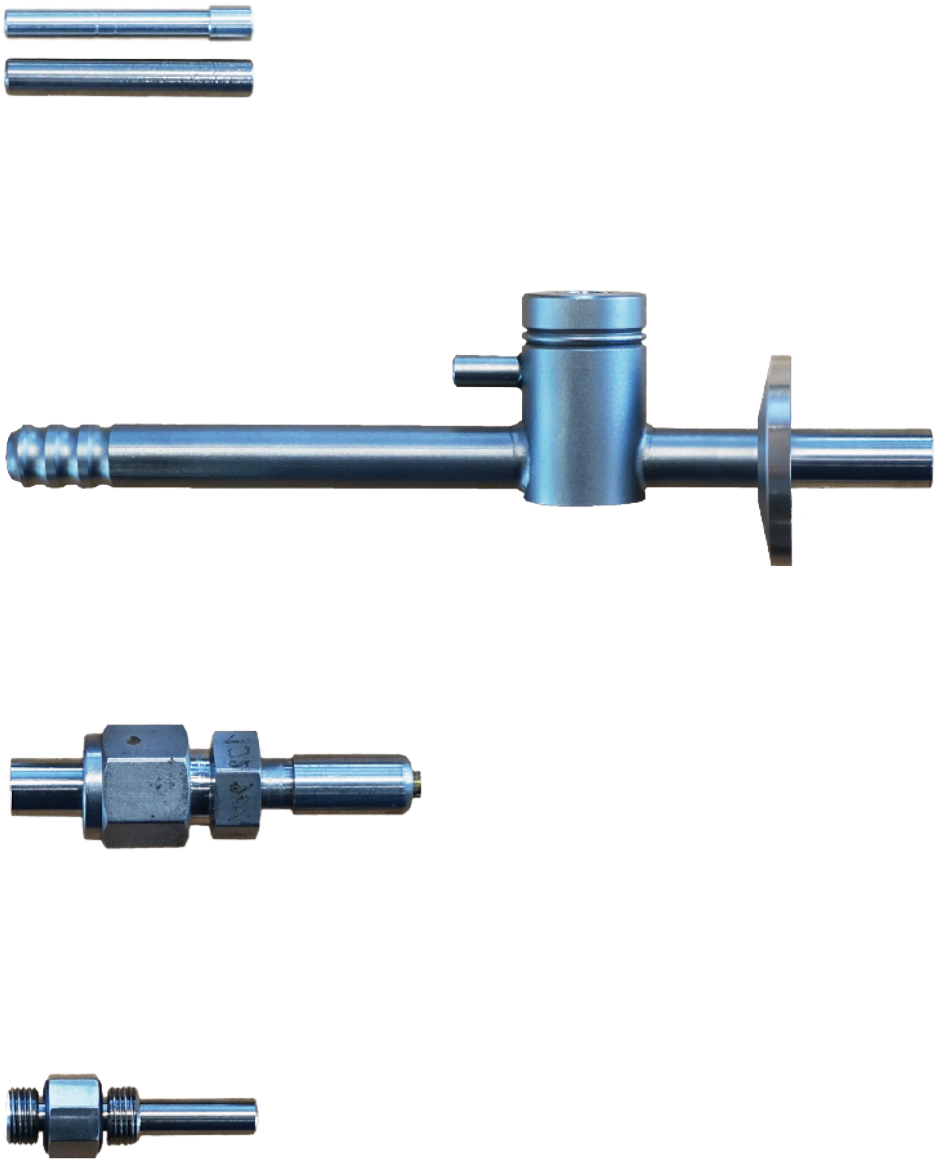

Operating Instructions

# Test leaks for system integration

Catalog No.
143 00, 143 16, 143 08, 155 65, 155 66, 143 04, 143 12, 143 20

minq69en1-03-(2511)

From software version
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# Table of Contents

# 1 About this Manual

This document applies to the calibration leaks stated on the title page.

Product names may occur in the document, which are added for identification purposes only and belong to the respective owner of the rights.

## 1.1 Warnings

**⚠ DANGER**

**Imminent hazard resulting in death or serious injuries**

**⚠ WARNING**

**Hazardous situation resulting in potential death or serious injuries**

**⚠ CAUTION**

**Hazardous situation resulting in minor injuries**

**NOTICE**

**Hazardous situation resulting in damage to property or the environment**

# 2 Safety

## 2.1 Intended use

- Only operate the calibration leak as intended, as described in the instruction manual, in order to avoid hazards due to incorrect usage.
- Comply with application limits, see "Technical Data".

### Incorrect usage

Avoid the following unintended uses:

- Use of the calibration leak by untrained personnel
- Use outside the technical specifications, see "Technical Specifications"
- Use of the calibration leak in case of recognizable defects
- Operation at too high ambient temperature
- Using the calibration leak outside of the specific area
- Exceeding permissible environmental conditions for calibration leaks

## 2.2 Duties of the user

- Read, observe, and follow the information in this instruction manual and in the work instructions provided by the owner. This concerns in particular the safety and warning instructions.
- Always observe the complete operating instructions for all work.
- If you have any questions about operation or maintenance that are not answered in this manual, contact customer service.

## 2.3 Owner Requirements

The following notes are for companies or any person who is responsible for the safety and effective use of the product by the user, employees or third parties.

### Safety-conscious operation

- Only operate the calibration leak if it is in a technically perfect condition and shows no signs of damage such as escaping solvents.
- Only operate the calibration leak as intended, in a safety and risk conscious manner, and in accordance with this instruction manual.
- Adhere to the following regulations and observe their compliance:
  - Intended use
  - General applicable safety and accident prevention regulations
  - International, national and local standards and guidelines
  - Additional device-related provisions and regulations
- Keep this instruction manual available on site.

## Personnel qualifications

- Only instructed personnel are to be permitted to work with the calibration leak on the battery leak detector. The instructed personnel must have received training on calibration leaks.
- Make sure that authorized personnel have read and understood the instruction manual and all other applicable documents.

# 3 Scope of Delivery, Transport, Storage

The following descriptions apply to test leaks with the following part number:

| Calibration leak | Part number |
|---|---|
| Test leak in screw-in sleeve 1 to E-7 | 143 00 |
| Test leak TL in screw-in sleeve 6 mm | 143 16 |
| Test leak TL hose shaft 1 to 1E-7 | 143 08 |
| TL4 test leak | 155 65 |
| TL6 test leak | 155 66 |
| Test leak TL Pin type/VCO 1 to 1E-7 | 143 04 |
| Test leak TL Cyl. casing/VCO 1 to 1E-7 | 143 12 |
| Screw-in test leak Pressure on long side | 143 20 |
| Screw-in test leak Pressure on short side | 143 21 |

## Transport

**NOTICE**

**Damage caused by transport**

Transport in unsuitable packaging material can damage the calibration leak.

- ▶ Keep the original packaging.
- ▶ Only transport the test leak in its original packaging.

## Storage

**NOTICE**

**Calibration leak defect due to improper storage**

Excessive humidity in conjunction with condensate formation can significantly reduce the service life of the calibration leak.

- ▶ In the sealed and damage-free PE bag together with the original silica gel, a storage time of at least 2 years is guaranteed. We recommend replacing the desiccant bag after 2 years.
- ▶ Store the calibration leaks in a cool place.

# 4 Description

## Test leak with pin housing

**NOTICE**

**Calibration leaks are sensitive test equipment and have glass components in their interior that can be destroyed if handled improperly.**

- ▶ Do not drop the calibration leak.
- ▶ If the test leak has fallen off, return the test leak to the manufacturer for inspection, see "Disposal".

Helium test leak without gas container (capillary-type leaks) for determining the sensitivity and signal response time during the vacuum leak test. A purge valve with hose nozzle enables the gas in the dead volume to be replaced quickly.

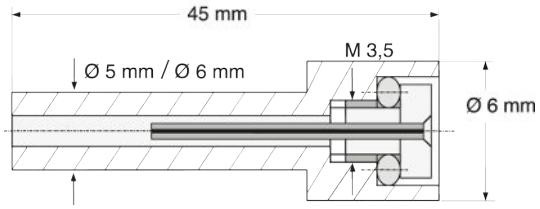


*Fig. 1:* 14300 Test leak in screw-in sleeve

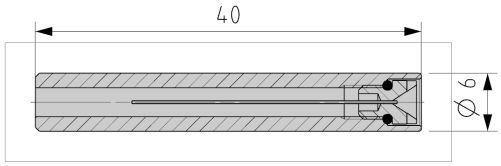


*Fig. 2:* 14316 Test leak in screw-in sleeve

## Test leak with cylindrical housing

The test gas connection is either a VCO connection or a 10 mm hose connector for flexible connections.

All test leaks for systems are designed for a maximum working temperature of 80°C.

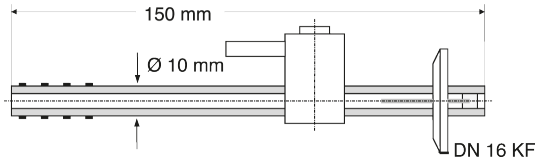


*Fig. 3:* Test leak with pin housing and hose nozzle

## Test leak with screw-in sleeve

Used as a standard test spot for testing the entire helium leak test system.

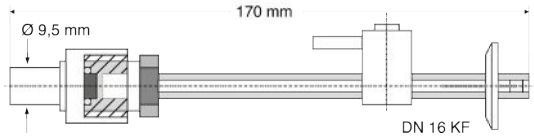


*Fig. 4:* Test leak with pin housing and VCO connection

## Screw-in test leak

The screw-in test leak is used for leak testing on a test object if a specific helium leak rate is required.

Use for:

- Calibration of the vacuum system
- Determining the machine factor for the system
- Verification of the test procedure

It is equipped with a fixed threaded connection to enable quick installation in a system. Depending on the specific order, the thread can be located on the long pressure side or on the short pressure side.

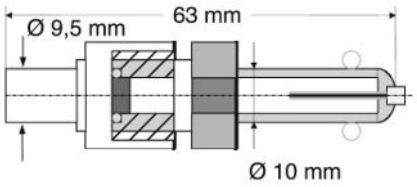


*Fig. 5:* Test leak with cylindrical housing and VCO connection

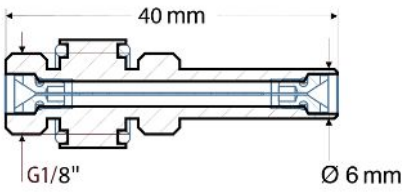


*Fig. 6:* Screw-in test leak

## Screw-in test leak Pressure on short side (14321)

The screw-in test spot is suitable for producing a master test part with a defined helium leak rate. In a leak detection system, this test piece is used for:

- Calibration of the leak detector
- Determination of the machine factor
- Verification of the test sequence

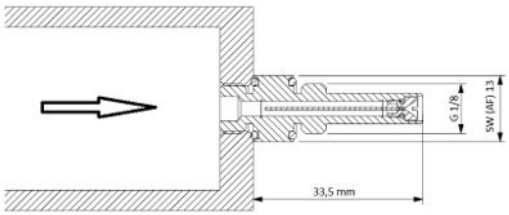


*Fig. 7:* --> = Pressure side, maximum operating pressure 40 bar

## Screw-in test leak Pressure on length side (14320)

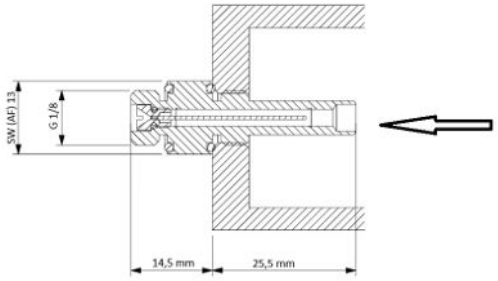


*Fig. 8:* <-- = Pressure side, maximum operating pressure 40 bar

Pressure relief of the system faster than 2 bar per second will cause the test leak to become blocked due to condensation.

# 5 Technical Data

| Calibration leak | Leak rate range | Max. operating pressure | Part number |
|---|---|---|---|
| Screw-in sleeve, 5 mm Ø | Customized | 20 bar - to close 40 bar* | 143 00 |
| Screw-in sleeve, 6 mm Ø | Customized | 20 bar - to close 40 bar* | 143 16 |
| PIN-type housing and hose connectors | Customized | 6 bar | 143 08 |
| PIN-type housing and hose connectors of TL 4 | $10^{-4}$ mbar l/s | 6 bar | 155 65 |
| PIN-type housing and hose connectors of TL 6 | $10^{-6}$ mbar l/s | 6 bar | 155 66 |
| PIN-type housing and VCO connection | Customized | 6 bar | 143 04 |
| Cylindrical housing and VCO connection | Customized | 6 bar | 143 12 |
| Screw-in calibration leak ** | Customized | 40 bar | 143 20 |
| Screw-in calibration leak ** | Customized | 40 bar | 143 21 |

* Up to 40 bar if the capillary is glued in by the customer.

** For details see INFICON homepage

# 6 Decommissioning

## 6.1 Disposing of the device

The device can either be disposed of by the operator or be sent to the manufacturer. The device consists of materials that can be recycled. This option should be exercised to prevent waste and also to protect the environment.

- During disposal, observe the environmental and safety regulations of your country.

## 6.2 Returning the device for maintenance, repair or disposal

**⚠ WARNING**

**Danger due to harmful substances**

Contaminated devices could endanger health. The contamination declaration serves to protect all persons who come into contact with the device. Devices sent in without a return number and completed contamination declaration will be returned to the sender by the manufacturer.

▶ Fill in the declaration of contamination completely.

1. Contact the manufacturer and send in a completed declaration of contamination before return shipment.
   ⇨ You will then receive a return number and the shipping address.
2. Use the original packaging when returning.
3. Before shipping the instrument, attach a copy of the completed contamination declaration to the outside of the package.

For contamination declaration see below.

# Declaration of Contamination

The service, repair, and/or disposal of vacuum equipment and components will only be carried out if a correctly completed declaration has been submitted. Non-completion will result in delay.
This declaration may only be completed (in block letters) and signed by authorized and qualified staff.

**1 Description of product**

Type _____
Article Number _____
Serial Number _____

**2 Reason for return**

_____
_____
_____

**3 Operating fluid(s) used** (Must be drained before shipping.)

_____
_____

**4 Process related contamination of product:**

| | | |
|---|---|---|
| toxic | no ❑ 1) | yes ❑ |
| caustic | no ❑ 1) | yes ❑ |
| biological hazard | no ❑ | yes ❑ 2) |
| explosive | no ❑ | yes ❑ 2) |
| radioactive | no ❑ | yes ❑ 2) |
| other harmful substances | no ❑ 1) | yes ❑ |

The product is free of any substances which are damaging to health yes ❑

1) or not containing any amount of hazardous residues that exceed the permissible exposure limits

2) Products thus contaminated will not be accepted without written evidence of decontamination!

**5 Harmful substances, gases and/or by-products**

Please list all substances, gases, and by-products which the product may have come into contact with:

| Trade/product name | Chemical name (or symbol) | Precautions associated with substance | Action if human contact |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

**6 Legally binding declaration:**

I/we hereby declare that the information on this form is complete and accurate and that I/we will assume any further costs that may arise. The contaminated product will be dispatched in accordance with the applicable regulations.

Organization/company _____
Address _____ Post code, place _____
Phone _____ Fax _____
Email _____
Name _____

Date and legally binding signature _____

Company stamp

Copies:
Original for addressee - 1 copy for accompanying documents - 1 copy for file of sender

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