Translation of the original operating instructions

EcoCheck 4000

Calibration leak

Catalog No.
531-006

From software version
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linb59en1-02-(2603)

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Table of Contents

1 About this Manual

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 Other associated documents

Name	Document number
Ecotec 4000 operating instructions	kina59
SL4000 Instructions for use	lina59

1.2 Explanation of 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

1.3 Target group

This instructions for use is intended for the user of the calibration leak EcoCheck 4000, technically qualified personnel and instructed personnel.

2 Safety

2.1 Intended use

The EcoCheck 4000 is a calibration leak for calibrating or checking the calibration of the INFICON leak detector Ecotec 4000.

The screwed-in gas cartridge contains the tracer gas, which flows into the funnel via a membrane.

The customer can replace an empty gas cartridge of an EcoCheck 4000 with a new gas cartridge from INFICON.

Incorrect usage

Avoid the following unintended uses:

- Use outside the technical specifications, see "Technical data"
- Using the calibration leak on leak detectors that do not explicitly provide for the use of the EcoCheck 4000
- Use of gas cartridges that have not been filled by INFICON
- Use of damaged gas cartridges
- Refilling of gas cartridges
- Opening or manipulating the calibration leak
- Applying high mechanical pressure to the membrane of the calibration opening
- Using or storing the calibration leak in unventilated rooms and in the vicinity of ignition sources
- Inhalation of tracer gas and use of the device near faces
- Use the calibration leak when wet or in water
- Using the device in potentially explosive atmospheres
- Place the calibration leak on an uneven surface so that the device can fall down
- Storing and using the device in hot environments (e.g. surfaces, sunlight)

2.2 Duties of the Operator

- 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 instructions for use, contact INFICON 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 calibration leak by the user, employees or third parties.

Safety-conscious operation

- Operate the calibration leak only if it is in good operating condition and does not show any damage.

- 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 allow instructed personnel to work with the calibration leak. 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

Scope of delivery

Item	Quantity
EcoCheck 4000	1
Inspection certificate	1
Digital operating instructions, to download as PDF from www.inficon.com	1

Transport

NOTICE

Damage due to transport in unsuitable packaging

Transport in unsuitable packaging material can damage the device. Parts inside the device can be damaged during transportation without transport restraint.

- ▶ Keep the original packaging.
- ▶ Transport the device only in the original packaging.

Storage

Always store the device in compliance with the technical data, see "Technical Data [▷ 11]".

4 Description

4.1 Function

The calibration leak EcoCheck 4000 is used to calibrate the INFICON Ecotec 4000 leak detector using a sniffer line. The calibration leak has a replaceable gas cartridge and expels the contained tracer gas at a set rate.

The EcoCheck 4000 can be inserted into the Ecotec 4000 leak detector as an internal calibration leak or used as an external calibration leak.

To calibrate the leak detector, insert the sniffer tip into the calibration opening. A light barrier behind the calibration opening signals this to the leak detector, which then starts the calibration. You will be guided through the calibration process by messages on the displays of the connected leak detector and the sniffer line.

4.2 Structure of the calibration leak

The calibration leak consists of a casing and a gas cartridge. The casing has a calibration opening at the front. There is a photocell in the calibration opening which registers the insertion of the sniffer tip. The gas cartridge is screwed into the casing.

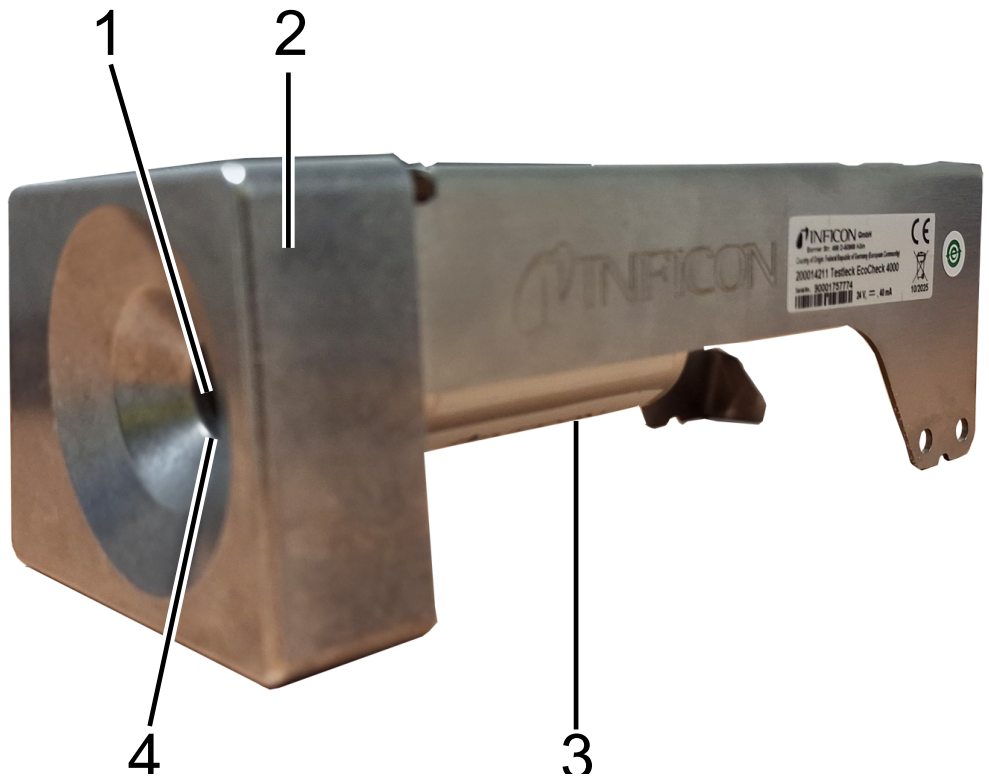

Fig. 1: Front view EcoCheck 4000

1	Calibration opening	3	Gas cartridge
2	Housing	4	LED status display

Fig. 2: Rear view EcoCheck 4000

1	D-Sub connection

4.2.1 Status display for EcoCheck 4000

The calibration opening of the calibration leak has an LED status display. The status display shows the following statuses:

Status display	Meaning
Flashing red - blue - green	Calibration leak powers up.
Quick switch between colors	Calibration leak is being updated.
Glowing green	Calibration leak is ready.
Glowing yellow	• Calibration leak is currently calibrating. • Gas cartridge of the calibration leak must be replaced, see also "Replacing the gas cartridge of the calibration leak [▶ 15]".
Glowing blue.	Sniffer line can be removed from calibration leak again.
Flashing green	New values taken over for calibration
Flashing yellow	New values not taken over for calibration
Flashing white	Calibration check correct
Error messages	
Flashing red 1x short and 1x long	Calibration opening already covered when starting the leak detector
Flashing red 2x short and 1x long	Light barrier detector of the calibration opening defective
Flashing red 3x short and 1x long	

Status display	Meaning
Flashing red 4x short and 1x long	Light barrier of the calibration opening overexposed
Flashing red 5x short and 1x long	Light source of the light barrier defective

4.2.2 Markings on the device

The device contains flammable gas.

The device contains a pressurized gas cartridge.

Hazard warnings are located on the gas cartridge. Whether and in what form additional marking of the device or the installation location is required must be determined by the operator as part of the operational risk assessment.

4.3 Technical Data

Mechanical data

EcoCheck 4000	
Dimensions (W x H x D)	92 mm x 68 mm x 208 mm
Weight	0.5 kg
Usable volume gas cartridge	31 ml

Physical data

EcoCheck 4000	
Calibration gas	R1234yf
Leak rate	4 - 6 g/a

Ambient conditions

EcoCheck 4000	
Max. altitude above sea level	2000 m
Max. relative humidity up to 31°C	80%
Max. relative humidity from 31 °C to 40 °C	Decreasing on linear basis from 80% to 50%
Max. relative humidity above 40°C	50%
Max. storage temperature	-10 °C to +50 °C
Permissible ambient temperature (during operation)	10 °C to 45 °C

5 Installation

5.1 Inserting the calibration leak into the leak detector

⚠ WARNING

Risk of explosion due to overpressure and escaping gas

The gas cartridge of the calibration leak is pressurized and contains flammable gas, which can accumulate to an explosive concentration.

- ▶ Check that all components are in proper working condition before use.
- ▶ In case of major leaks (e.g., significant gas leakage or hissing at the calibration leak), check the leak detector and accessories and dispose of them if damaged. Then ventilate the room and inform INFICON about the leaks.
- ▶ Do not use the calibration leak near ignition sources or in hot environments (e.g., surfaces, sunlight), see also "Technical Data [▷ 11]".
- ▶ In an advanced stage of fire, the gas cartridge can explode. Implement appropriate safety precautions.

⚠ WARNING

Health hazards from substances produced during a fire

If the gas cartridge is overheated or catches fire, toxic decomposition products such as hydrofluoric acid can be formed.

- ▶ Do not inhale any smoke or vapor from the gas cartridge.
- ▶ Take appropriate safety precautions when handling and disposing of the gas cartridge after excessive heat or fire.

The tracer gas continuously flows out of the calibration leak and can collect in the packaging. To avoid affecting the calibration, remove the calibration leak from its packaging before use and store it in a well-ventilated place for 48 hours.

1. Remove the cover of the opening for the calibration leak or a drawer that may be inserted on the front cover of the leak detector.
2. Insert the calibration leak into the front cover of the leak detector until the calibration leak locks into place magnetically.

5.2 Alternatively: Connecting the EcoCheck 4000 as an external calibration leak

NOTICE

Property damage caused by the calibration leak falling down

The calibration leak can be damaged or become leaky if dropped.

- ▶ Only place the calibration leak on flat surfaces from which the calibration leak cannot fall.
- ▶ Protect the calibration leak from vibrations.
- ▶ Replace the calibration leak gas cartridge after it has been dropped, see also "Replacing the gas cartridge of the calibration leak [▷ 15]".

- ▶ Connect the calibration leak to the “Calibration Port” on the back of the leak detector via the D-Sub connection. The length of the cable must not exceed 30 m.

5.3 Updating the software

You can update the calibration leak software via a connected leak detector.

NOTICE

Loss of data due to disconnection

- ▶ Do not switch off the leak detector and do not remove the USB flash drive while the software is being updated.

✓ **Supervisor** rights

✓ The calibration leak is connected to the leak detector.

1. Copy the calibration leak update file to the main directory of a FAT32-formatted USB flash drive.
2. Connect the USB flash drive to the USB port on the leak detector.
3. > Update > Update calibration leak

⇨ The active software version of the calibration leak is displayed at the top of the window.
If there are one or more software versions on the USB flash drive, the latest version found will be displayed in the line below. If this is the same as the version already installed the background is green, otherwise it is red.

4 In order to load the new software version, press on the button "Update".

⇨ After completion there is an automatic restart of the system.

6 Maintenance

6.1 Replacing the gas cartridge of the calibration leak

1 If the calibration leak is inserted in the leak detector, pull the calibration leak out of the leak detector.

2 Unscrew the gas cartridge counterclockwise.

3 Screw the new gas cartridge hand-tight into the casing clockwise. Make sure the thread is inserted straight.

4 Insert the calibration leak into opening for the calibration leak on the front cover of the leak detector or connect the calibration leak externally to the leak detector, see "Inserting the calibration leak into the leak detector [▷ 12]" or "Alternatively: Connecting the EcoCheck 4000 as an external calibration leak [▷ 13]".

5 > Setup > Replace gas cartridge

6 To initialize the gas cartridge for use as an internal or external calibration leak, select the calibration leak where you replaced the gas cartridge.

7 Enter the replacement code for the gas cartridge. Take the replacement code for the gas cartridge from the certificate supplied.
Alternatively, scan the QR code on the supplied inspection certificate or on the gas cartridge with a scanner connected to the leak detector.

⇨ A confirmation screen appears on the display of the leak detector.

8 Save .

⇨ The gas cartridge is initialized.

9 Dispose of the old gas cartridge in accordance with national regulations. Please be aware that the old gas cartridge may still contain gas.

7 Decommissioning

7.1 Disposing of the device

The owner can dispose of the device or it can be sent to INFICON.

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.

Device cannot be disposed of as normal domestic waste.

7.2 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.

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

8 Spare parts

EcoCheck 4000	Catalog number
Gas cartridge EcoCheck 4000, R1234yf	531-011

9 Appendix

9.1 CE Declaration of Conformity

CE

INFICON

EU Declaration of Conformity

We – INFICON GmbH - herewith declare that the products defined below meet the basic requirements regarding safety and health and relevant provisions of the relevant EU Directives by design, type and the versions which are brought into circulation by us. This declaration of conformity is issued under the sole responsibility of INFICON GmbH.

In case of any products changes made, this declaration will be void.

The products meet the requirements of the following Directives:

Directive 2006/42/EG (Machinery)

Directive 2014/30/EU (EMV)

Directive 2011/65/EU (RoHS)

Designation of the product:

Calibration leak (interchangeable equipment)

Models: **EcoCheck 4000**

Applied harmonized standards:

EN ISO 12100 :2010

EN IEC 61010-1:2020

EN 61326-1:2013
Klasse A nach EN 55011

EN IEC 63000:2018

Catalogue number: **531-006**

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Cologne, December 12, 2025

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9.2 RoHS

产品中有害物质的名称及含有的信息表

Table of Hazardous Substance Names and Content Information in Products

	EcoCheck 4000: 有害物质 EcoCheck 4000: Hazardous Substances									
部件名称 Part Name	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Poly-brominated biphenyls (PBBs)	多溴联苯醚 Poly-brominated diphenyl ethers (PBDEs)	领苯二甲酸二正丁酯 Dibutyl phthalate (DBP)	领苯二甲酸二异丁酯 Diisobutyl phthalate (DIBP)	领苯二甲酸丁苄酯 Benzyl butyl phthalate (BBP)	领苯二甲酸二（2-乙基）己酯 Bis (2-ethylhexyl) phthalate (DEHP)
锥形泄漏适配器 Leak adapter conical	X	O	O	O	O	O	O	O	O	O

注 1：O: 表示该有害物质在该部件所有均质材料中的含量均不超出电器电子产品有害物质限制使用国家标准要求。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出电器电子产品有害物质限制使用国家标准要求。

注 2：以上未列出的部件，表明其有害物质含量均不超出电器电子产品有害物质限制使用国家标准要求。

Note 1: O: Indicates that said hazardous substances contained in all the homogeneous materials for this part is below the limit requirement of the national standard for the restriction of hazardous substances in electrical and electronic products.

X: Indicates that said hazardous substances contained in at least one homogeneous material used for this part is above the limit requirement of the national standard for the restriction of hazardous substances in electrical and electronic products.

Note 2: Parts not listed above indicate that their hazardous substances are below the limit requirement of the national standard.

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