WÖHLER

LEAKAGE CLASS ACHIEVED?

Wöhler DP 700 Leakage Tester

LEAKAGE TEST ON VENTILATION SYSTEMS AND COMPONENTS

GRAPHIC COLOR DISPLAY

The Measure of Technology

Made in Germany

WÖHLER DP 700 LEAKAGE TESTER

Just 3 entries to classify an air ductwork system or a component!

Depending on the time the tests are carried out the Wöhler DP 700 makes it possible to detect leakages in air ducts, components and appliances during production or prior to plant acceptance. In that way leakage tests with the Wöhler DP 700 make an important contribution to assuring quality during production and installation and, as a consequence, to the energy efficiency of air-conditioning and ventilation systems.

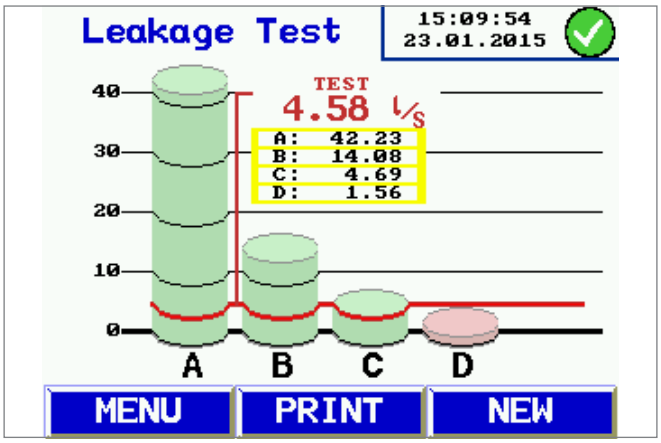
Ever-increasing demands are being placed on the energy efficiency of VAC systems. In that respect the leak-tightness of ductwork has a particularly important role to play. This aspect holds the greatest potential for saving energy, if it is possible to adapt the air flow to actual requirements in conjunction with low leakage rates. In this respect, low device- and ductwork leakages will in future need to be taken into consideration a great deal more. Consequently, corresponding measurements will gain in importance.

Advantages

- Quality assurance in the production and assembly of air ducts and components as well as equipment
- Additional adapters for air flow rates < 0.3 l/s assure high levels of accuracy
- Also suitable for leakage tests outside of VAC-systems
- Easy to operate with operator guidance or expert mode
- Practical set suitable for a wide range of applications

Special extras

Leakage tests on several 100 m² of installed ductwork systems.

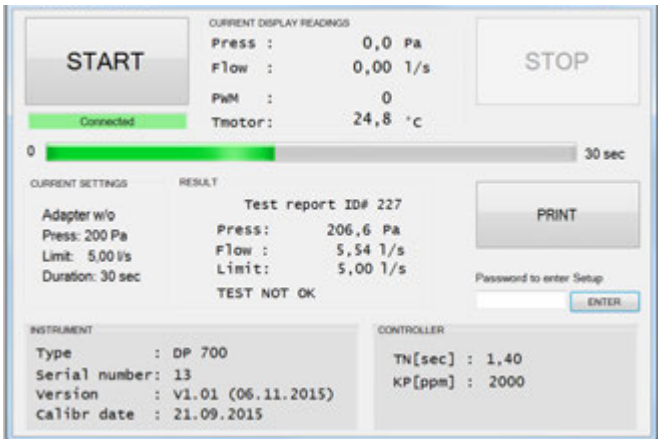


Printable graphic representation of results.

Quality control during series production of ducts and components.

Wöhler DC Series PC software for data transmission and subsequent processing (optional documentation set).

Component test on small, individual components.



Control the Wöhler DP 700 via USB connection with optional remote program control (e.g. to integrate in the final inspection routine of series production).

Ready-to-go basic set

Set with connection accessories in 2 stable cases – weight of instrument: 9.5 kg.

Simple connection options

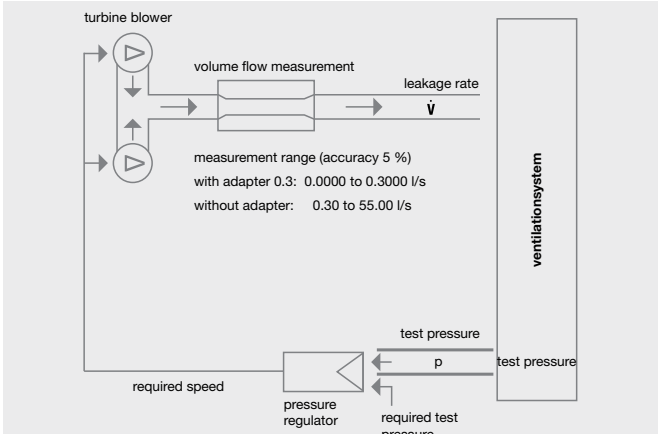
Hose connection with end caps DN 100, suitable for air ducting with male size:

- Air hose Ø 50 mm; length 3.75 m
- Pressure hose Ø 5.5 mm; length 10 m

For small components via hose connection Ø 5.5 mm (hose connector):

- Air hose Ø 5.5 mm; length 4 m
- Pressure hose; details as above, but for use without end caps

Schematic measurement setup



Two fans integrated in the instrument blow/extract air via an air hose in/out of the connected air ductwork system or component to be tested. In automatic mode the instrument automatically regulates the current system pressure to achieve the preselected test pressure.

This pressure is fed back to the instrument via the connected pressure hose.

The volume of supply air flow required to maintain the pressure corresponds to the leakage of the object under test and is measured in the instrument.

TECHNICAL DATA

Pressure

Principle	piezoresistive semiconductor sensor
Measurement range	± 7000 Pa
Resolution	0.1 Pa…± 900 Pa, thereafter 1 Pa
Accuracy	± 0.5 Pa or ± 2.5 % of reading

Volume flow

(based on 1013 hPa and 20 °C)

Principle	Hot film anemometer
Measurement range	0.0000 to 55.00 l/s
Resolution	0.0001 l/s to 0.3000 l/s, 0.001 l/s to 3.000 l/s, 0.01 l/s > 3.00 l/s
Accuracy	± 0.0009 l/s or 5% of reading

General technical data

Power supply	110…230 V, 50…60 Hz
Power consumption	Max. 9 A
Operating temperature range	5 °C…40 °C
Storage temperature range	- 20 °C…+ 50 °C
Weight	9.5 kg

PRINCIPLE OF OPERATION

Leakage test on VAC systems according to DIN EN 12599

For reasons of accessibility the leakage test should be carried out during the installation phase. The leakage test is performed according to contractual agreement to verify compliance with leakage classes A-D as defined in DIN EN 13779.
For this purpose the ductwork is generally subdivided into different sections and sealed. The leakage tester then generates positive pressure in the correspondingly sealed sections of the supply air ducts and negative pressure in the exhaust air ducts, which should respectively be as close as possible to the mean of the average operating pressure. The standard suggests +200, +400 or +1.000 Pa as positive pressure or rather -200, -400 or -750 Pa as negative pressure. The required air flow rate to maintain the pressure is the leakage rate for which limit values are determined according to the interior surface area and test pressure specified in the relevant standards.
The user selects the test pressure and enters the interior surface area. The instrument then determines the air leakage rate based on the surface and pressure completely automatically and rates the system according to leakage classes.

Leakage tests during the series production of air ducts

It is becoming increasingly advisable to document quality throughout series production. It is possible to carry out the test within a couple of minutes alongside the production process – and without any large-scale disruption.
The test is particularly easily performed on rectangular and special ducting by simply carrying out a negative pressure test to determine deviations from the standard. The item under test is placed briefly on a test plate and simply sealed off with a loosely fitting lid.

Leakage test on controlled residential ventilation systems to DIN EN 14134

The leakage test on residential ventilation systems is similar to those performed to DIN EN 12599. However, the air leakage rate should be measured at at least at three different points at pressure differences of about 20 Pa, 60 Pa and 200 Pa.
With what we know today, measurements with 3 pressures are no longer absolutely necessary; this European standard from 2004 is presently being revised.

Functionality

- Leakage test according to DIN EN 12599 – to hand over air conditioning and ventilation systems
- Leakage test according to DIN EN 14134 – installation checks of residential ventilation systems
- Measurement of leakage class according to DIN EN 13779 of ventilation ductwork systems and components in accordance with the standards DIN EN 1507, DIN EN 12237, DIN EN 13403 and DIN EN 13180.
- Fulfills the high accuracy requirements specified in DIN EN 1751 and DIN EN 15727 for measurements on individual components (± 0.0009 l/s)
- Includes adapter for measurement range < 0.3 l/s
- Easy to operate with operator guidance or expert mode
- Automatic or manual measurement sequence
- Separate differential pressure measurement possible
- Measurement values in desired units, without manual conversion
- Prints measurement reports on-site with thermal printer (optional accessory)
- Practical set in 2 cases, easy to transport and store

Wide range of applications

- Leakage tests in large air leakage ranges: From individual components through to complete systems consisting of several 100 m²
- Leakage tests on air-conditioning units, switchgear cabinets, climatic test cabinets, heat exchangers, cabinets for clean room technology and other housings
- Leakage testing of rooms
- On-site and laboratory measurements on structural components (e.g. OSB boards, windows)
- Can be integrated into the final inspection routine of series production runs including optional program remote control, (controlled from a PC via USB port)
- Suitable for tests of lower output performance (40 l/s), 110 V, 60 Hz

Data management

- Store up to 100 measurements
- Data stored permanently in the instrument
- Customer and data management with the Wöhler DC Series PC software (optional accessory)
- Data transmissions via USB connection
- Print out measurement results including graphic chart on a printer (optional accessory)