying a constant rotational speed is provided as a test mode to test the device or to demonstrate the device or if it is not possible to reach the desired test pressure.

- To select this mode, stop measurements and tap the field “Pressure Difference (Target)” (see Fig. 38).

It is only possible to switch operating modes when the motor has been stopped.

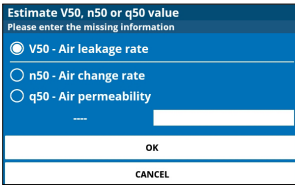


Fig. 40: Select V_{50} , n_{50} , q_{50} for leakage test

- In the measurement view LEAKAGE TEST (see Fig. 38: Measurement view–leakage test) go to the field ESTIMATED V50- VALUE.

The dialog box opposite opens.

- Select which estimated air leakage rate is to be displayed.



NOTE!

V_{50} : Air leakage rate at 50 Pa

n_{50} : Volume based air leakage rate (air change rate)

q_{50} : Envelop area based air leakage rate (air permeability)

- If you select n_{50} or q_{50} , enter the internal volume or rather the envelope area of the building to be tested or the building section. In addition tap n_{50} or q_{50} . The dialog box then becomes active.

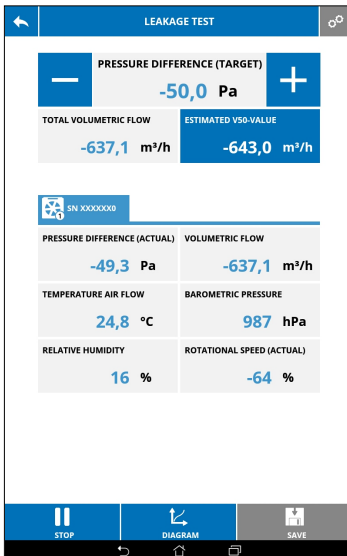


Fig. 41: Leakage test, measurement in progress

- Tap START to start the measurement.
 - Remove the cover from the fan.
- The view opposite is displayed.
- Tap the DIAGRAM-Field if you want to see the diagram view.

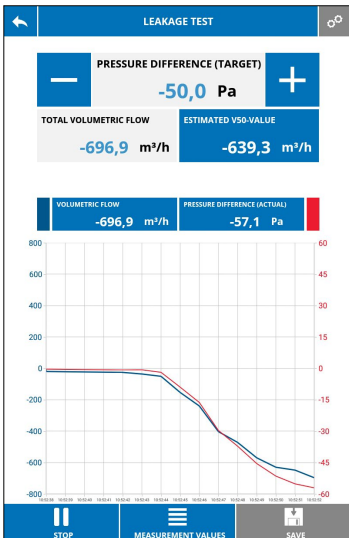


Fig. 42: Leakage test, graph view

- In the diagram view tap the MEASUREMENT VALUES button to return to the measurement values view.
- Now perform a leakage test. Useful aids can include an anemometer, an air current tube, fog spray gun, fog machine or a thermal imaging camera
- Tap STOP to end the measurement.

When the measurement is stopped, the SAVE button is available.

- Tap SAVE if you wish to save the measurement results.
- You will now switch to Customer management, see chapter 8.4
- Select the customer, the project and the object under which you wish to save the measurement data and tap OK to save the current measurement (or create a new customer, a project and an object and then save the measurement data under the new customer).



NOTE!

It is possible to carry out a leakage test without the app. However, in that case it is not possible to save the measurement values.

- Press the Start/Stop key when the device is powered on to start the leakage test and then subsequently to stop the test.

The leakage test will then be carried out at a negative pressure of 50 Pa. It is possible to alter this value under Settings in the app, see chapter 9.

8.7 Multi-point test

- On the Home screen tap “Multi-point test”.

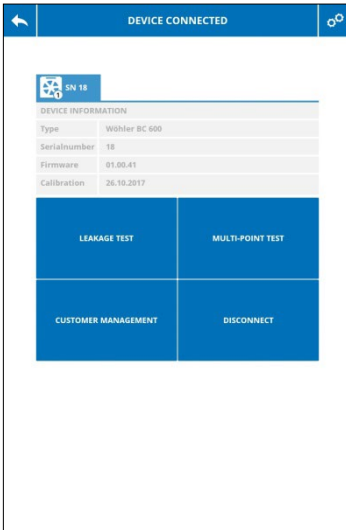


Fig. 43: Home screen

8.7.1 Selecting the measurement method

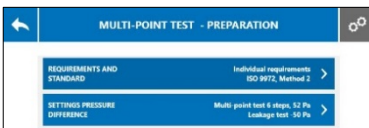


Fig. 44: Preparing the multi-point test

The dialog box opposite opens.

- Tap to open the drop-down list “Requirement and standard” in the dialog box and select the requirement .
- Select the requirements specified for that building.



Fig. 45: Selecting the requirements for the building

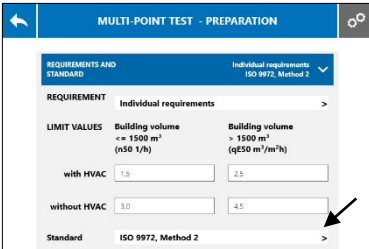


Fig. 47: Select the standard

Fig. 46: Selecting the standard

- Select the standard.

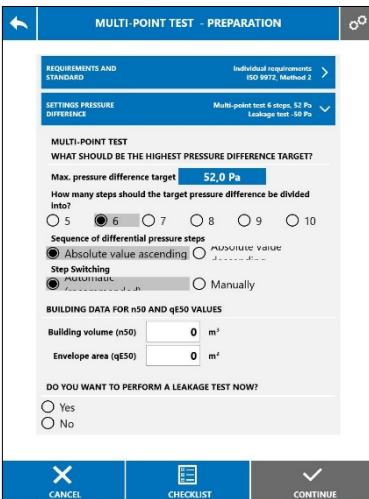


Fig. 48: Preparation of the multi-point test

The requirements/limit values that are applicable to the building in accordance with the specified standard are now automatically displayed on the display.

The measurement method that is to be applied in line with the selected requirement is also specified under the item “Standard”.



NOTE!

The user can also select a different measurement method (not recommended).

Notes on measurement method to ISO 9972

The unit names of the measured quantities differ in the standards as follows:

Measured quantity	DIN EN 13829	DIN EN ISO 9972
Air leakage rate at 50 Pa	\dot{V}_{50}	q_{50}
Air permeability of building envelope at 50 Pa $\frac{\dot{V}_{50}}{A_E}$	q_{50}	q_{E50}
Specific air leakage rate based on floor area at 50 Pa $\frac{\dot{V}_{50}}{A_F}$	W_{50}	q_{F50}

If you wish to carry out measurements according to the same measurement method, it is recommended that you define the measurement method in the Settings options (Setup menu), see chapter 9. It is also possible to define the maximum target differential pressure as well as the number of measurement steps.

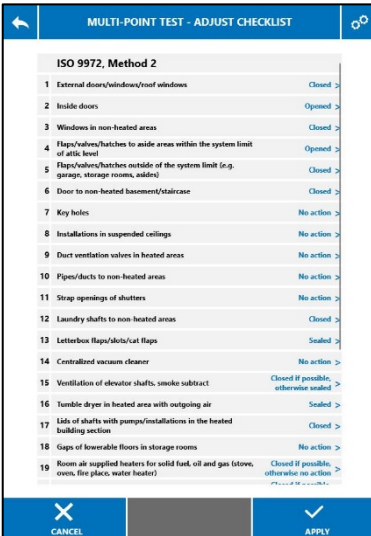


Fig. 49: Building preparation checklist

- Tap CHECKLIST in the view MULTI-POINT TEST - PREPARATION (Fig. 48) to display the Building preparation checklist (that requires that you have previously selected the measurement method, because the checklist is determined by the measurement method).
- Check the individual points on the checklist against the building to be tested and carry out the corresponding measures.



NOTE!

The requirements are set in accordance with FLiB recommendations, see chapter 5.1. If necessary, you can make changes to the checklist. It is essential that the changes are documented in the measurement protocol.

- To change the requirements tap the corresponding arrow (>) in the checklist. In the dialog box that opens make an appropriate selection again. You can also enter a comment.
- Tap APPLY to save the edited checklist. The edited checklist is included in the printout of the protocol following the measurement. The view MULTI-POINT TEST - PREPARATION is displayed again.

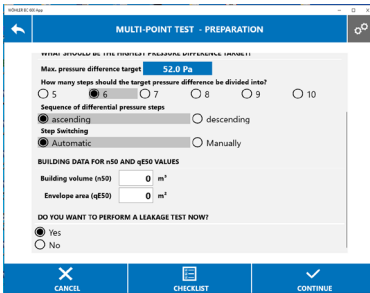


Fig. 50: Preset options for multi-point test

The maximum target differential pressure and steps with which the Wöhler BC 600 approaches this pressure difference are specified. This selection corresponds to the minimum requirements to ISO 9972.

- Where necessary change the preset max. target differential pressure and the number of steps to achieve more accurate measurement results.
- Sequence of differential pressure steps: Possibility to reverse the direction of the pressure steps, if this is advantageous for the concrete measuring task.
- Step Switching: Manual: The next step is only started after confirmation of the user. (e.g. manual protective pressure measurement, according to EN ISO 9972:2018-12, Annex NA.10.3).
- Select if a leakage test is to be initially selected.
- Then tap "CONTINUE".



NOTE!

The CONTINUE button is only active if the user has already selected a standard and has determined whether a leakage test should be carried out.



NOTE!

The maximum target pressure difference and the number of steps should be coordinated so that the resulting step size is less than 10 Pa. If exactly 10 Pa is selected (e.g. 5 steps up to 50 Pa), there is a risk that the step size will be larger than the maximum step size specified in the standards due to fluctuating environmental influences.

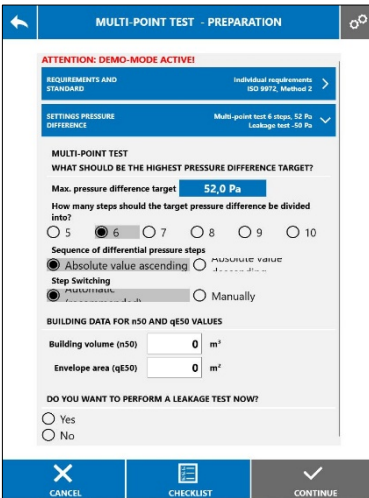


Fig. 51: Preset options Demo-Mode

If Demo-Mode was activated in the setup, the warning notice "Demo-Mode Active!" is displayed in red at the top of the view "Multi-point test - preparation".

- In this case go to the Settings menu prior to starting measurements and deactivate the Demo-Mode, see chapter 9.



NOTE!

It is not possible to perform a valid measurement in Demo-Mode.

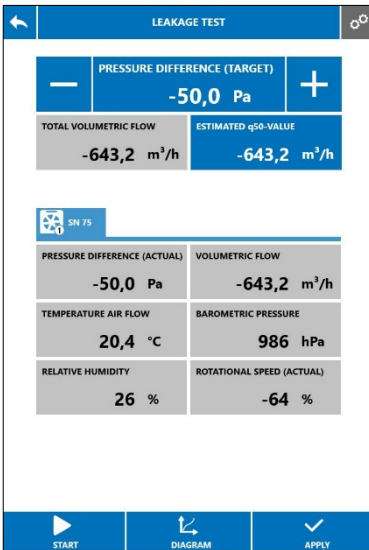


Fig. 52: Leakage test

To open the leakage test tap LEAKAGE TEST > YES.



NOTE!

The DIN EN 13829/ISO 9972 specifies the leakage test to be performed as a "Preliminary check".

- Perform a leakage test as described in chapter 8.6, if this has not already been carried out.
- After completing the measurement tap STOP and then **APPLY**.

The MULTI-POINT TEST - PREPARATION view opens in the display again

- Tap CONTINUE.

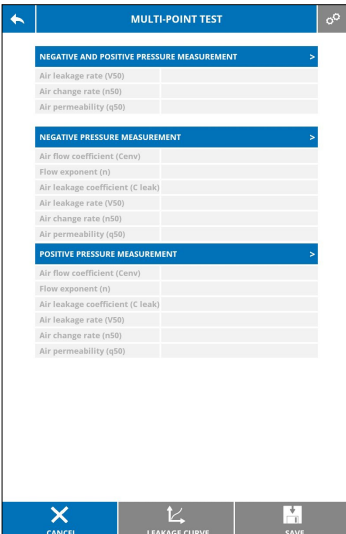


Fig. 53: The MULTI-POINT TEST view

The MULTI-POINT TEST view opens.

- First select if a negative pressure measurement is to be followed automatically by a positive pressure measurement or if only a respective negative pressure or positive pressure measurement is to be performed. Tap the respective arrow accordingly.
- If you select "negative pressure and positive pressure measurement", the Wöhler BC 600 will automatically perform both measurements in succession. It is not necessary to turn the fan, as the fan changes the direction of rotation.



NOTE!

DIN 13829 and ISO 9972 recommend incorporating two multi-point tests: one with positive pressure and one with negative pressure. If you select "negative pressure and positive pressure measurements", the Wöhler BC 600 automatically performs both tests in sequence. It is not necessary to make any conversions, because the fan changes the direction of rotation.

However, the standard allows for creating just one multi-point test at positive pressure or negative pressure.



NOTE!

If only one direction is measured, the Wöhler BC 600 can also measure only one air temperature (negative pressure measurement: inside temperature, positive pressure measurement: outside temperature). The respective other temperature can be manually added after the measurement to the object data.



NOTE!

The following measurement views are independent of whether measurements are made with just one or several Wöhler BC 600 devices. If measurements are made with several devices, the values of all devices are displayed in the measurement view. To view the measurement values of

the individual devices tap the button “More measurement values”.

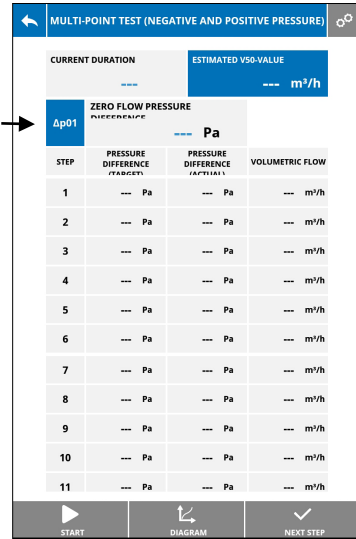


Fig. 54: Multi Point Test view, before the measurement of the zero-flow pressure difference

The measurement value view is displayed. However, the Start button is still dimmed (unavailable), so that it is not possible to start measurements.

It is possible to switch between the views of the estimated n_{50} , q_{50} and V_{50} values.

- To do so, tap the field ESTIMATED VALUE and select the desired view.

First measure the **zero-flow pressure difference** between indoors and outdoors.

- In the app tap Δp_{01} (indicated by an arrow in the image opposite).

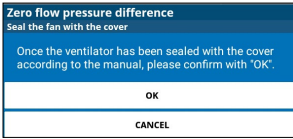


Fig. 55. Prompt to cover the fan to measure the zero-flow pressure difference

- You should now cover the fan opening with the cover included in the scope of supply.
- Tap “OK” to confirm.

The Wöhler BC 600 now determines the average value of the zero-flow pressure difference for 30 s. The fan does not operate during this measurement. The elapsed measurement time is shown in the display.

The zero-flow pressure difference is subsequently displayed.



NOTE!

For a valid, standards-compliant measurement the zero-flow pressure difference must not be greater than 5 Pa.

The Start button is now active (available).

- Tap START.
- Remove the cover from the fan and tap OK to confirm.

MULTI-POINT TEST (NEGATIVE AND POSITIVE PRESSURE)			
CURRENT DURATION		ESTIMATED V50-VALUE	
0:30		--- m ³ /h	
ZERO FLOW PRESSURE DIFFERENCE			
Ap01	-0,2 Pa		
STEP	PRESSURE DIFFERENCE (Pa)	PRESSURE DIFFERENCE (Pa)	VOLUMETRIC FLOW
1	-10,0 Pa	--- Pa	--- m ³ /h
2	-18,4 Pa	--- Pa	--- m ³ /h
3	-26,8 Pa	--- Pa	--- m ³ /h
4	-35,2 Pa	--- Pa	--- m ³ /h
5	-43,6 Pa	--- Pa	--- m ³ /h
6	-52,0 Pa	--- Pa	--- m ³ /h
7	10,0 Pa	--- Pa	--- m ³ /h
8	18,4 Pa	--- Pa	--- m ³ /h
9	26,8 Pa	--- Pa	--- m ³ /h
10	35,2 Pa	--- Pa	--- m ³ /h
11	43,6 Pa	--- Pa	--- m ³ /h

To perform the measurement the Wöhler Blower Check creates the specified target differential pressure. The respective measurement values are displayed in real time. The currently created pressure level is displayed against a blue background.

Fig. 56: Multi Point Test View, after the measurement of the zero-flow pressure difference

Exception: Set PRESSURE DIFFERENCE (TARGET) individually

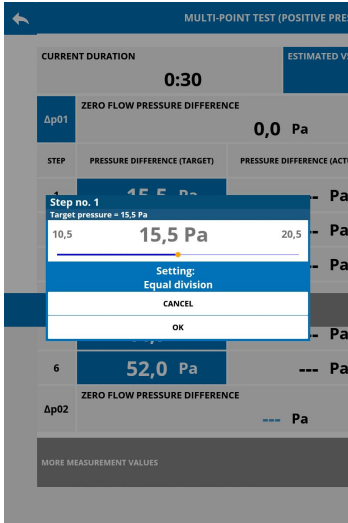


Fig 57: User sets the target pressure (exceptional case)

It is possible to set the PRESSURE DIFFERENCE levels individually.



NOTE!

Changing the levels can be useful if the pressure conditions are constantly changing. The user can, for example, set the first pressure point to 25 PA ($P_0 = 5 \times 5 \text{ Pa} = 25 \text{ Pa}$) in particularly difficult, gusty conditions. A note "storm" must then be included in the report.

- Tap on the pressure difference value to change it.
- Adjust the value using the slider.

If you change the value of the first or the last level, all other pressure level will automatically adjust so that the level distances are the same again.

You can change the values of all other levels individually without changing the other levels.

Performing the Measurement

The START key on the Wöhler BC 600 flashes when the measurement is in progress for as long as the target pressure is not reached. Once the target pressure is reached the key lights up blue continuously.

When the measurement is halted, the last values of the previous halted measurement are displayed.

If the Wöhler BC 600 does not switch to the next measuring step because the differential pressure is not sufficiently constant, it is possible to switch to the next step manually.

- To do so tap NEXT STEP.



NOTE!

The “Next step” button first becomes available after 30 seconds; this is to ensure the multi-point test remains valid if the device is manually switched to the next step.

- Tap the graph to display the curve depicting the measurement values.

Tap MORE MEASUREMENT VALUES to display further data, see the following figure.

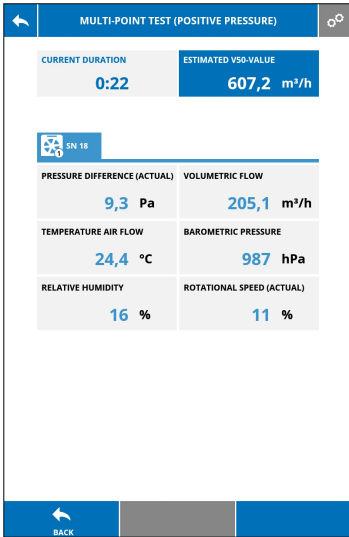


Fig. 58: More data display



NOTE!

The option to display “More measurement values” is available both in this online measurement value display as well as in the results view following a halted measurement.

The following information is displayed: The current differential pressure, the volumetric flow, the air temperature, the absolute pressure, the relative humidity as well as the current speed of the fan in percent.

- Tap BACK to return to the multi-point test view.

Operating the Wöhler BC 600 via the app

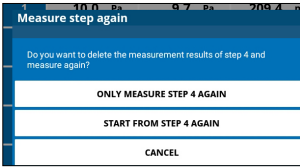


Fig. 59: Repeat measurement steps

- Tap the corresponding step if one or several measurement steps are to be repeated after the measurement is completed. It is then possible to repeat the measurement.



NOTE!

That can prove practical if the value appears conspicuous for any reason, and you think the cause may be due to an unusual reason, for example a window left open inadvertently.

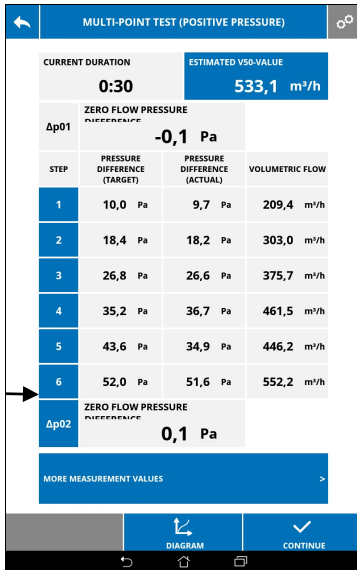


Fig. 60: Measuring the zero-flow pressure difference, Start field indicated by an arrow

Once all steps have been worked through you must determine the zero-flow pressure difference between indoors and outdoors. (The button "Continue" in the figure opposite only becomes available after the zero-flow pressure difference has been measured).

- Tap $\Delta p02$.
- Cover the fan opening with the cover and tap OK to confirm the prompt.

The Wöhler BC 600 measures the zero-flow pressure difference for 30 s.



NOTE!

If no further measurements are planned, you can leave the cover on the device for transport and storage.

- Tap CONTINUE.

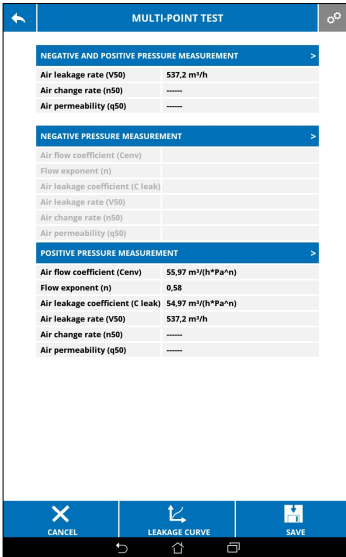


Fig. 61: Overview multi-point test

An overview of all measurements is displayed. However, only those measurements that have already been measured are entered (here “negative pressure measurement”):

Compensation functions to calculate the leakage curve

- Air flow coefficient C_{env}
- Flow exponent n
- Air leakage coefficient (C leak)
- Air leakage rate V_{50}
- Air change rate n_{50}
- Air permeability qE_{50}



NOTE!

To return to the measurement values tap the respective arrow on the blue softkeys. If necessary, you can repeat the individual pressure step measurements.

- If you have initially carried out a negative pressure or a positive pressure measurement, you can now start the remaining measurement (a positive pressure measurement in the example). To do so there is no need to change the test setup, because the fan automatically changes direction.



NOTE!

The sequence of the positive pressure measurement does not differ from that of the negative pressure measurement.

- Once the measurement is completed tap the “Leakage curve” button to display the leakage curve.
- Tap SAVE if you wish to save the measurement results.

You will now switch to Customer management, see chapter 8.4

- Select the customer, the project and the object under which you wish to save the measurement data and then tap Save (or create a new

customer, a project and an object and then save the measurement data under the new customer).



CAUTION!

If an existing object is selected, the save operation will overwrite existing content. As long as you do not exit Customer management at the end of a measurement you can repeat the measurement time and again (including in different existing properties). This data is also irretrievably overwritten after confirmation. Only when you exit the measurement and return to the main menu, the storage option and the possibility of remeasuring individual measurement points will end.

If older measurements are to be called up after a measurement, it is particularly important to go back to the main menu after saving each measurement. If the current measurement and storage process is not completely completed, existing measurements can be overwritten by mistake with the current results if the corresponding safety note is confirmed.

8.7.2 Continuing the measurement after a WLAN connection termination

If the WLAN connection is interrupted during a measurement, this can have different reasons: Energy saving of the mobile terminal, power failure Wöhler BC 600, too long distance between tablet and BC 600. In this case, the current measurement can be continued after the WLAN connection has been re-established.



NOTE!

This is possible from App version 1.14 on.

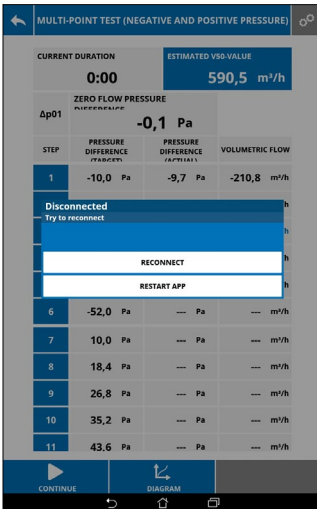


Fig. 62: View after the WLAN-connection has been interrupted

As soon as the app detects that the WLAN connection has been interrupted, the adjoining view will appear in the display of the app.

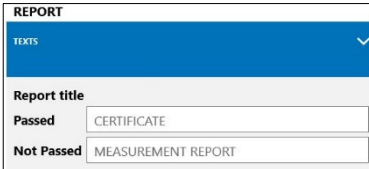
- Correct the cause of the interruption of the WLAN connection (switch on the BC 600, return the mobile device within range of the BC 600, unlock the mobile device ...).
- In the app, tap on RECONNECT to re-establish the WLAN connection between the BC 600 and the app.

The measurement was stopped at the last step measured before the connection was terminated.

- After the connection has been reestablished, tap the START button in the app to continue the measurement.

The interrupted measuring step is now measured again and the multi-point test is then continued.

8.8 Report: Certificate or protocol



REPORT	
TEXTS	
Report title	
Passed	CERTIFICATE
Not Passed	MEASUREMENT REPORT

Fig. 63: Possibility to enter an individual report title



NOTE!

As the report is generated in PDF format, you will need to install a PDF reader on your mobile device. We recommend Adobe Reader.

It is possible to create a detailed report once all of the data has been entered, all measurements have been carried out and the measurement results have been saved.

If the measurement result is **standard compliant** the report is issued as a measurement certificate. If the measurement result is not **standard compliant** the report is issued as a **measurement protocol**.

It is possible to create an individual report title in the settings.

Furthermore, the following items can be specified in the settings, see Chapter 9.3.

Footer text, note text for the title page, the time of the measurement in the report and standard comments to be inserted frequently.

The evaluation of the measurement results can be customized for the report under the following items, see Chapter 9.3:

Derived quantity, axis classification, leakage curve, percentage error, geometric reference quantities.

If desired, it is possible to insert your company logo in the report.

Logo format: jpg, jpeg, .png, .tif

- Load the logo onto your mobile device.



NOTE!

Save the logo to the folder of your choice.

- Now open TESTER SELECTION. You have two options to access this view:
 - a) Select CUSTOMER MANAGEMENT > Select Customer, Project, Object > TESTER DATA
 - or
 - b) Tap the gear symbol to enter the Settings view > GENERAL > Your contact data

8.8.1 Company logo on report

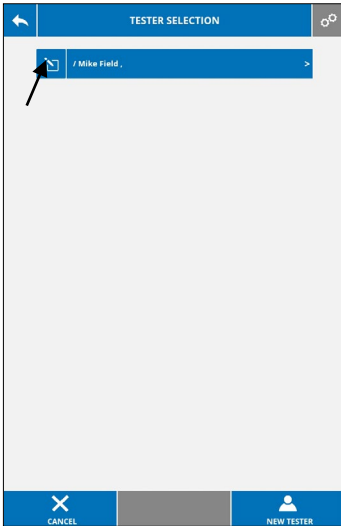


Fig. 64: Measurement view TESTER SELECTION

- In the TESTER SELECTION tap the pen symbol to edit the Tester information.

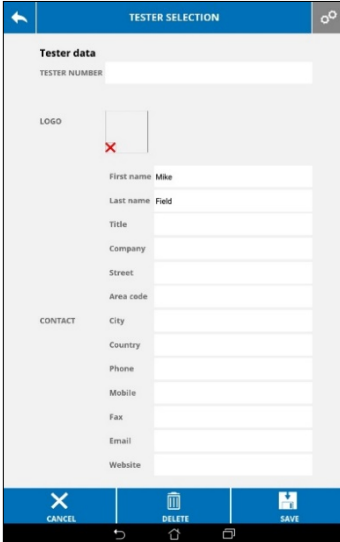


Fig. 65: Insert Logo

- Tap the check box next to LOGO. The image gallery of your mobile device will open.
- Select your logo.
- Tap save (see figure opposite) to save the logo.
- The logo is inserted and will be displayed in the reports

Removing the logo

- In the TESTER SELECTION clear the check box in the logo field.

8.8.2 Generating a report

- To generate the report select the corresponding customer and the corresponding object in Customer management.
- In the Object view tap EXPORT REPORT:

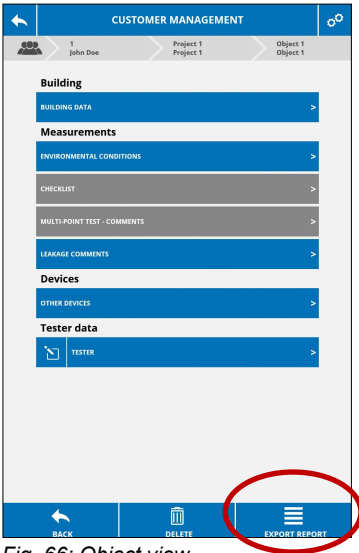


Fig. 66: Object view

- The app will now generate the report.

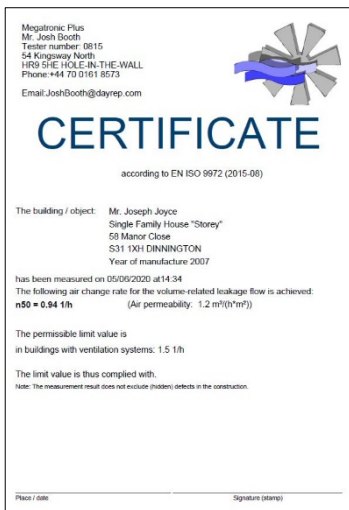


Fig. 67: Certificate

Handwritten signature on PDF-Report

! CAUTION!

The report is generated in PDF format; however, it is only a temporary file. It will be overwritten when the next report is generated in PDF format! If you wish to keep the report for future use, you must either forward the file or save it to your mobile device in PDF format in a folder of your choice.

- You have the option of forwarding the report or saving it as a PDF file on your mobile device.

If you work with Adobe Reader, you can sign the PDF report on the display by hand. You can then send the report with your signature without print-

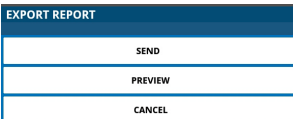


Fig. 68: Report options

ing it out.

- To do this, tap on the desired place in the PDF report (hold down briefly).

A context menu opens.

- Select Freehand.
- Write your signature with your finger.
- Tap on the hook symbol to save the signature.
- Tap SEND to forward the report per email or per messenger service.
- In the SETUP menu you have the possibility to indicate an often used Email address as a standard address, see chapter 0.



NOTE!

If you work with a Windows device you will also find the Option "Save under ...".

- Tap Preview to edit the report, if necessary. It is possible to edit the respective fields with a blue background.

If Acrobat Reader is installed on your mobile device, you can also edit or add details to the comments in the report; as well as sign in the PDF file.



NOTE!

The report will be sent only after the WLAN connection to the Wöhler BC 600 has been disconnected and the mobile device is again able to connect to the Internet.

It is possible to determine certain presets in the report, see chapter 9.

8.9 Import/export data

This function makes it possible to transfer customer data to a new or additional device with the Wöhler BC 600 app installed. The transmission of data is also possible between devices running Android and iOS operating systems.



NOTE!

It is strongly recommended that customer data is backed up externally at regular intervals via data export to prevent data loss, e.g. due to the loss or defect of the end device.

System requirements for the device:

iOS, Android, Windows 10

8.9.1 Data export (Android and iOS)

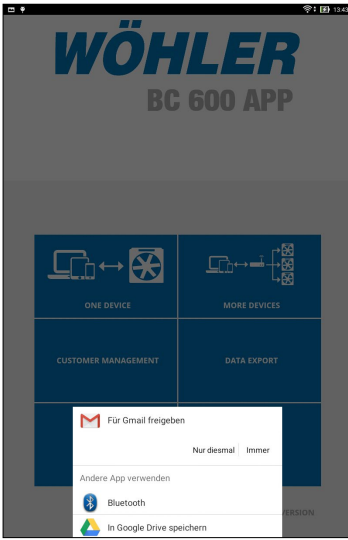


Fig. 69: Data export – select email program

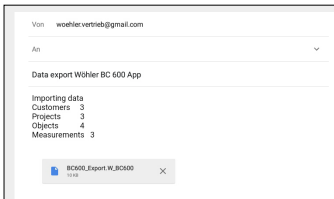


Fig. 70: Email text for data export

- On the Home screen tap the DATA EXPORT button

A dialog box opens with a list of email programs / messengers.

The app generates a file with the extension “W_BC600”

The file contains all of the customer management data.

The email text states the number of exported customers, projects, objects and measurements.

- Send this email with the mail program of your choice to the new mobile device.

The Home screen of the Wöhler BC 600 app will now again be displayed in the display of your mobile device.

8.9.2 Data export (Windows)

- On the Home screen tap the DATA EXPORT button
- A dialog box opens with a list of email programs / messengers and the option “save as ...”

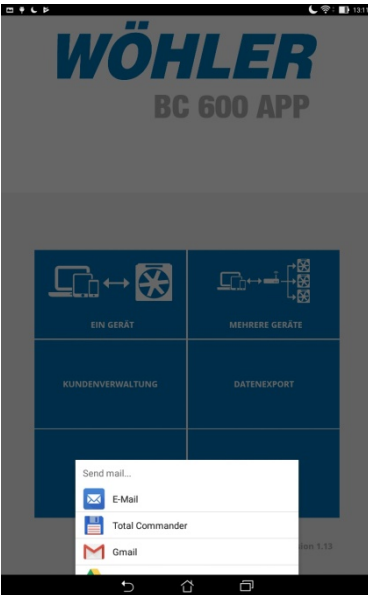


Fig. 71: Dataexport – Selecting the Email Programm

The app creates a file with extension "W_BC600" (exception Outlook).

The file contains the data of the entire customer administration.

The e-mail text states the number of exported customers, projects, objects and measurements.

- Send this mail to the new mobile device with any mail program.

The display of your mobile device will now show the start view of the Wöhler BC 600 App again.



NOTE!

Outlook does not create a file attachment. Therefore, either set up another standard mail program or select "save as" and then send the file.

8.9.3 Data import



CAUTION!

All existing customer data on the target mobile device will be overwritten during the data import operation. The data will be replaced instead by the data included in the email attachment.



NOTE!

You will need to close the Wöhler BC 600 app on some versions of the target mobile device before commencing the data import operation.

- On the target mobile device tap the Email attachment received with the exported customer data (file extension “W_BC 600”).
- Select the Wöhler BC 600 app when prompted to select the program/app to be used to open the file.



NOTE!

Android: In the event the app used to send the data automatically alters the file extension or the receiving app (email, messenger) does not open the BC 600 app to import the data (message: File type unknown), please use an alternative app on your mobile device to facilitate the exchange of data (recommended: Gmail).

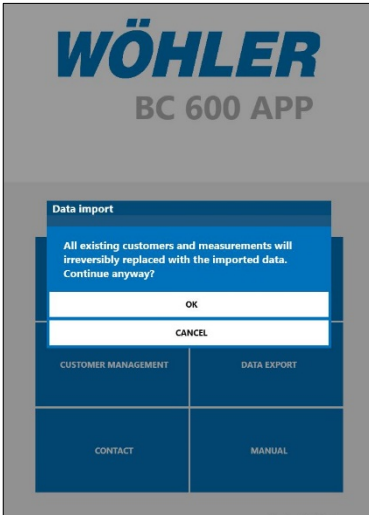


Fig. 72: Data import – existing customer data and measurement data will be overwritten

In the event data already exists in the Wöhler BC 600 app on the target mobile device, the following message is displayed before the data import operation begins: “All existing customers and measurements will be irreversibly replaced with the imported data”. Continue anyway?”

- Cancel: Existing customer data on the target mobile device will not be altered.
- OK: Existing customer data will be overwritten with the data in the attachment.

The Home screen of the Wöhler BC 600 app will now be displayed in the display of your target mobile device

9 Settings

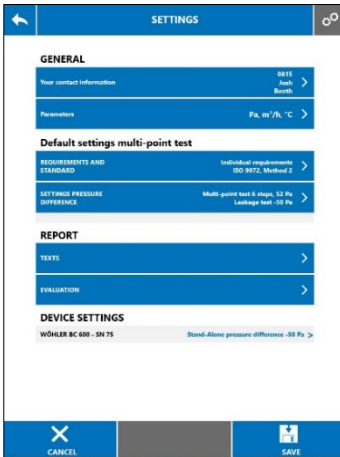


Fig. 73: Settings – overview.

In the Settings menu it is possible to define general settings as well as settings configuring the sequence of measurements, the report and the device. In addition, it is possible to preselect the physical units.

- To access the Settings menu tap the gear symbol located in the top right of the display.



NOTE!

The gear symbol is not available during the measuring process. The settings must be made before the multi-point test begins.

If the app is not connected to the Wöhler BC 600, you can access the Settings menu via the Customer management menu (tap the gear symbol).

If the app is connected to the Wöhler BC 600, you can access the Settings menu from within any view.

- To define settings, proceed as follows for the respective configuration:
- Tap the arrow > to access the available options.
- Select the desired preset options and click "OK" to confirm.

When a preset has been selected, the corresponding text is displayed formatted blue in the overview of settings

9.1 General

Your contact information

TESTER SELECTION

You can enter the information that should appear in the test report below the TESTER.



NOTE!

You can also access this information under Customer administration>Project >Object.

9.2 Settings: Measuring Procedure

Requirements and standard

REQUIREMENT	Individual requirements	
LIMIT VALUES	Building volume <= 1500 m ³ (n50 1/h)	Building volume > 1500 m ³ (qE50 m ³ /m ² h)
with HVAC	1.3	3.5
without HVAC	3.0	4.5
Standard	ISO 9972, Method 2	
SETTINGS PRESSURE DIFFERENCE	Multi-point test 6 steps, 52 Pa Leakage test -50 Pa	

Fig. 74: Settings concerning requirements and standards

Settings concerning the pressure difference

Multi-point test 6 steps, 52 Pa
Leakage test -50 Pa

MULTI-POINT TEST

WHAT SHOULD BE THE HIGHEST PRESSURE DIFFERENCE TARGET?

Max. pressure difference target **52.0 Pa**

How many steps should the target pressure difference be divided into?

5 6 7 8 9 10

Sequence of differential pressure steps

Absolute value ascending Absolute value descending

Step Switching

Automatic (recommended) Manually

Demo mode OFF

LEAKAGE TEST

Pressure difference leakage test

-50.0 Pa

Fig. 75: Settings concerning the pressure difference

If the same measuring requirements are always used, it can be defined here by selecting the requirement. After that, at the start of a measurement series, the standard and the measurement method are always preset.

Here the user can preset the measurement procedure. In this case these settings must not be done during every measurement.

maximal pressure difference target

number of steps

sequence of differential pressure steps

step switching

Demo-Mode

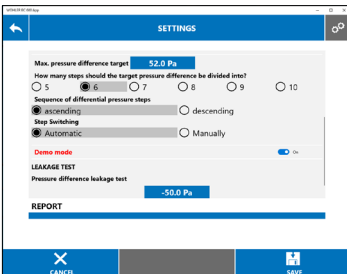


Fig. 76. Demo-Mode activated

When Demo-Mode is activated the line “Demo-Mode” is displayed in red font in the Settings view. In addition, a warning notice “Demo-Mode Active” is displayed in red font in the “Multi-point test” view.

When Demo-Mode is active the button “Next step” is always available during the measurement, so that it is possible to manually switch to the next step at any time when demonstrating the device.



NOTE!

It is not possible to perform a standard compliant multi-point test in Demo-Mode. The Demo-Mode is suitable only for demonstration purposes.

9.3 Report

Texte

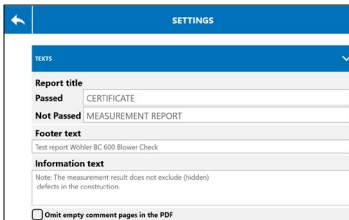


Fig. 77: Settings concerning the report

Report title

- Enter a standard title for the report

Information text

Standard note for the title page

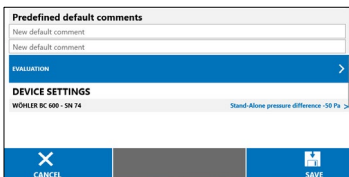


Fig. 78: Enter predefined default comments

Predefined default comments

Possibility to create standard comments. These can be selected and inserted in the measurement object and are included in the report.

Evaluation

Percentage error of the geometric reference values:
Default setting: 3%

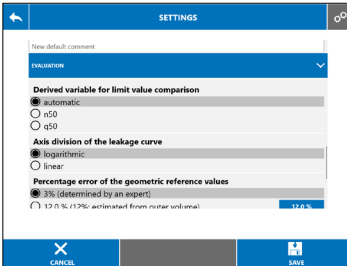


Fig. 79: Settings for the report - evaluation

Mail settings

Possibility to enter a standard mail address.

This address will always appear as recipient in the mails sent by the BC 600 app (data export, report dispatch). Of course, it is still possible to change the recipient list afterwards.

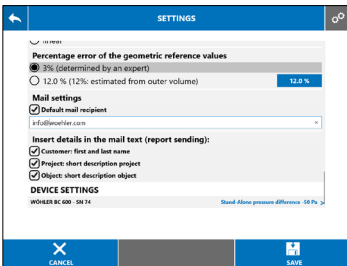


Fig. 80: Mail settings

10 Maintenance



WARNING!

Always disconnect the power plug before carrying out any and all maintenance tasks.

10.1 Maintenance list

Recommended interval	Maintenance work
At the end of a working day	Check the panel for moisture, allow to dry if necessary
When soiled	Change filter
When soiled	Clean panel and device with a damp cloth
Every 2 years	Send the device to a Wöhler Service Center to be checked and calibrated.

11 Warranty and Service

11.1 Warranty

Each Wöhler BC 600 is subjected to rigorous quality control checks and every function is tested before leaving our factory. The final inspection and testing routine is recorded in detail in a test and calibration report, which is enclosed with the documentation accompanying the Wöhler BC 600.

If used properly for the purpose it was designed the Wöhler BC 600 Blower Check is covered by a warranty for a period of 12 months beginning on the date of sale.

Consumables such as filters, capillary tubes and so on are excluded from the warranty.

This warranty does not cover costs for packaging and transporting the device if returned for repairs.

This warranty is null and void if a non-authorized third party carries out repairs or modifications to the device.

11.2 Service

Excellent SERVICE is very important to us. It goes without saying that we are at your side when the warranty period expires.

- When you send your Wöhler BC 600 to us, we will repair it within a few days and return it via our trusted parcel carrier.
- Our technicians are available on the phone to offer immediate assistance.

12 Declaration of conformity

The manufacturer:

WÖHLER Technik GmbH

Wöhler-Platz 1, D-33181 Bad Wünnenberg, Germany

Declares that the product:

Product name: Blower Check

Model number: Wöhler BC 600

Meets the essential protection requirements laid down in the Directive of the Council on the approximation of the laws of the Member States relating to electromagnetic compatibility (2014/30/EU) and the Low Voltage Directive (2014/35/EU).

The following standards are used to assess the product:

EN 61000-6-2

EN 62368-1:2014+AC:2015

ETSI EN 301489-1/-17 V3.1.1/-1 V2.1.1

ETSI EN 300328 V2.1.1

13 Accessories

Installation

Additional frame for door and window Wöhler BC 600	Art. no. 5671
Set of sealing clamps Wöhler BC 600 with 10 clamps 220 mm	Art. no. 7583
Set of sealing clamps Wöhler BC 600 with 4 clamps 120 mm	Art. no. 7584

Spare parts

Cover Wöhler BC 600 to measure the zero-flow pressure difference	Art. no. 7584
Sealing panel Wöhler BC 600	Art. no. 7588

Measurement tubes

Capillary tubes Wöhler BC 600 with additional weight	Art. no. 7582
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Consumables

Filter pads in pack of 5	Art. no. 7586
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Printer

Wöhler TD 100 fast thermal printer	Art. no. 4160
Thermal paper, 10 rolls	Art. no. 4145

Accessories

Fog machine	Art. no. 3460
Fog spray gun	Art. no. 8450

Points of sale and service**Germany****Wöhler Technik GmbH**

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