

Leakage test

POSITIVE DISPLACEMENT BLOWER

Process description



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1 Leakage test

1.1 Application range

Series K and F positive displacement blowers.

For application

- with nitrogen, fluid group II
- with gas, fluid group I
- with air, fluid group II, on customer request

1.2 Definition

The components through which medium flows are tested for leaks with air.

1.3 Aim of the test

In the leakage test, the machine is tested for leaks at the components and housing parts of the intake side and discharge side and at the flange connections.

1.4 Test conditions

Auditor

The test is carried out by instructed personnel.

Location

Test facility, ambient temperature: +5 to +40 °C

Test medium

The test is always executed with air.

Test pressure

$$P_T = 1.1 \times P_S$$

P_T = test pressure

P_S = maximum permissible pressure (corresponds to the maximum pressure specified by the manufacturer for which the machine is designed)

Test device

Calibrated pressure gauge quality grade 1

Leakage test

Documentation

Test duration

The test duration is divided into three time periods:

- Period 1
Building up the test pressure to a defined value
- Period 2
Dwell time for the test pressure: 30 minutes
- Period 3
Relieving the test pressure to atmospheric pressure

1.5 Test sequence

The intake-side and discharge-side conveying line, including the bare shaft blower, undergo testing.

The test sequence consists of the following steps:

1. ➤ Decouple sensitive components, such as measuring equipment.
2. ➤ Seal the intake connection and pressure connection with blind flanges.
3. ➤ Secure compensators against impermissible linear expansion.
4. ➤ At **air-operated machines**, seal the neutral chambers in the machine stage.
5. ➤ Apply the specified test pressure to the machine via feed sockets at the blind flanges.
6. ➤ Monitor and document the pressure drop over the duration of the dwell time.
 - ⇒ If there is no impermissible pressure drop within the specified time, the test is passed without reservation.
 - At **air-operated machines**, leaks are permissible at the transition from the cylinder to the side plates and at the drive shaft of the machine stage.
7. ➤ In the event of an impermissibly large pressure drop, locate the leak with leakage spray and rectify it.
 - ⇒ Repeat the test procedure until the specifications are met and the test is passed without reservation.

1.6 Documentation

The result of the test is documented in an inspection certificate 3.1 in accordance with DIN EN 10204.

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2 Technical information

The machine is technically leak-tight as per
TRBS 2152 Part 2 / TRGS 722.