

Operating Manual

Calibrated screw-in leak

1. Technical Data

Calibrated screw-in leak

Part number	143 20 / 143 21
Producer	INFICON GmbH Cologne
Leak rate	Customized in the range of 10^{-2} mbarl/s < Q < 10^{-7} mbarl/s
Accuracy	± 15 %
Calibration gas	Helium
Max. pressure	40 bar

Attention:

Depressurizing the Helium pressure from the test leak at more than 2 bar per second may cause a blockage of the test leak, due to condensation. Disregarding this instruction will lead to a loss of warranty. Please read the Operating Manual before using the calibrated leak.

2. Scope of delivery, depending on the order

- (1) Calibrated screw-in leak (143 20) (pressure on long side) -
- (2) Calibrated screw-in leak (143 21) (pressure on short side)



3. Description

The calibrated screw-in leak is designed to prepare a test sample with a specific helium leak rate. In a leak detection system this master test sample can be used for

- calibration of the vacuum system,
- evaluation of the machine factor for the system,
- verification of the test procedure.

4. Safety Instructions

- The calibrated leak is designed only for the described purpose (see chapter 3). A different use, can cause risks for health and harm to the calibrated leak.
- To ensure correct operation and accuracy of the measurement, an authorized service centre should verify the calibrated leak annually.

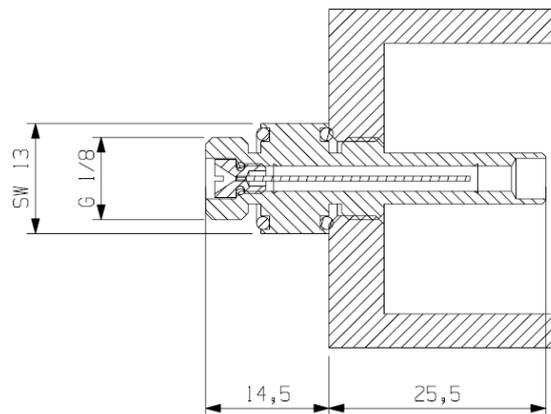
5. Assembly Instructions

All bonds have to be glued with a two-part epoxy adhesive with a minimum lap shear strength of 23 Mpa.

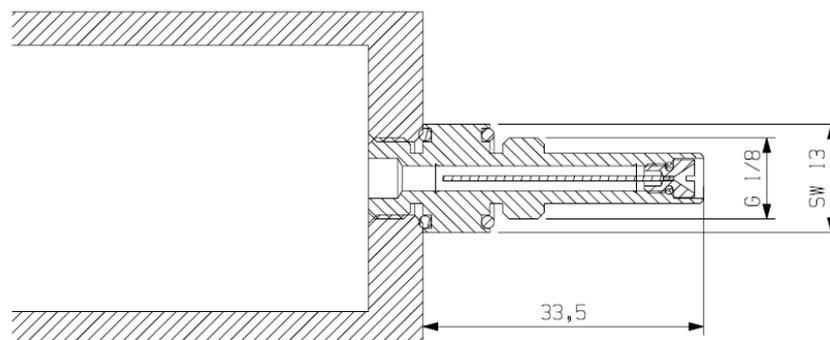
Warning: The capillary of the calibrated leak is made up of supersensitive quartz material!

The calibrated leak must be handled with highest care. To prevent the damage of the calibrated leak it must not be exposed to vibrations or other stresses. In addition it is very important to assure that the system is depressurized at max. 2 bar per second to avoid a blockage of the leak due to condensation.

5.2 Pressure on long side (143 20)



5.1 Pressure on short side (143 21)



5.3 Operating pressures less than 1 bar

In such cases it is essential to ensure that 100% Helium is in front of the capillary.

Please evacuate both sides of the test leak to less than 1 mbar, otherwise residual air at the Helium side could reduce the leak rate, or air from the outlet side of the test leak could flow into the Helium side. In this case the leak rate will also be reduced.