

# GC01P

User Manual

# Table of Contents

I	Disclaimer	3
II	Safety Instructions	4
Part I	Introduction	5
Part II	Installation	6
Part III	Repair	9
Part IV	Technical Data	10
4.1	Operation comparisons to a standard orifice .....	10
Part V	Obligations of the Operator and Disposal	12
5.1	Obligations of the Operator .....	12
5.2	Dismantling / Disposal .....	12

# I Disclaimer

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred.

This manual does not include all of the details of design, production, or variation of the equipment nor does it cover every possible situation which may arise during installation, operation or maintenance. HyQuest Solutions shall not be liable for any incidental, indirect, special or consequential damages whatsoever arising out of or related to this documentation and the information contained in it, even if HyQuest Solutions has been advised of the possibility of such damages.



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## II Safety Instructions

- Read the user manual including all operating instructions prior to installing, connecting and powering up the HyQuest Solutions GCO1P. The manual provides information on how to operate the product. The manual is intended to be used by qualified personnel, i.e. personnel that have been adequately trained, are sufficiently familiar with installation, mounting, wiring, powering up and operation of the product.
  - Keep the user manual on hand for later reference!
  - If you encounter problems understanding the information in the manual (or part thereof), please consult the manufacturer or its appointed reseller for further support.
  - HyQuest Solutions GCO1P is intended to be used in hydrometeorological or environmental monitoring applications.
  - Before starting to work, you have to check the functioning and integrity of the system.
    - Check for visible defects on the GCO1P, this may or may not include any or all of the following mounting facilities, connectors and connections, mechanical parts, internal or external communication devices, power supplies or power supply lines, etc.
    - If defects are found that jeopardize the operational safety, work must be stopped. This is true for defects found before starting to work as well as for defects found while working.
  - Do not use the HyQuest Solutions GCO1P in areas where there is a danger of explosion.
  - The present user manual specifies environmental/climatic operating conditions as well as mechanical and electrical conditions. Installation, wiring, powering up and operating the HyQuest Solutions GCO1P must strictly comply with these specifications.
  - Perform maintenance only when tools or machinery are not in operation.
  - If guards are removed to perform maintenance, replace them immediately after servicing.
  - Never make any electrical or mechanical diagnostics, inspections or repairs under any circumstances. Return the product to the manufacturer's named repair centre. You can find information on how to return items for repair in the relevant section of the HyQuest Solutions website.
-  Disposal instructions: After taking the HyQuest Solutions GCO1P out of service, it must be disposed of in compliance with local waste and environmental regulations. The HyQuest Solutions GCO1P is never to be disposed in household waste!
-  Inputs and outputs of the device are protected against electric discharges and surges (so-called ESD). Do not touch any part of the electronic components! If you need to touch any part, please discharge yourself, i.e. by touching grounded metal parts.

# 1 Introduction

Thank you for choosing our product. We hope you will enjoy using the device.

HyQuest Solutions manufactures, sells, installs and operates quality instrumentation, data loggers and communication technology. Products are designed with passion for environmental monitoring and with a deep understanding of the quality, accuracy and robustness needed to fulfil the requirements of measurement practitioners in the field.

The present User Manual will help you understand, install and deploy the device. If, however, you feel that a particular information is missing, incomplete or confusing, please do not hesitate to contact us for further support!

The HyQuest Solutions Gas Chamber Orifice (GCO1P) is designed to replace the standard orifice in a gas purge water level measurement system. The GCO1P permits the use of extremely low bubble rates with increased sensitivity and near total reduction of lag between actual level rise and orifice pressure. It can also operate satisfactorily when buried under up to 1 m of silt.

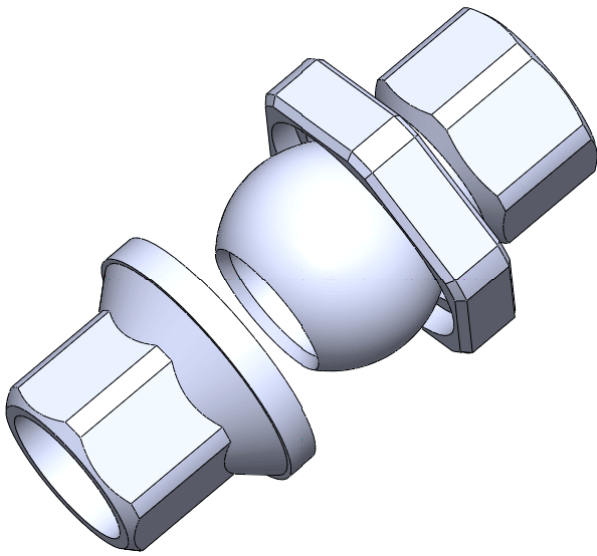
Bubble rates as low as 10 bubbles per minute can be used, thereby reducing gas consumption and prolonging the life of the gas bottle, or reducing the duty cycle operation of the compressor pump on our HS-55/45/40/30 bubbler water level measurement systems.

The main GCO1P chamber is constructed entirely of polyethylene with a copper-plated brass screen to deter aquatic growth, and is supplied fitted with a 2 inch flexible coupling to suit a standard 2 inch threaded pipe and to allow easy installation as the coupling allows up to 30 degrees of adjustment from horizontal. The GCO1P has an in-built 1/4 inch NPT hex brass coupling and is supplied with 1/4 inch NPT male to 3/8 inch. The bottom of the chamber includes a revolving copper-plated brass screen for cleaning purposes. The unit is designed to be fitted to existing installations preferably during low water condition.

## Advantages of the GCO1P

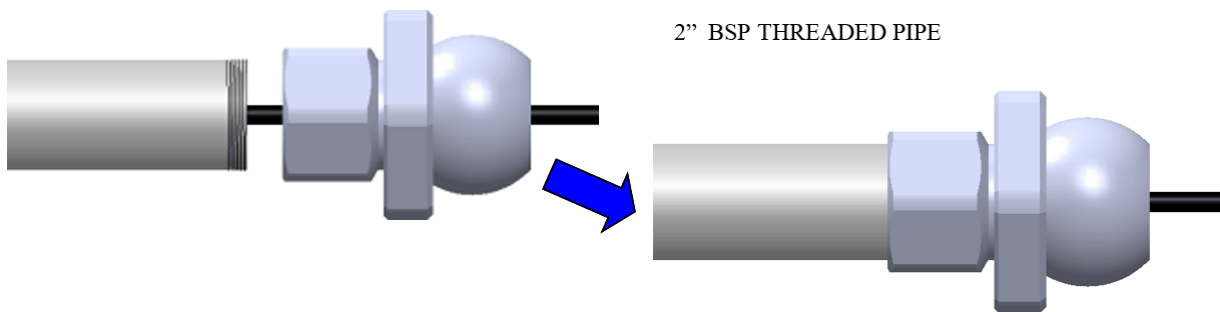
- High impact resistant; durable Polyethylene
- Revolving screen for ease of cleaning
- Non-corrosive
- Copper-plated screen to reduce aquatic growth
- Cost-effective
- Flexible Coupling
- Low bubble rate consumption (reduce bubble rate to 10 bubbles/min)
- Prolongs the life of the gas bottle
- Longer battery life by reducing the duty cycle operation of a gas purge compressor

## 2 Installation



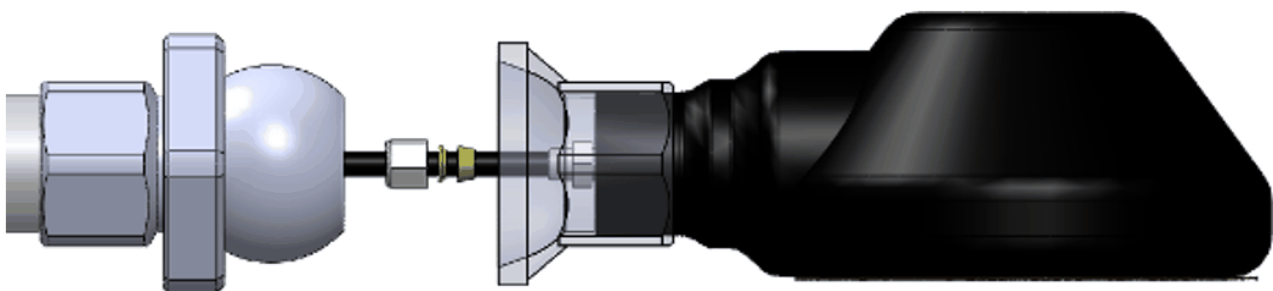
### Step 1:

Secure Socket/Locknut to the 2" BSP pipe



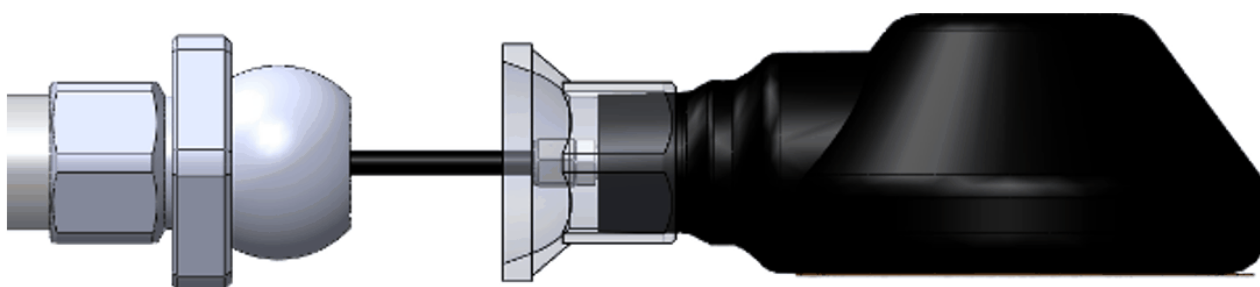
### Step 2:

Undo the nut and ferrules; feed the tube nut and the two ferrules onto the river line as shown in figure below



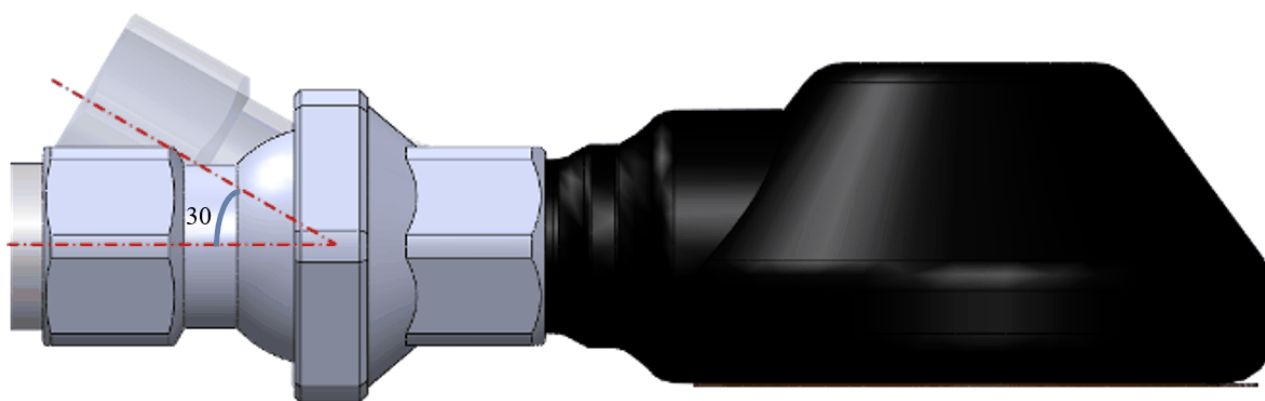
### Step 3:

Tighten the tube nut to the GCO1P fitting as shown in figure below



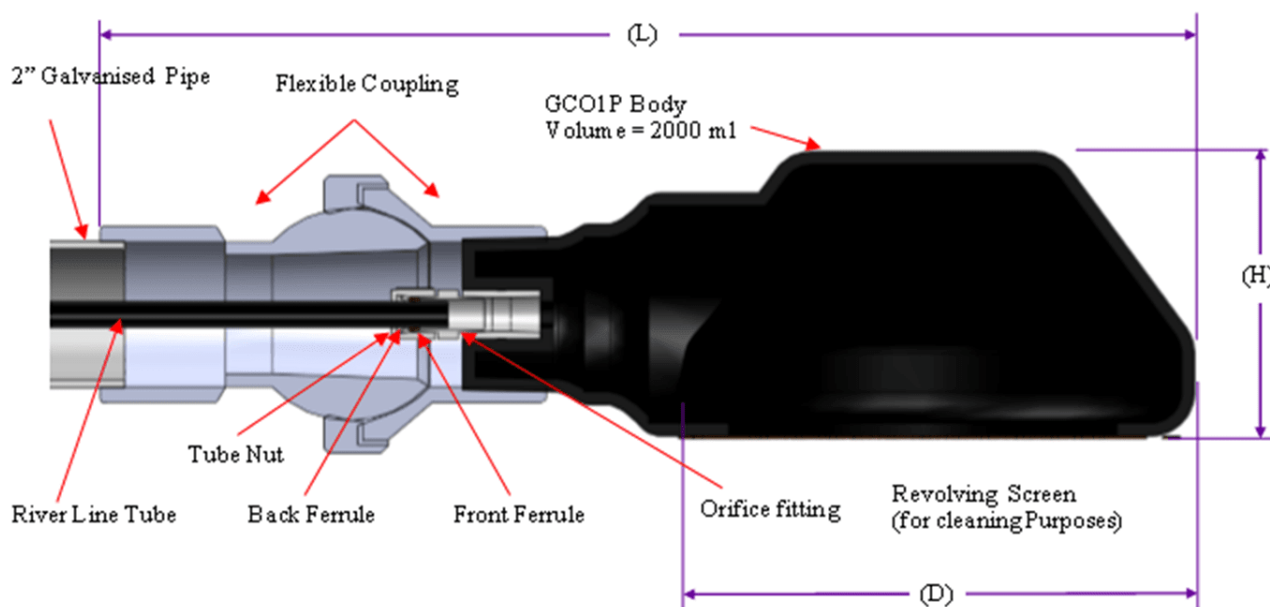
**Step 4:**

Place the GCO1P assembly onto the mounting pipe, adjust coupling so the GCO1P is horizontal to the water, and tighten the flexible coupling with GCO1P in position.



**Note:**

Ensure that the GCO1P is horizontally level as shown. Flexible coupling allows adjustment up to 30 degrees.



GCO1P DIMENSIONS		
Dimension	Metric (mm)	Imperial (inch)
L	410	16.2

<b>GCO1P DIMENSIONS</b>		
<b>Dimension</b>	<b>Metric (mm)</b>	<b>Imperial (inch)</b>
D	210	8.3
H	110	4.3



### 3 Repair

HyQuest Solutions precision instruments and data loggers are produced in quality-controlled processes. All HyQuest Solutions production and assembly sites in Australia, New Zealand and Europe are ISO 90001 certified. All equipment is factory tested and/or factory calibrated before it is shipped to the client. This ensures that HyQuest Solutions products perform to their fullest capacity when delivered.

Despite HyQuest Solutions most rigorous quality assurance (QA), malfunction may occur within or outside of the warranty period. In rare cases, a product may not be delivered in accordance with your order.

In such cases HyQuest Solutions' return and repair policy applies. For you as a customer, this means the following:

1. Contact HyQuest Solutions using the Repair Request Form made available online:  
[https://cdn.hyquestsolutions.eu/fileadmin/Services/Downloads/HS-RepairRequestForm\\_EU.pdf](https://cdn.hyquestsolutions.eu/fileadmin/Services/Downloads/HS-RepairRequestForm_EU.pdf)  
In response you will receive a reference number that must be referenced on all further correspondence and on the freight documents accompanying your return shipment.
2. Please provide as much information and/or clear instructions within the return paperwork. This will assist our test engineers with their diagnosis.
3. Please do not ship the goods prior to obtaining the reference number. HyQuest Solutions will not reject any equipment that arrives without reference number; however, it may take us longer to process.

Custom requirements for items sent to HyQuest Solutions for warranty or non-warranty repairs: Check with your national customs/tax authorities for details, processes and paperwork regarding tax exempt return of products. Typically, special custom tariff codes are available (such as HS Code = 9802.00) that verify the item is being returned for repair and has no commercial value. Please note that the customs invoice / dispatch documents should also clearly state: "Goods being returned to manufacturer for repair - No Commercial value". It is mandatory to have any returned goods accompanied by a commercial invoice on headed paper. HyQuest Solutions reserves the right to charge the customer for time spent rectifying incorrect customs documents.

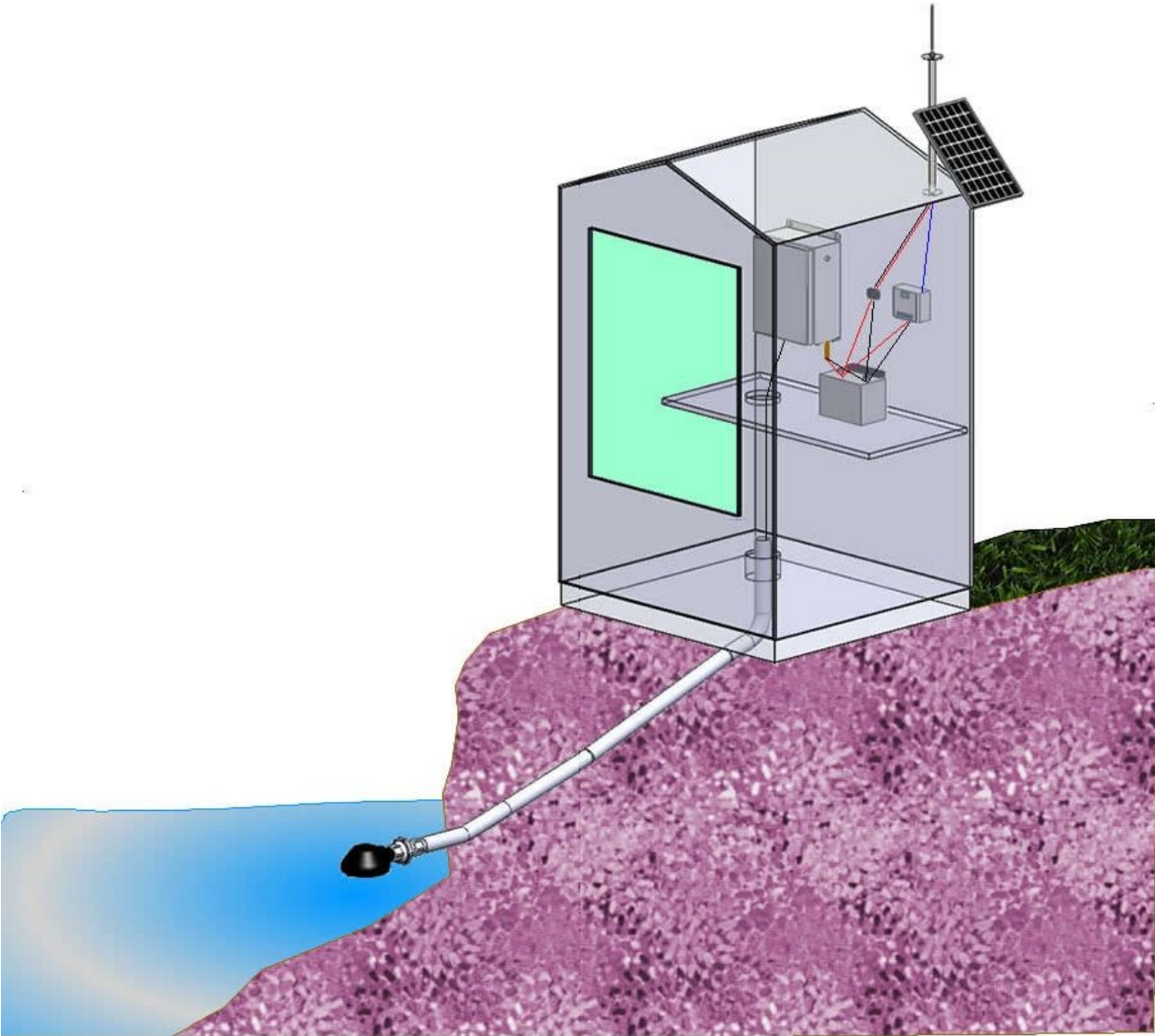
**Note:** Please ensure that your goods are packed carefully and securely. Damage that occurs during transit is not covered by our warranty and may be chargeable.

## 4 Technical Data

Material	<ul style="list-style-type: none"> <li>▪ Body: Polyethylene</li> <li>▪ Screen: Brass copper-plated</li> <li>▪ Coupling: 316 Stainless Steel</li> </ul>
Dimensions	410 mm × 210 mm × 110 mm
Zero lag at 2.5 mH <sub>2</sub> O with a rate of rise of 9 metres/hour (see manual for details)	

### 4.1 Operation comparisons to a standard orifice

Float Encoder (Level in mm) Based on 9 metres/hr rate of rise	HS-23 Dry Bubble Unit With Standard Orifice 27 Bubbles/Min		HS-23 Dry Bubble Unit With Gas Chamber Orifice 10 Bubbles/Min	
	Reading	Lag	Reading	Lag
0	0	--	0	--
810	578	232	810	0
1700	1200	500	1700	0
2400	1540	860	2398	2
3600	2294	1306	3588	12



## 5 Obligations of the Operator and Disposal

This chapter contains the following subsections:

- Obligations of the Operator [121](#)
- Dismantling / Disposal [121](#)

### 5.1 Obligations of the Operator

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#### *European Union*

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In the Single European Market it is the responsibility of the operator to ensure that the following legal regulations are observed and complied with: national implementation of the framework directive (89/391/EEC) and the associated individual directives, in particular 2009/104/EC, on minimum safety and health requirements for the use of work equipment by employees at work.

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#### *Worldwide*

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Regulations: If and where required, operating licences must be obtained by the operator. In addition, national or regional environmental protection requirements must be complied with, regardless of local legal provisions regarding the following topics:

- Occupational safety
- Product disposal

Connections: Local regulations for electrical installation and connections must be observed.

### 5.2 Dismantling / Disposal

When disposing of the units and their accessories, the applicable local regulations regarding environment, disposal and occupational safety must be observed.

#### **Before dismantling**

- Electrical Devices:
  - Switch off the units.
  - Disconnect electrical appliances from the power supply, regardless of whether the appliances are connected to the mains or to another power source.
- Mechanical devices:
  - Fix all loose components. Prevent the device from moving independently or unintentionally.
  - Loosen mechanical fastenings: Please note that appliances can be heavy and that loosening the fastenings may cause them to become mechanically unstable.

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#### *Disposal*

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Operators of old appliances must recycle them separately from unsorted municipal waste. This applies in particular to electrical waste and old electronic equipment.

Electrical waste and electronic equipment must not be disposed of as household waste!

Instead, these old appliances must be collected separately and disposed of via the local collection and return systems.

Integrated or provided batteries and accumulators must be separated from the appliances and disposed of at the designated collection point. At the end of its service life, the lithium-ion battery must be disposed of according to legal provisions.

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*EU WEEE Directive*

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As players in the environmental market, KISTERS AG and HyQuest Solutions are committed to supporting efforts to avoid and recycle waste. Please consider:

- Avoidance before recycling!
- Recycling before disposal!



This symbol  indicates that the scrapping of the unit must be carried out in accordance with Directive 2012/19/EU. Please observe the local implementation of the directive and any accompanying or supplementary laws and regulations.

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