

Instruction Manual

GasCheck G3



Description	Item Number
GasCheck G3	D141-32-000





Declaration of Conformity

We, Edwards Limited,
Crawley Business Quarter,
Manor Royal
Crawley,
West Sussex, RH10 9LW, UK

declare under our sole responsibility, as manufacturer and person within the EU authorised to assemble the technical file, that the product(s)

GasCheck G3

D141-32-000

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

EN61010-1: 2010	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use. General Requirements
EN61326-1:2013 (Class B Emissions, Basic Immunity)	Electrical equipment for measurement, control and laboratory Use. EMC requirements. General requirements
EN50581:2012	Technical Documentation for the Assessment of Electrical and Electronic Products with respect to the Restriction of Hazardous Substances

and fulfils all the relevant provisions of

2014/30/EU	Electromagnetic Compatibility (EMC) Directive
2012/19/EU	Waste from Electrical and Electronic Equipment (WEEE) Directive
2011/65/EU	Restriction of Certain Hazardous Substances (RoHS) Directive

Note: This declaration covers all product serial numbers from the date this Declaration was signed onwards.

Larry Marini, Senior Technical Manager


15.07.2015, Eastbourne

Date and Place

This product has been manufactured under a quality management system certified to ISO 9001:2008

Material Declaration

In accordance with the requirements of the Chinese regulatory requirement on the Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products Order No. 32 (also known as 'China RoHS2') and SJ/T 11364 Marking for the Restricted Use of Hazardous Substances in Electronic and Electrical Products:

Product	Product Label	Meaning
GasCheck G3 D141-32-000		<i>This product contains hazardous substances in at least one of the homogeneous materials used which are above the limit requirement in GB/T 26572 as detailed in the declaration table below. These parts can safely be used for the environmental protection use period as indicated.</i>

材料成分声明 Materials Content Declaration

部件名称 Part name	有害物质 Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr VI)	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷电路组件 (PCA) Printed Circuit Assembly (PCA)	X	O	X	O	O	O
传感器外壳 Sensor housing	X	O	O	O	O	O

O: 表示该有害物质在该部件的所有均质材料中的含量低于 GB/T 26572 标准规定的限量要求
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.
X: 表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 标准规定的限量要求
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

These products are EU RoHS compliant, the following Exemptions apply:

6(b) Lead as an alloying element in aluminium containing up to 0.4% by weight

6(c) Copper alloy containing up to 4% lead by weight

7(a) Lead in in high melting temperature type solder (i.e lead based alloys containing 85% by weight or more lead)

(c) I Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound

7(c) II Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher

8(b) Cadmium and its compounds in electrical contacts

15 Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages

34 Lead in cermet-based trimmer potentiometer elements

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1 INTRODUCTION

1.1 Scope

This manual provides installation, operation and maintenance instructions for the Edwards GasCheck G3. You must use the GasCheck G3 as specified in this manual.

Read this manual before you attempt to install, operate and maintain the Edwards GasCheck G3. Important safety information is highlighted as **WARNING** and **CAUTION** instructions; you must obey these instructions. The use of **WARNINGS** and **CAUTIONS** is defined below.



WARNING

Warnings are given where failure to observe the instruction could result in injury or death to people.

CAUTION

Cautions are given where failure to observe the instruction could result in damage to the equipment, associated equipment and process.

The units used throughout this manual conform to the SI international system of measurement.

The following symbols appear on the GasCheck G3:



Warning - refer to accompanying documentation.



Edwards offer European customers a recycling service.

1.2 Description

Refer to Figure 1. The GasCheck G3 is a portable, battery-powered, hand-held gas leak detector. Indications of a leak are shown on the digital display (6) and are also given by a front mounted LED flasher (5) and as audible clicks from a rear panel loudspeaker (2).

Figure 1 - The GasCheck G3



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- | | |
|-------------------------------------|----------------|
| 1. Probe cover (short probe fitted) | 4. Keypad |
| 2. Speaker (on rear of unit) | 5. LED flasher |
| 3. Battery case (on rear of unit) | 6. Display |

The GasCheck G3 has a convenient storage and carrying case, together with a spare battery holder, an additional long flexible probe (for leak detection in areas where access is restricted) and a box-spanner for probe changing.

1.3 Principal of operation

The GasCheck G3 contains a heated thermistor bead that transmits heat to a block of material that remains at a constant temperature. As air is drawn through the detector chamber, a constant amount of heat passes from the bead to the block. Gases that have a different thermal conductivity to air will affect the rate at which heat transmits from the bead to the block. These rates of change are measured and can be displayed as leak rates.

1.4 Applications

You can use the GasCheck G3 on many types of applications, including those listed below.

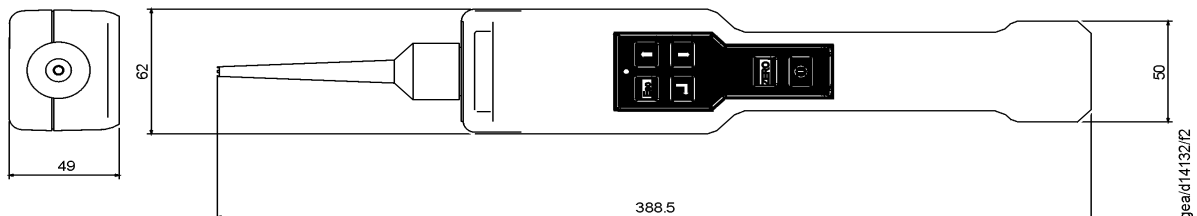
- Quality assurance testing on manufactured component seals.
- Laboratory applications, such as the detection of leaks from gas chromatographs, from mass spectrometers, from gas cylinders and fittings.
- Industrial applications, such as the detection of leaks from gas installations, in cylinder receiving rooms, from pipeline assemblies, the detection of leaks from stored gases and the detection of vapours released from stored chemicals.
- Medical applications, such as the detection of leaks from gas bottles and pipelines and leak testing of membrane materials, glove boxes and so forth.
- Pneumatic applications, such as leak testing of pipeline joints, gaskets and so forth.

2 TECHNICAL DATA

2.1 General

Operating temperature range	0 to 50 °C
Storage temperature range	-25 to 70 °C
Materials of construction:	
GasCheck G3	Polypropylene
Storage case	Polyurethane
Battery requirements	MN1500 or equivalent i.e. AA, LR6 (4 required)
Typical battery lifetime	40 hours (with backlight switched off)
Dimensions:	
Storage case	420 x 320 x 97 mm
GasCheck	See Figure 2
Mass:	
GasCheck	0.5 kg
Complete unit (in storage case)	1.6 kg
Ingress ratings (minimum)	IP20

Figure 2 - Dimensions (mm)



* Length of short probe and nozzle. Length of long probe = 300 mm

2.2 Performance

Response time:

Detection time to T90	1 sec (short probe), 9 sec (long probe)
Clear down time	1 sec (short probe), 9 sec (long probe)
Minimum detectable leak	Refer to Table 1

Gases detected:

The GasCheck G3 can detect any gas or vapour which has a different thermal conductivity to the ambient air in which it was zeroed. The larger the difference the greater the sensitivity, so that GasCheck G3 is not highly sensitive to the gases normally found in large concentrations in the ambient air, e.g. N₂ (nitrogen) and O₂ (oxygen).

Note: The GasCheck G3 cannot identify different gases and it cannot differentiate between different gases.

The GasCheck G3 comes supplied with an extensive list of calibration factors for common gases (refer to [Table 1](#)). In addition, the GasCheck G3 comes with 5 generic 'gas groups' with a variation in sensitivities which can be used as a substitute for gases not listed in [Table 1](#) (group 5 being the highest sensitivity through to group 1 being a low sensitivity); Contact Edwards for advice on which groups to use.

Table 1 - Smallest detectable leak levels

Name	Abbreviation	Minimum sensitivity cc/sec
Hydrogen	H ₂	7.7 E-6 cc/sec
Helium	He	1.0 E-5 cc/sec
Refrigerant R12	R12	2.7 E-5 cc/sec
Refrigerant R1301	R1301	2.4 E-5 cc/sec
Refrigerant R134a	R134a	5.8 E-5 cc/sec
Refrigerant R22	R22	2.6 E-5 cc/sec
Refrigerant R11	R11	3.2 E-5 cc/sec
Sulphur Hexafluoride	SF ₆	2.2 E-5 cc/sec
Carbon dioxide	CO ₂	4.0 E-5 cc/sec
Methane	CH ₄	2.9 E-5 cc/sec
Argon	Ar	3.5 E-5 cc/sec
Oxygen	O ₂	2.9 E-4 cc/sec
Refrigerant R502	R502	3.0 E-5 cc/sec
Refrigerant R404a	R404a	3.2 E-5 cc/sec
Refrigerant R407c	R407c	3.3 E-5 cc/sec
Refrigerant R410a	R410a	3.2 E-5 cc/sec
Refrigerant R507	R507	3.8 E-5 cc/sec

3 INSTALLATION

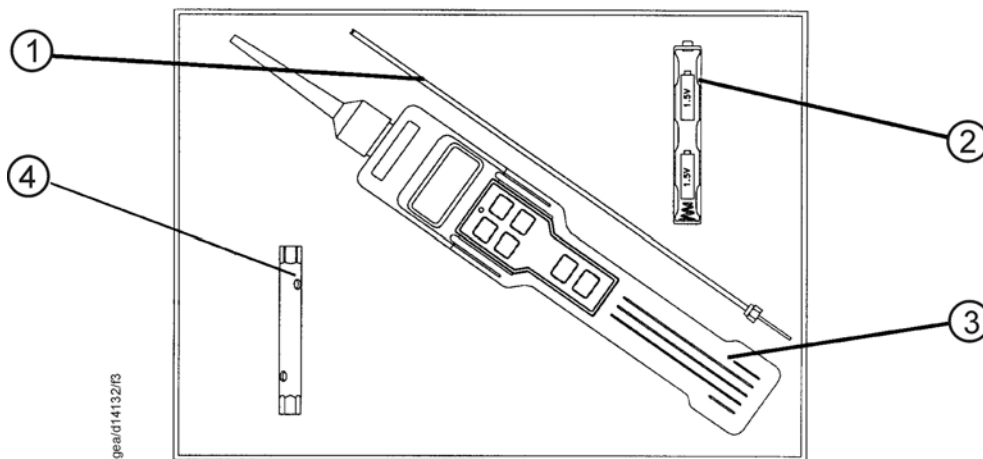
Remove all packaging materials, then open the storage case and inspect the equipment. If the storage case or any other item is damaged, notify your supplier and the carrier in writing within three days; state the Item Number and the Serial Number stamped on rear case of the GasCheck G3, together with your order number and your supplier's invoice number. Do not use the GasCheck G3 if any item is damaged.

Refer to Figure 3 and check that the storage case contains the items listed in Table 2. If any item is missing, notify your supplier in writing within three days.

Table 2 - Checklist of items in the storage case

Quantity	Description	Check <input checked="" type="checkbox"/>
1	GasCheck (with short probe and nozzle fitted)	<input type="checkbox"/>
1	Long probe	<input type="checkbox"/>
1	Box-spanner	<input type="checkbox"/>
1	Spare battery holder (with 4 batteries)	<input type="checkbox"/>

Figure 3 - Items in the storage case



- 1. Long probe
- 2. Spare battery holder
- 3. GasCheck (with short probe and nozzle fitted)
- 4. Box-spanner

4 OPERATION



WARNING

Do not use the GasCheck G3 in safety critical applications.



WARNING

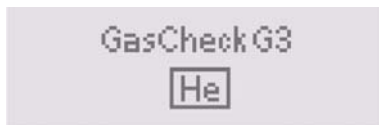
Do not use the GasCheck G3 in potentially explosive atmospheres. The GasCheck G3 is not intrinsically safe.

4.1 Getting started

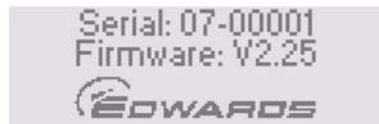
Ensure that the batteries are fitted in accordance with the procedure detailed in [Section 5.1](#).

When the GasCheck G3 is switched on a number of screens are displayed before the unit is ready to detect leaks. Refer to [Figure 4](#).

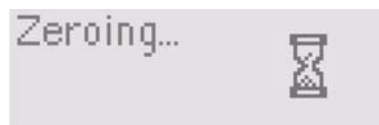
Figure 4 - Screens displayed during GasCheck G3 startup



Displays the gas with which the GasCheck G3 has been calibrated with.



Displays the instrument serial number and the firmware version.

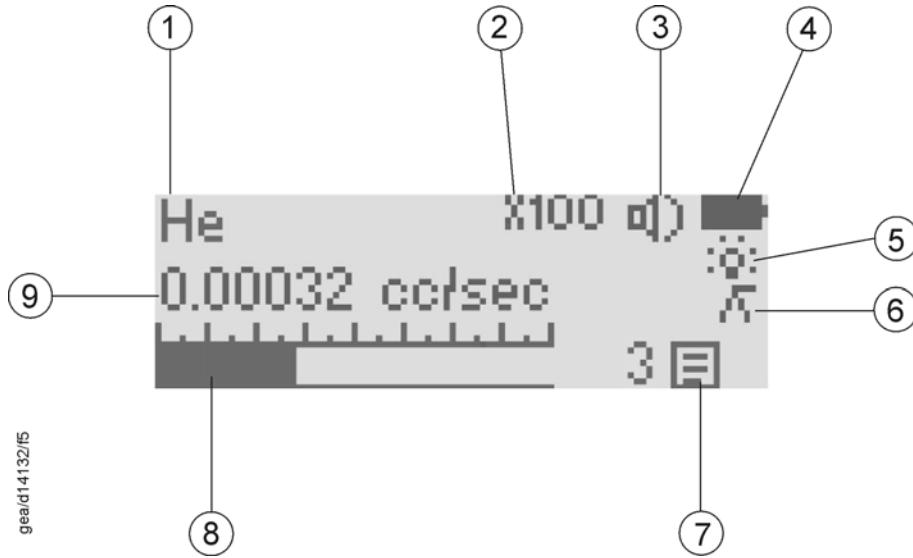


Indicates that the GasCheck G3 is zeroing the input signal.

4.2 GasCheck G3 running screen

The GasCheck G3 displays the 'running screen' whenever the instrument is used to detect leaking gas. Figure 5 describes the information and various icons displayed.

Figure 5 - Running screen



- 1. Gas selection
- 2. Sensitivity
- 3. Sound indicator
- 4. Battery status indicator
- 5. Backlight indicator
- 6. Peak hold indicator
- 7. Data symbol indication of leak rate stored in memory
- 8. Bar graph indication of leak rate
- 9. Leak rate

4.3 Using the GasCheck G3

CAUTION

Ensure that the ambient air is clean and free from any tracer gas when the GasCheck G3 is switched on. Failure to do so will result in inaccurate zero readings.

CAUTION

Do not touch the probe or brass sensor housing. Any changes in heat can result in significant changes in signal causing false readings.

CAUTION

Avoid placing the instrument on wet or dirty surfaces. Blocking of the probe will result in instrument failure.

CAUTION

Do not bend the probes. The accuracy of the GasCheck G3 will be affected.

- Switch on the GasCheck G3 using the key.
- While on the running screen, ensure that the sensitivity is set to the '×100' range as this is the most sensitive. Adjust the sensitivity using the or keys if required.
- Hold the GasCheck G3 at 45° to the object under test and draw the probe across the test area at a rate of approximately 25mm per second. When a leak is detected, the bar graph will fill, the reading will increase and the frequency of the LED flasher will increase. The frequency of the audio indicator will also increase if this function has been switched on in the main menu.
- When a leak is detected, return the probe to the area where the leak was identified and move the probe around slowly until the exact source is identified. Hold the probe steady until the leak rate stabilizes.

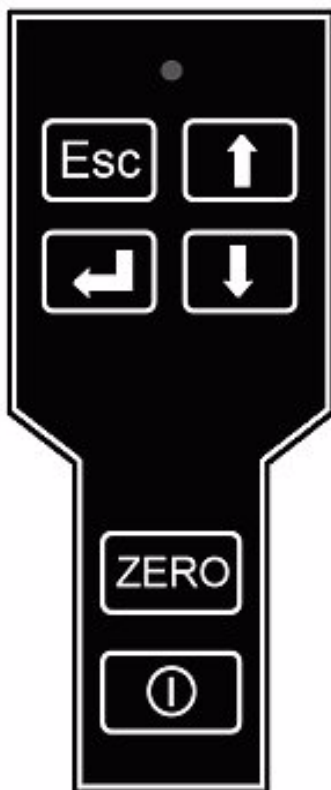
Note: If the GasCheck G3 bar graph fills completely or the instrument display indicates a flashing '99999,' the leak rate has exceeded the detection limit. In the event of the leak rate being too great, the sensitivity should be adjusted to a lower level using the or keys.

Note: Variation in temperature, humidity or background gas may result in a constant offset being detected on the GasCheck G3. To reset the zero, hold the GasCheck G3 away from the source of contamination and press the key. Human breath contains moisture and carbon dioxide which may also affect the instruments readings.

4.4 GasCheck G3 keypad

The GasCheck G3 is operated using a 6 button tactile keypad as shown in Figure 6.

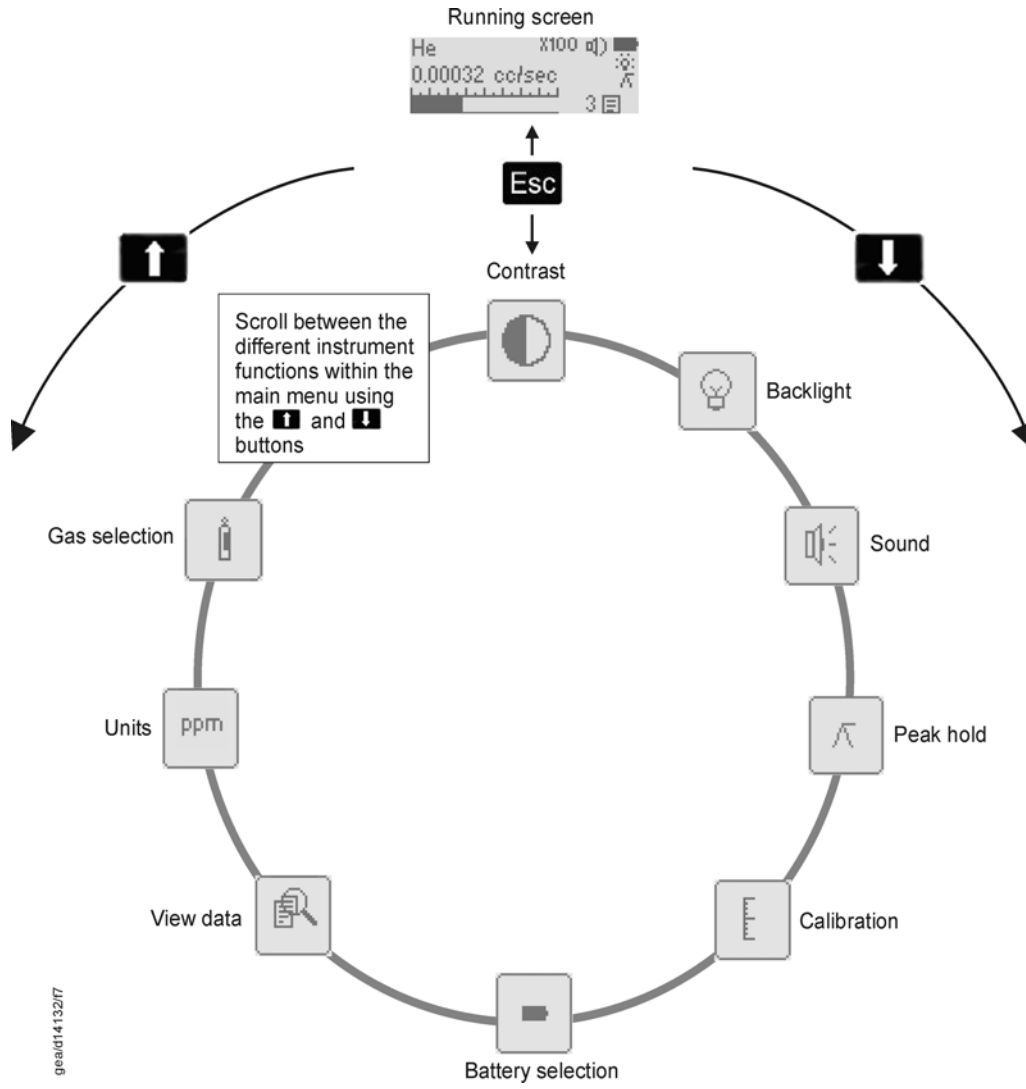
Figure 6 - GasCheck G3 keypad layout



Button	Function
	Escape returns the display to the previous screen. Also used to abort an adjustment. Repeated pressing of Escape will return the display to the 'Running Screen'.
	Enter is used to select functions and to accept settings after parameter has been changed.
	Up is used to scroll up through the function menu. Also used to adjust settings.
	Down is used to scroll down through the function menu. Also used to adjust settings.
	Zero is used to zero the background reading.
	Power is used to switch the unit on. Press and hold the key until the bar reaches the right hand side of the screen to switch the unit off. <i>Note: The unit automatically switches off if no key presses are detected for approximately 10 minutes.</i>

Pressing the key switches the GasCheck G3 between the 'Running screen' and the main menu. Once in the main menu screen, pressing the up and down buttons scroll between the different instrument functions. Refer to Figure 7.

Figure 7 - GasCheck G3 menu structure



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Table 3 - Using the GasCheck G3 functions

Image	Function
	<p>Contrast adjusts the contrast of the GasCheck G3 LCD display. Significant variations in ambient temperature conditions may cause the display to appear too dark or feint. When selected a number indicating the contrast as a percentage; use the ↑ and ↓ keys to adjust the display contrast to the desired level. Press the Esc key to exit to the main menu.</p>
	<p>Backlight selects whether the backlight is on or off. In daylight the user may not be able to determine if the backlight is on or off therefore a symbol on the main running screen shows the status. Use the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu.</p> <p><i>Note: The backlight significantly reduces battery life.</i></p>
	<p>Sound switches the audible indication of the leak rate on and off. The frequency of the signal increases as detected gas levels increase. Use the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu.</p> <p><i>Note: An audible 'beep' can also be heard when ever the key pad is pressed, this beep cannot be switched off.</i></p>
	<p>Peak hold can be used to record the highest detected reading on the display until the ← key is pressed. Use the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu. When using the GasCheck G3 in peak hold mode, press the ← key to clear the held reading. The reading held on screen will be logged when the ← key is pressed.</p>
	<p>Calibration can be used to switch between the factory calibration setting and user defined calibration parameters. Factory calibration cannot be adjusted. User defined calibration is described in Section 5.2.</p>
	<p>Battery selection can be used to select whether the batteries fitted are Alkaline (non-rechargeable) or Nickel Metal Hydride (rechargeable). Select the battery type using the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu.</p> <p><i>Note: Failing to select the correct battery type will not damage the instrument or affect it's ability to detect gas, however it will cause the battery indicator to read incorrectly.</i></p>
	<p>View data allows 10 readings to be logged in internal memory and recalled later. To store a reading press the ← key while on the main running screen. When readings are stored in memory a symbol will appear on the Main running screen. When the memory is full the 'E' symbol will flash. The stored data can be viewed by scrolling through the logged readings using the ↑ and ↓ keys. To delete the stored data press and hold the ← key, the 'E' symbol will flash, continue holding the ← key until the data is deleted. Press the Esc key to exit to the Main menu.</p>
	<p>Units selects the leak rate units displayed on the LCD screen. Select the required units using the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu. The following units are available:</p> <p>cc/sec= Cubic Centimetres per second (volumetric leak rate) ppm= Parts per million, (concentration) mg/m3 = Milligrams per metre cubed (concentration) g/yr= Grams per year (an alternative volumetric leak rate)</p>

Image	Function
	<p>Display allows the cc/sec and g/yr units to be displayed in decimal or exponential format. Select the required format using the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu.</p> <p><i>Note: Note: readings in ppm and mg/m3 can only be displayed in decimal form.)</i></p>
	<p>Gas selection allows the correct calibration curve for the gas to be detected to be selected. Refer to Table 1 for a list of gases available. Select the required format using the ↑ or ↓ key to move the 'tick' to the desired position and then press the Esc key to return to the Main Menu.</p>

4.5 Probe options

CAUTION

Do not remove the semi transparent probe sleeve, this ensures that the inner metal probe remains 1mm from any surface in order to prevent any accidental dirt and moisture ingress.

CAUTION

Only use the box spanner supplied with the GasCheck G3 to tighten the probes. Other tools may result in over tightening of the nut and permanent damage to the instrument.

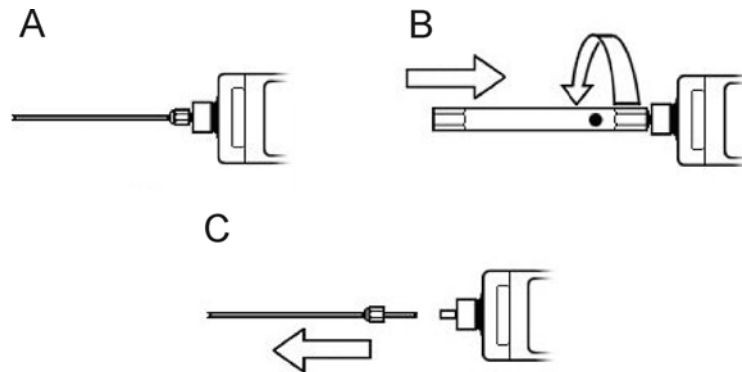
In some circumstances, the grey probe cover may restrict access to the area to be leak tested. Refer to [Figure 8](#). Simply remove the probe cover (A) by pulling firmly with one hand to reveal the short probe (B).

Figure 8 - Remove the probe cover



Some applications may require a longer probe in order to reach inaccessible areas. The GasCheck G3 is supplied with a 300mm 'Long probe' in the storage case. Ensure that the instrument is switched off. Access the short probe by removing the probe cover as shown in [Figure 8](#).

Figure 9 - Change between short and long probes



Refer to Figure 9. Slide the box spanner over the short probe (A) as shown in Figure 9 (B). Unscrew the probe counter-clockwise. Remove the spanner and the probe assembly (C). To replace the short probe with the long probe, perform the same sequence in reverse order.

Note: When detecting leaks with the long probe fitted, the response time of the GasCheck G3 is significantly increased. The speed at which the probe is drawn over the inspection surface should be reduced to around 10mm per second.

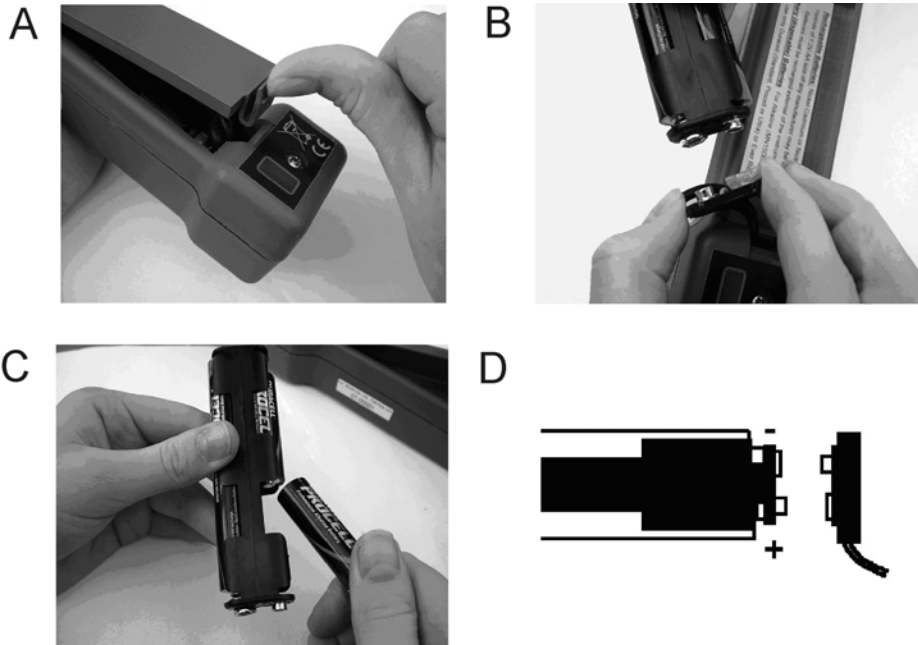
5 MAINTENANCE

5.1 Replacing/fitting batteries

Refer to Figure 10. Remove the battery cover using a finger nail or small screwdriver (A). Unclip the battery holder from the clip (B). Remove the old batteries and replace with 4 new ones (C). Reconnect the battery holder to the GasCheck G3 ensuring that the polarity is correct (D). The battery holder can then be placed back in the instrument. Ensure that wires are not trapped when refitting the battery cover.

It is recommended that after battery replacement, the GasCheck G3 is programmed with the correct battery selection (alkaline or nickel metal hydride) as described in Section 4.4. This ensures that the battery status indicator can correctly identify the remaining capacity of the battery.

Figure 10 - Replacing batteries



5.2 Calibration

CAUTION

Calibration should only be attempted by qualified service engineers. Edwards offers a calibration facility for GasCheck G3 instruments. Contact Edwards for more details.

The GasCheck G3 is supplied with two calibration settings, factory and custom. The Factory calibration setting cannot be changed. The custom calibration allows the user to calibrate the GasCheck G3 at the local atmospheric pressure which may offer an improvement over the factory calibration.

The custom calibration procedure varies depending on whether the unit has been set to concentrations (ppm or mg/m3) or volumetric leak rates (cc/sec or g/yr).

5.3 Custom calibration (concentration units)

CAUTION

Do not bend the probes. The accuracy of the GasCheck G3 will be affected.

CAUTION

Do not pressurise the sample bag during calibration. Significant errors in the calibration will result.

Read the instructions below fully before calibrating the GasCheck G3. The following procedure should be followed if the GasCheck G3 has been set to concentrations (ppm or mg/m3).

Table 4 - Calibration of the GasCheck G3 (concentration units)

	Fill an empty (uncontaminated) sample bag with 5000ppm helium gas before starting the calibration procedure. Also remove the outer grey probe cover from the GasCheck G3.
	Select the calibration procedure on the main menu (refer to Section 4.4).
	Select custom cal by using the ↑ or ↓ key to move the 'tick' to and press the ↵ key.
	An option appears to allow different concentrations of helium tracer in the test gas. The GasCheck G3 can accommodate concentrations between 4900 and 5100ppm helium. Press the ↑ or ↓ keys to select the correct concentration and press the ↵ key.
	Ensure that the GasCheck G3 is in clean air and press the ↵ key. The Instrument will take a few seconds to zero and then the 'Ready' screen will appear.
	Fully insert the probe into the sample bag and press the ↵ key. The GasCheck G3 will sequence through the cold and hot stages of calibration and will display a summary of values.
	Press the ↵ key to return to the main calibration screen. Press the Esc key to start using the instrument or press the ↵ key to calibrate again.

5.4 Custom calibration (cc/sec leak rate units)

CAUTION

Do not breathe on the probe. The GasCheck G3 can detect changes in humidity and carbon dioxide and significant errors in the calibration will result.

Read the instructions below fully before calibrating the GasCheck G3. The following procedure should be followed if the GasCheck G3 has been set to cc/sec .

Note: Calibration of the GasCheck G3 in cc/sec leak rate units requires the use of a portable reference leak. Contact Edwards for more details.

Table 5 - Calibration of the GasCheck G3 (cc/sec leak rate units)

	Ensure the pressure on the portable reference leak is set correctly.
	Select the calibration procedure on the main menu (refer to Section 4.4).
	Select custom cal by using the or key to move the 'tick' to ' ' icon and press the key.
	Ensure that the GasCheck G3 is in clean air and press the key. The Instrument will take a few seconds to zero and then the 'Ready' screen will appear.
	Fully insert the probe into the portable reference leak and press the key. The GasCheck G3 will sequence through the cold and hot stages of calibration and will display a summary of values.
	Press the key to return to the main calibration screen. Press the key to start using the instrument or press the key to calibrate again.

6 STORAGE AND DISPOSAL

6.1 Storage

If you store the unit for a long time, we recommend that you remove the batteries in order to reduce the risk of damage due to battery leakage.

Refit the GasCheck G3 in its storage case and store in dry cool conditions as described in [Section 2.1](#).

Unpack as described in [Section 3](#).

6.2 Disposal

Dispose of the GasCheck G3, components and used batteries safely in accordance with all local and national environmental safety requirements. Alternatively, you may be able to recycle the GasCheck G3; contact Edwards or your supplier for advice (also see below).

The GasCheck G3 is within the scope of the European Directive on Waste Electrical and Electronic Equipment, 2002/96/EC. Edwards offer European customers a recycling service for the GasCheck G3 at the end of the product's life. Contact Edwards for advice on how to return the GasCheck G3 for recycling.

7 SPARES AND ACCESSORIES

7.1 Introduction

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, China, France, Germany, Israel, Italy, Japan, Korea, Singapore, United Kingdom, U.S.A and a world-wide network of distributors. The majority of these centres employ Service Engineers who have undergone comprehensive Edwards training courses.

Order spare parts and accessories from the nearest Edwards company or distributor. When ordering, state for each part required:

- Serial number stamped on the rear of your GasCheck G3
- Item Number and description of part

7.2 Spares and accessories

Table 6 - GasCheck G3 spares and accessories

Spare	Item Number
Long probe	D141-28-802
Short probe	D141-28-801
Replacement battery holder	D141-30-802
Nozzle	D141-30-800

7.3 Calibration

Contact your supplier for details of the calibration service available, which includes the issue of a traceable certificate to National Standards.

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Return the equipment or components for service

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components - Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components - Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs.

Download the latest documents from www.edwardsvacuum.com/HSForms/, follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to Edwards.

Note: *If we do not receive a completed HS2 form, we will not accept the return of the equipment.*

