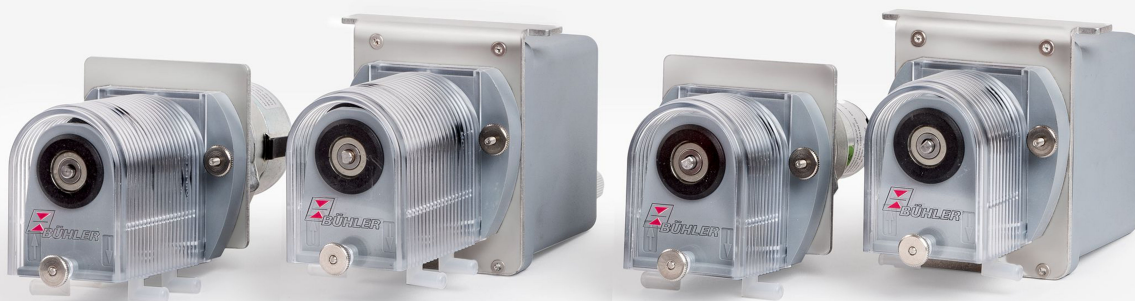




Peristaltic condensate and metering pumps

CPsingle, CPdouble with hoses -O₂

Installation and Operation Instructions

Original instructions





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E-Mail: analyse@buehler-technologies.com

Read this instruction carefully prior to installation and/or use. Pay attention particularly to all advises and safety instructions to prevent injuries. Bühler Technologies can not be held responsible for misusing the product or unreliable function due to unauthorised modifications.

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Document information

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1 Introduction

1.1 Intended use

This unit is intended to discharge condensate from cooled process fluids. The temperature of these media is approx. 5 °C (41 °F). The unit is suitable for use in normal, non-hazardous areas.

CP pumps with hose sets for high-purity oxygen (suffix -O2) are optimised especially for use with increased oxygen concentrations with regard to the parts in contact with the medium. A mandatory special cleaning of the components is carried out to minimise organic and inorganic contamination. Manufacturing the products under controlled cleanliness conditions ensures compliance with the limit values in accordance with EIGA Doc 33/18.

1.2 Scope of delivery

- 1 x Peristaltic pump
- Product documentation
- Connection- and mounting accessories (only optional)

1.3 Ordering instructions for peristaltic pumps with -O2 hoses

The item number is a code for the configuration of your unit. Please use the following model key:

4492	X	X	X	0	2	0	X	-O2	Product characteristic
									Gas path
	1								Single gas path
	2								Double gas path
									Version
	1								Housing version
	2								Built-in version
									Supply voltage
		2							115/230 V AC
		4							24 V DC
									Area of application
			0						Standard applications – CE
									Hose material ¹⁾
				2					Versilon® F-5500-A
									Flow rate/hour
					0				0.3 l/h (115/230 V AC and 24 V DC)
									Hose connection ¹⁾
						1			straight hose nipple
						2			angled hose nipple
						3			straight and angled hose nipple
						4			Screw connection (metric) DN 4/6
						5			Screw connection (US) 1/6"-1/4"
						6			angled hose nipple and screw connection (metric)
						7			angled hose nipple and screw connection (US)
						8			straight hose nipple and screw connection (metric)
						9			straight hose nipple and screw connection (US)
								-O2	Optimised for high-purity oxygen

¹⁾ With the O₂ version, a cleaned hose set is provided in a second bag.

2 Safety instructions

2.1 Important advice

The device may only be operated if:

- the product is used under the conditions described in the operating and installation manual, in accordance with the type label, and for the intended applications; Any unauthorised modifications to the device will void the warranty provided by Bühler Technologies GmbH,
- the information and markings on the type plates are observed,
- the limit values specified in the data sheet and in this operating and installation manual are observed,
- the device is not operated outside its specification,
- monitoring/protective devices are correctly connected,
- Service and repairs not described in these instructions is performed by Bühler Technologies GmbH,
- Using genuine replacement parts.

These operation instructions are a part of the equipment. The manufacturer reserves the right to change performance, specification or design data without prior notice. Keep this manual for future reference.

Signal words for warnings

DANGER

Signal word for an imminent danger with high risk, resulting in severe injuries or death if not avoided.

WARNING

Signal word for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.

CAUTION

Signal word for a hazardous situation with low risk, resulting in damaged to the device or the property or minor or medium injuries if not avoided.

NOTICE

Signal word for important information to the product.

Warning signs

These instructions include the following warnings:



General warning sign



General mandatory sign



Voltage warning



Unplug from mains



Warning not to inhale toxic gases



Wear respiratory equipment



Warning of corrosive substances



Wear a safety mask



Warning of explosion hazard



Wear gloves

2.2 General hazard warnings

The device may only be installed by qualified specialist personnel who are familiar with the safety requirements and associated risks. In addition, through their professional training, they possess knowledge of the relevant standards and regulations.

Be sure to observe the safety regulations relevant to the installation location and the generally accepted rules of technology. Prevent malfunctions and thereby avoid personal injury and damage to property.

The operator of the system must ensure that:

- Safety instructions and operating manuals are available and observed,
- the respective national accident prevention regulations are observed,
- the permissible data and operational conditions are maintained,
- protective devices are used and the required maintenance is performed,
- the device is disposed of according to the law,
- valid national installation regulations are observed,

Maintenance, Repair

Please note during maintenance and repairs:

- Repairs to the unit must be performed by Bühler authorised personnel.
- Only perform conversion-, maintenance or installation work described in these operating and installation instructions.
- Always use genuine spare parts.
- Do not install damaged or defective spare part. If necessary, visually inspect prior to installation to determine any obvious damage to the spare parts.

Always observe the applicable safety and operating regulations in the respective country of use when performing any type of maintenance.

DANGER

Electrical voltage

Electrocution hazard.



- a) Disconnect the device from power supply.
- b) Make sure that the equipment cannot be reconnected to mains unintentionally.
- c) The device must be opened by trained staff only.
- d) Regard correct mains voltage.



DANGER

Toxic, corrosive condensate



- a) Protect yourself from toxic, corrosive condensate during work.
- b) Wear the appropriate protective equipment.
- c) Observe the national safety regulations!



DANGER

Use in explosive areas



The equipment is **not** suitable for use in explosive areas.

3 Transport and storage

The products should only be transported in their original packaging or a suitable replacement.

The equipment must be protected from moisture and heat when not in use. It must be stored in a covered, dry, dust-free room at room temperature.

Especially for CP pumps with hose sets for O2 applications (suffix -O2), it is essential to rule out any contamination of components in contact with the media during storage.

4 Installation and connection

4.1 Installation site requirements

Be sure to maintain the approved ambient temperature. Please also note the technical data of the attached gas cooler.

When mounting to a subframe, it is screwed directly to the cooler housing.

The unit is intended for use in enclosed areas. Adequate protection from the weather must be provided when used outdoors.

CAUTION



Contamination of cleaned components

For CP pumps with hose sets for O₂ applications (suffix -O2), contamination with oil, grease, dust, particles, lint, hair, etc. must be ruled out for fire protection reasons when working on components that come into contact with media. If necessary, adapt your operational and organisational measures with regard to the work clothing to be used, hygiene regulations, etc. If necessary, move such work to a suitable, cleaner work area.



4.2 Mounting

WARNING



Hazardous electrical voltage

The device must be installed by trained staff only.

CAUTION



Wrong mains voltage

Wrong mains voltage may damage the device.
Regard the correct mains voltage as given on the type plate.

At the bottom of the mounting bracket are two bores. These are used to screw down the device.

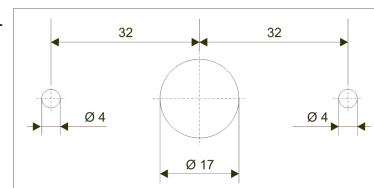
Push the hoses onto the hose connectors and ensure they are leak-tight. The pumping direction is indicated on the housing.

With the option for high-purity oxygen (suffix -O2), each component is packaged separately. To prevent soiling, these should only be unpacked shortly before use.

4.2.1 Installing the built-in version

The built-in version (without housing) of the CPsingle is delivered pre-assembled. Proceed as follows to install:

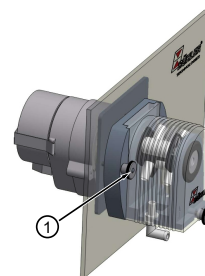
Prepare the mounting plate for the pump. The locations of the bores are indicated in the adjacent drawing. The mounting plate must not be thicker than 3 mm.



Remove the knurled nuts M3 (1) at both ends.

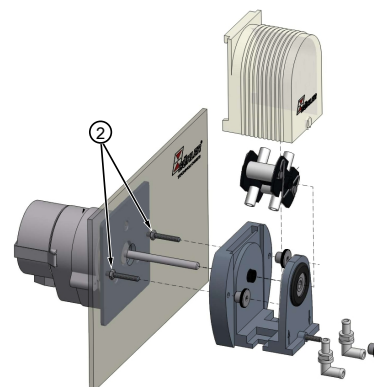
Pull the entire pump head off the gear axle with a slight back and forth motion.

You will see two hex nuts M3 (2).



Remove the two hex nuts and insert the drive motor including retaining plate and pressfit stubs into the prepared coupler from the back.

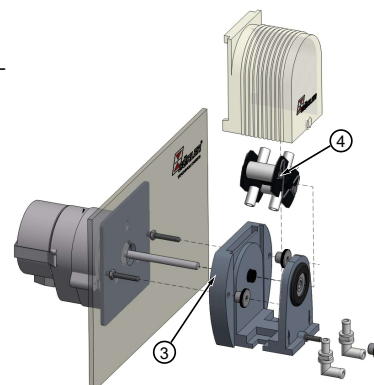
Tighten the hex nuts M3.



Attach the pump head bracket (3) to the gear axle.

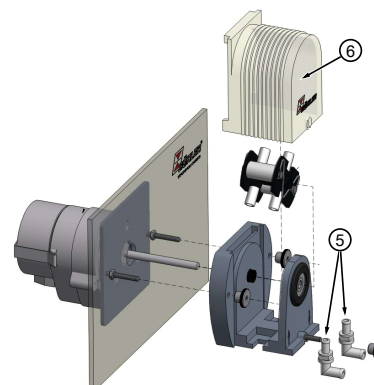
Insert the rotor (4) – cylindrical neck forward - into the pump head bracket, now slide the entire assembly onto the gear axle and the retaining bolts.

Tighten (1) knurled nuts.



Insert the hose fitting (5) with hose into the square breakouts.

Finally, attach the hood (6) and secure with the knurled nut.



4.3 Electrical connections

4.3.1 Electrical Connections (housing version / 115 V or 230 V)

Make sure that mains voltage and frequency meet the specifications of the motor (voltage tolerance $\pm 5\%$ and frequency tolerance $\pm 2\%$.)

Peristaltic pumps of housing version type SA-AC (230/115 V) are delivered as standard with a 2 m connecting cable.

The fixed connection cable for the housing version has three numbered braids and one PE connection.

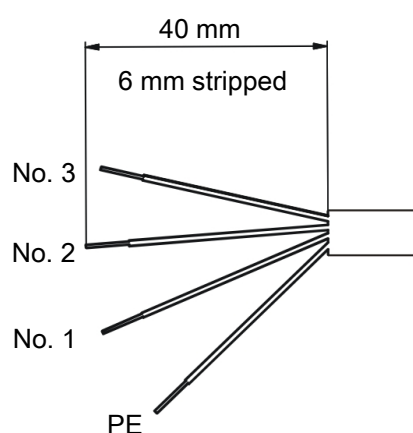
⚠ The protective earth conductor must be connected to the yellow/green wire of the connection cable.

Select mains and protective earthing cross-sections according to the rated current.

For the electrical connections especially for the protective conductor use a cable cross-section from minimum $0,5\text{ mm}^2$.

Obey differing specifications on the type plate. The conditions at the installation site must meet all specifications on the type plate.

When connecting to a 115 V or 230 V supply, connect the following braids:



Power supply	Connection	Remark	
115 V	Braid 2; 3 and PE	DANGER	Braid 1 is live and must be professionally insulated!
230 V	Braids 1; 3 and PE	DANGER	Braid 2 is live and must be professionally insulated!

4.3.2 Electrical Connections (built-in version / 115 V or 230 V)

The three strands (500 mm long) moulded to the motor are white, yellow and blue.

When connecting to a 115 V or 230 V supply, connect the following braids:

Power supply	Connection	Remark	
115 V	white and blue	DANGER	The yellow strand is live and must be professionally insulated!
230 V	yellow and blue	DANGER	The white strand is live and must be professionally insulated!

4.3.3 24 V DC

The drive motor features two braids (AWG 24, 250 mm long), which must be connected to the 24 V DC supply as follows:

Power supply	Connection	Remark
24 V	red: + U	Positive terminal supply
	black: - U	Negative terminal supply

5 Operation and control

NOTICE



The device must not be started or operated outside the specifications!

NOTICE



Installing peristaltic **pumps** CPsingle / CPdouble limits the maximum permissible **operating pressure** in the system!
Operating pressure ≤ 1 bar

The peristaltic condensate pump does not have its own switch. It starts running immediately once the supply voltage is switched on.

6 Maintenance

For all work on the device, the general instructions in the chapter Safety instructions **must be observed!**

DANGER**Electrical voltage**

Electrocution hazard.

- a) Disconnect the device from power supply.
- b) Make sure that the equipment cannot be reconnected to mains unintentionally.
- c) The device must be opened by trained staff only.
- d) Regard correct mains voltage.

**DANGER****Toxic, corrosive condensate**

Protect yourself from toxic, corrosive condensate when performing any type of work.
Wear appropriate protective equipment.



The tube inside the pumps is a wear item and must regularly be checked for leaks. Replace as described in chapter Replacing the hose .

With the option for high-purity oxygen, only use the explicitly designated replacement items with the suffix -O2.

7 Service and repair

If an error occurs during operation, you can find troubleshooting and corrective information in this chapter or contact our service team.

Repairs to the equipment may only be performed by Bühler authorised personnel.

If you have any questions, please contact our service department:

Tel.: +49-(0)2102-498955 or your local representative

For more information on your custom maintenance and startup services, please visit: <https://www.buehler-technologies.com/service>.

If, after rectifying any faults and switching on the mains voltage, the device does not function correctly, it must be checked by the manufacturer. Please send the equipment inside suitable packaging to:

Bühler Technologies GmbH – BZL

Halle A1 – Aircompark

Halskestr. 24

40880 Ratingen

Germany

Any device with a potential leak must not be sent. Please contact our service team for more information.

For devices for O₂ applications, seal the condensate path or return it without any parts in contact with the medium.

Please also attach the completed and signed RMA decontamination statement to the packaging. We will otherwise be unable to process your repair order.

You can find the form in the appendix of these instructions, or simply request it by e-mailing:

service@buehler-technologies.com

7.1 Carrying out maintenance, repair and modification work

For all work on the device, the general instructions in the chapter [Safety instructions](#) [> page 3] must be observed!

For condensate pumps with hoses for **O₂ applications (suffix -O₂)** there are special requirements for avoiding contamination when carrying out maintenance, repairs and modifications:

- Use only cleaned and undamaged tools. We recommend cleaning with a lint-free cleaning cloth, ideally pre-soaked with a mixture of isopropanol and demineralised water for residue-free degreasing.
- Only use cleaned, original spare parts (see chapter [Spare parts and accessories for condensate pumps with -O₂ hoses](#) [> page 12]).
- Do not use any parts whose original packaging is damaged.
- The use of compressed air is only permitted if it meets at least class 2 according to ISO 8573-1:2010.

DANGER



Electrical voltage

Electrocution hazard.

- a) Disconnect the device from power supply.
- b) Make sure that the equipment cannot be reconnected to mains unintentionally.
- c) The device must be opened by trained staff only.
- d) Regard correct mains voltage.



DANGER



Toxic, corrosive condensate

Protect yourself from toxic, corrosive condensate when performing any type of work. Wear appropriate protective equipment.



7.2 Replacing the hose

NOTICE



Never grease the pump hose!

Check all parts for contamination prior to assembly and clean with a damp cloth as necessary.

- Close gas supply.
- Switch off device and disconnect all plugs (e.g. connector plug status output, supply input, etc.).
- Disconnect supply and discharge tube on peristaltic pump (**observe safety notes!**).
- Loosen but do not remove centre knurled nut. Flip down the screw.
- Pull cover up and off.
- Unplug external connections and remove hose.
- Replace hose (Bühler spare part) and install peristaltic pump in reverse order.
- Restore the power and gas supply.

7.3 Spare parts

Please also specify the model and serial number when ordering parts.

Upgrade and expansion parts can be found in our catalog.

Available spare parts:

7.3.1 Spare parts and accessories for condensate pumps with -O2 hoses

O₂ heat exchanger sets

Item no.	Description
WTSET21-O2	Connection kit DN5/8 -CP O ₂ (for DTS-6 heat exchanger)
WTSET32-O2	Connection kit G3/8-CP O ₂ (for TS and PTS heat exchangers)
WETSET33-O2	Connection kit NPT3/8-CP O ₂ (for TS-I and PTS-I heat exchangers)

O₂ CP-Sets (incl. hose and connections)

Item no.	Description
44920035021-O2	straight hose nipple O ₂
44920035022-O2	angled hose nipple O ₂
44920035023-O2	straight and angled hose nipple O ₂
44920035024-O2	Screw connection (metric) DN 4/6 O ₂
44920035025-O2	Screw connection (US) 1/6"-1/4" O ₂
44920035026-O2	angled hose nipple and screw connection (metric) O ₂
44920035027-O2	angled hose nipple and screw connection (US) O ₂
44920035028-O2	straight hose nipple and screw connection (metric) O ₂
44920035029-O2	straight hose nipple and screw connection (US) O ₂

8 Disposal

The applicable national laws must be observed when disposing of the products. Disposal must not result in a danger to health and environment.

The crossed out wheelie bin symbol on Bühler Technologies GmbH electrical and electronic products indicates special disposal notices within the European Union (EU).



The crossed out wheelie bin symbol indicates the electric and electronic products bearing the symbol must be disposed of separate from household waste. They must be properly disposed of as waste electrical and electronic equipment.

Bühler Technologies GmbH will gladly dispose of your device bearing this mark. Please send your device to the address below for this purpose.



We are obligated by law to protect our employees from hazards posed by contaminated devices. Therefore please understand that we can only dispose of your waste equipment if the device is free from any aggressive, corrosive or other operating fluids dangerous to health or environment. **Please complete the "RMA Form and Decontamination Statement", available on our website, for every waste electrical and electronic equipment. The form must be applied to the packaging so it is visible from the outside.**

Please return waste electrical and electronic equipment to the following address:

Bühler Technologies GmbH – BZL
WEEE
Halle A1 – Aircompark
Halskestr. 24
40880 Ratingen
Germany

Please also observe data protection regulations and remember you are personally responsible for the returned waste equipment not bearing any personal data. Therefore please be sure to delete your personal data before returning your waste equipment.

9 Appendices

9.1 Technical data for peristaltic pumps with -O2 hoses

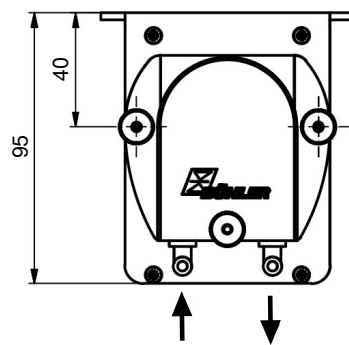
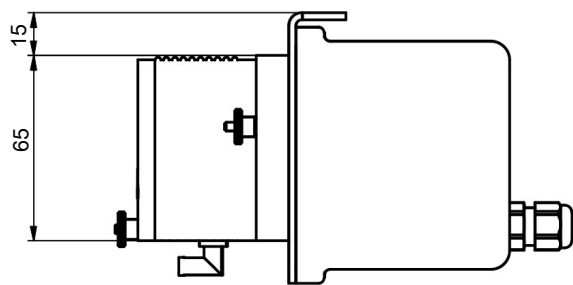
Technical Data CPSingle/CPdouble Peristaltic Pumps

Rated voltage/power input: at $T_{amb} = 20\text{ °C}$ and under load	230 V 50/60 Hz, 0.028 A	
	115 V 50/60 Hz, 0.046 A	
	24 V DC, 0.1 A ¹⁾	
Flow rate:	0.3 l/h (50 Hz)/0.36 l/h (60 Hz)/0.3 l/h (24 V DC)	
Mechanical load:	Tested based on DNV CG-0339 vibration class A (0.7 g) 2 Hz-13.2 Hz amplitude $\pm 1.0\text{ mm}$ 13.2 Hz-100 Hz 0.7 g acceleration	
Inlet vacuum:	max. 0.8 bar	
Inlet pressure:	max. 1 bar	
Outlet pressure:	1 bar	
Weight:	CPsingle-SA: 0.7 kg	CPdouble-SA: 0.74 kg
	CPsingle-OEM: 0.47 kg	CPdouble-OEM: 0.51 kg
	CPsingle-24V: 0.44 kg	CPdouble-24V: 0.49 kg
IP rating:	IP 44 (housing version)	
	IP 40 (built-in version)	
Ambient temperatures:	$T_{max} = 55\text{ °C}$ (housing version)	
	$T_{max} = 60\text{ °C}$ (built-in version)	
Cable lengths:	2 m (housing version 115/230 V)	
	500 mm (built-in version 115/230 V)	
	250 mm (24 V DC)	
Parts in contact with media		
Hose:	Versilon® F-5500-A	
Connections:	PEEK Straight 5 mm (recommended hose 4/6) Elbow 6 mm (recommended hose 5/8) Screw-in connection DN 4/6 or 1/6"- 1/4")	

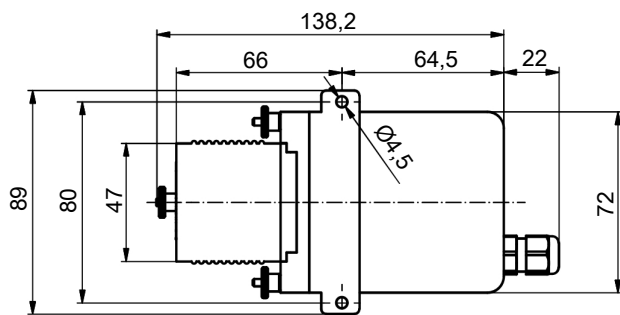
¹⁾ Lifetime 24 V DC 3000 h

9.2 Dimensions for 115/230 V peristaltic pump

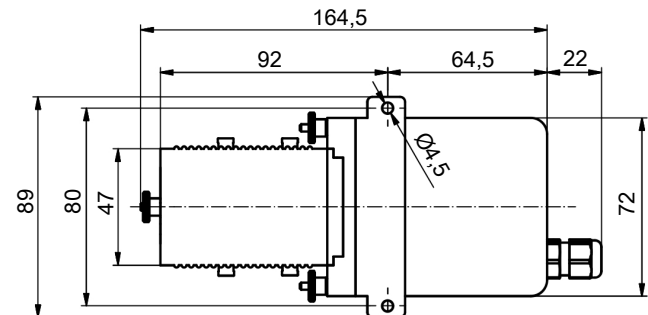
Housing versions



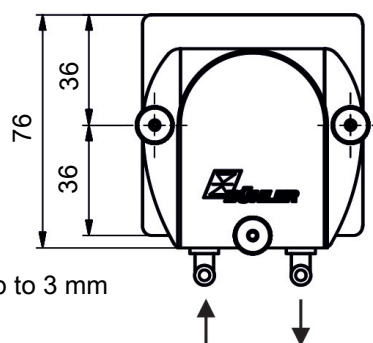
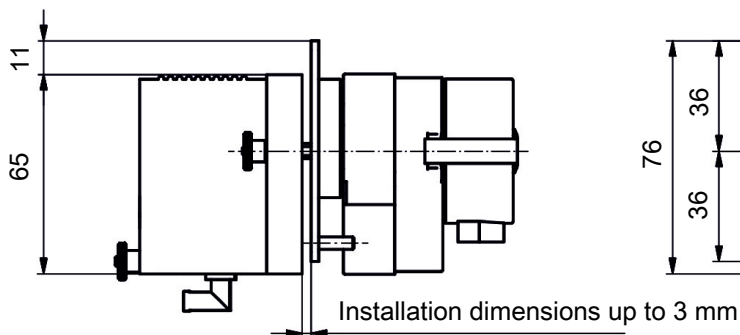
Housing version with 1 gas path



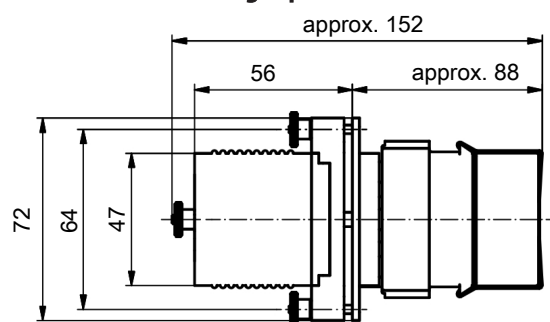
Housing version with 2 gas paths



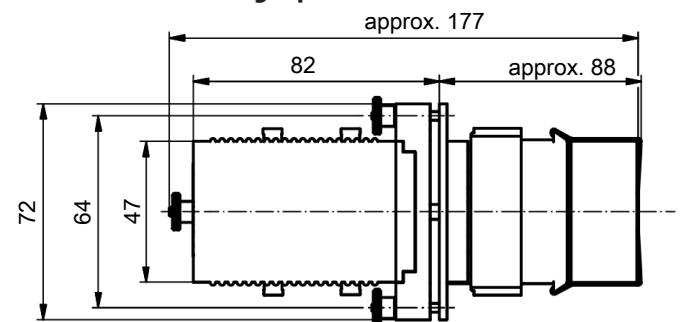
Built-in versions



Built-in version with 1 gas path

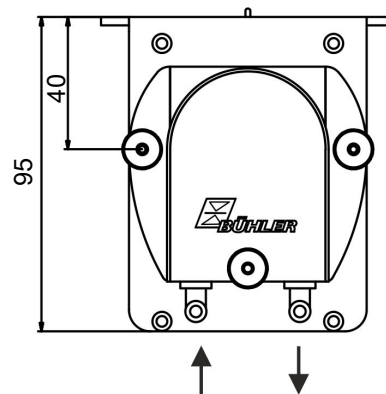
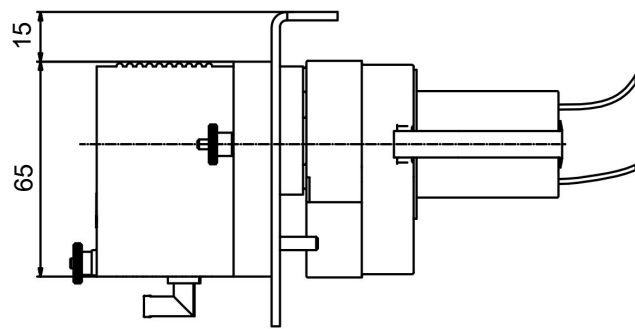


Built-in version with 2 gas paths

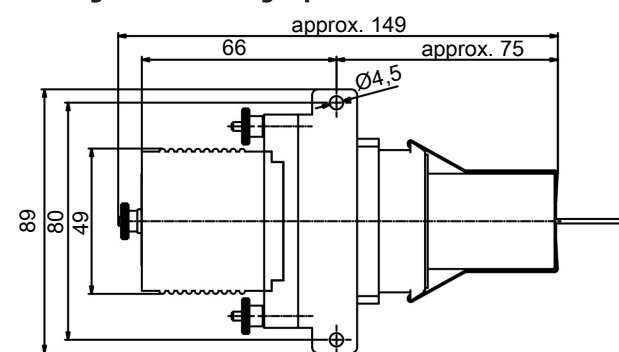


9.3 Dimensions for 24 V peristaltic pump

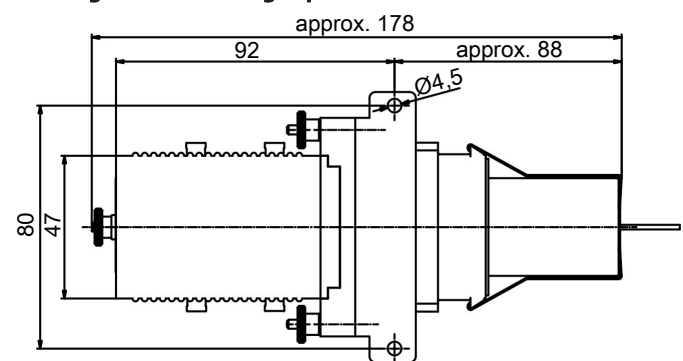
Housing versions



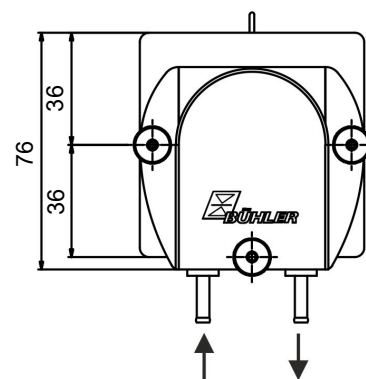
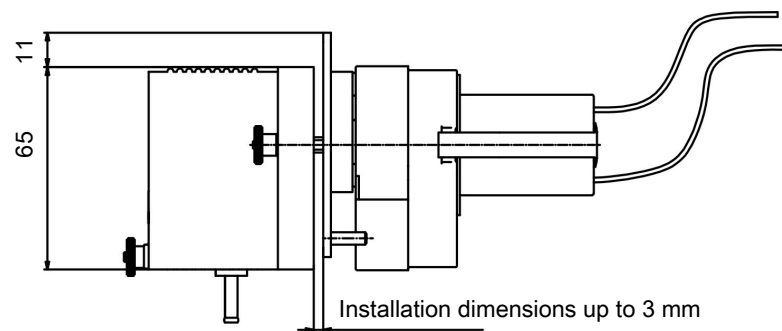
Housing version with 1 gas path



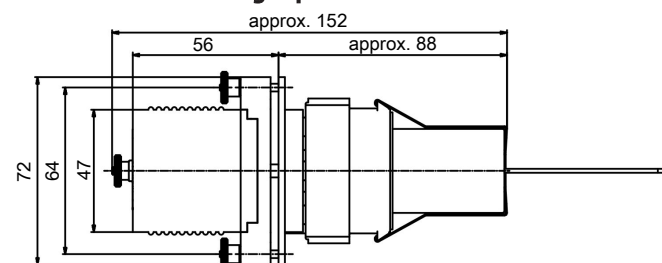
Housing version with 2 gas paths



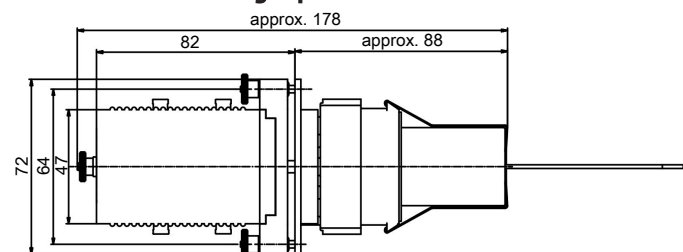
Built-in versions



Built-in version with 1 gas path



Built-in version with 2 gas paths



10 Attached documents

- Declaration of Conformity KX 450012
- O₂ declaration (CPset)
- Resistance table
- RMA – Decontamination Declaration

EG/EU-Konformitätserklärung **EC/EU Declaration of Conformity**



Hiermit erklärt Bühler Technologies GmbH, dass die nachfolgenden Produkte den wesentlichen Anforderungen der Richtlinie **2006/42/EG (Maschinenrichtlinie)** in ihrer aktuellen Fassung entsprechen.
*Bühler Technologies GmbH hereby declares that the products listed below comply with the essential requirements of Directive **2006/42/EC (Machinery Directive)** in its current version.*

Die Produkte sind Maschinen nach Artikel 2 a).
The products are machinery within the meaning of Article 2(a).

Folgende EU-Richtlinien wurden berücksichtigt:
The following EU directives were taken into account:

2014/30/EU (EMV/EMC)
2011/65/EU (RoHS)

Produkt/product: Peristaltische Kondensatpumpe / *Peristaltic condensate pump*
Typen/types: CPsingle, CPdouble

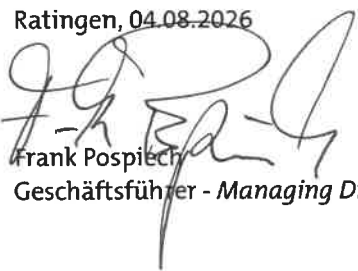
Das Betriebsmittel ist zur Ableitung von Kondensat aus Gasanalysesystemen bestimmt.
The equipment is designed to discharge condensate from gas analysis systems.

Das oben beschriebene Produkt der Erklärung erfüllt die einschlägigen EU-Harmonisierungsrechtsvorschriften:
The product described in this declaration complies with the relevant EU harmonisation legislation:

EN 809:1998 + A1:2009
EN 61326-1:2013
EN IEC 63000:2018

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.
The manufacturer bears sole responsibility for issuing this Declaration of Conformity.

Ratingen, 04.08.2026


Frank Pospiech
Geschäftsführer - *Managing Director*



UK Declaration of Conformity

The manufacturer Bühler Technologies GmbH declares, under its sole responsibility, that the product complies with the requirements of the following UK legislation:

Supply of Machinery (Safety) Regulations 2008

The following legislation was taken into account:

Electromagnetic Compatibility Regulations 2016

Product: Peristaltic condensate pump
Types: CPsingle, CPdouble

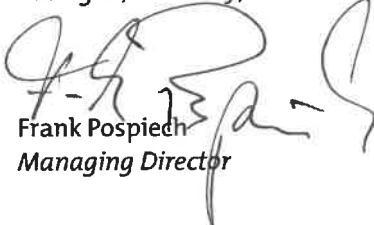
The equipment is designed to discharge condensate from gas analysis systems.

The product of the declaration described above complies with the relevant harmonised standards:

EN 809:1998 + A1:2009
EN 61326-1:2013

The manufacturer bears sole responsibility for this Declaration of Conformity.

Ratingen, Germany, 04.08.2026



Frank Pospiech
Managing Director

O2-Erklärung *O2 Declaration*

Schlauchset für den Einsatz mit hochreinem Sauerstoff optimiert

*Hose set optimised for use with
high-purity oxygen*

Applikationen mit Sauerstoff: Partikel-, Öl- und Fettfreiheit

Mit dieser Erklärung bestätigen wir, dass alle medienberührenden Flächen der nachfolgenden Produkte in Anlehnung an die Vorgaben der EIGA Doc 33/18 und des VDA-Band 19 gereinigt und gefertigt sind.

Applications with oxygen: free of particles, oil and grease

With this declaration, we confirm that all surfaces of the following products that come into contact with media have been cleaned and manufactured in accordance with the specifications of EIGA Doc 33/18 and VDA Volume 19.

Produkt / Product	Schlauchset für Kondensatpumpen / Hose set for condensate pumps
Typ / Type:	CP-Set O2
Art-Nr. / Item no.:	4492003502X-O2

Ratingen, den 03.08.2026

Bühler Technologies GmbH



Hose set optimized for use with high-purity oxygen



Applications with oxygen: Free from particles, oil and grease

For use with high-purity oxygen, the product requires special cleaning to ensure that it is free from oil and grease, as oxygen is a strong oxidising agent. Under unfavourable conditions, oxygen can cause spontaneous combustion of organic substances such as particles, oils and fats, and generally promotes the combustion of substances. Oils and fats can even react explosively on contact with oxygen. We use special cleaning and production processes to ensure the safe use of our products with high-purity oxygen and to avoid the above-mentioned undesirable reactions.

With this declaration, we confirm that all surfaces of the following products that come into contact with media have been cleaned and manufactured in accordance with the requirements of EIGA Doc 33/18 and VDA Volume 19.

Product:	Hose set for condensate pumps
Model:	CP-Set O2
Item no.:	4492003502X-O2

The materials used for the “O2” hose set are Versilon® F-5500-A and PEEK, which have been tested by Bühler Technologies for their suitability for oxygen applications.

All components in contact with the medium undergo a special cleaning process to reliably remove impurities (such as oil, grease and particles). This process is documented by a comprehensive delivery specification to the service provider and compliance with the limits is verified with regular analyses by an independent, accredited laboratory.

The contamination limits of the surfaces in contact with media are defined as follows (as in EIGA Doc 33/18 Cleaning of Equipment for oxygen service):

	Contamination limits
Non-volatile organic or inorganic impurities:	$\leq 220 \text{ mg/m}^2$ for non-volatile impurities
Particles:	$\leq 22 \text{ particles/m}^2$ between 500 μm and 1000 μm

The component groups of the hose sets are cleaned by an external service provider and then manufactured into the end product at Bühler Technologies.

Compliance with the contamination limits is documented by the external service provider by means of factory test certificates (free of oil and grease) and a test report (free of dust and dirt). After cleaning, the hose sets are put together, then packed in airtight, dustproof packaging and clearly labeled “Cleaned for oxygen service”.

All described cleaning properties are lost if the product comes into contact with oily or greasy media or is otherwise contaminated from the outside.



Resistance table

Gas Analysis

Formula	Medium	Concentration	Teflon® PTFE	PCTFE	PEEK	PVDF	FEP	FFKM	Viton® FPM	V4A	Glass
CH ₃ COCH ₃	Acetone		1/1	1/3	1/1	3/4	(1)	1/1	4/4	1/1	1/1
C ₆ H ₆	Benzol		1/1	1/3	1/1	1/3	1/1	1/1	3/3	1/1	1/1
Cl ₂	Chlorine	10% wet	1/1	0/0	4/4	2/2	1/1	1/1	3/0	4/4	1/1
Cl ₂	Chlorine	97%	1/0	1/3	4/4	1/1	1/1	1/0	1/1	1/1	1/0
C ₂ H ₆	Ethane		1/0	0/0	1/0	2/0	-	1/0	1/0	2/0	1/0
C ₂ H ₅ OH	Ethanol	50%	1/1	1/3	1/1	1/1	1/1	1/1	2/2	1/0	1/1
C ₂ H ₄	Ethylene		1/0	0/0	0/0	1/0	1/1	1/0	1/0	1/0	1/0
C ₂ H ₂	Ethyne		1/0	0/0	0/0	1/0	1/1	1/0	2/0	1/0	1/0
C ₆ H ₅ C ₂ H ₅	Ethylbenzene		1/0	0/0	0/0	1/1	1/1	1/0	2/0	1/0	1/0
HF	Hydrofluoric acid		1/0	0/0	0/0	2/2	(1)	2/0	4/0	3/4	1/0
CO ₂	Carbon dioxide		1/1	0/0	1/0	1/1	(1)	1/0	1/1	1/1	1/1
CO	Carbon monoxide		1/0	0/0	1/1	1/1	-	1/0	1/0	1/1	1/0
CH ₄	Methane	technically pure	1/1	0/0	1/1	1/0	1/1	1/0	1/1	1/1	1/1
CH ₃ OH	Methanol		1/1	1/1	1/1	1/1	1/1	1/1	3/4	1/1	1/1
CH ₃ Cl ₂	Methylene chloride		1/0	2/0	1/0	1/0	1/1	1/0	3/0	1/1	1/0
H ₃ PO ₄	Phosphoric acid	1–5%	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
H ₃ PO ₄	Phosphoric acid	30%	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
C ₃ H ₈	Propane	gaseous	1/1	0/0	1/0	1/1	1/1	1/0	1/0	1/0	1/1
C ₃ H ₆ O	Propylene oxide		1/0	0/0	0/0	2/4	1/1	2/0	4/0	1/0	1/0
HNO ₃	Nitric acid	1–10%	1/1	1/0	1/1	1/1	1/1	1/0	1/1	1/1	1/1
HNO ₃	Nitric acid	50%	1/1	1/0	3/3	1/1	1/1	1/0	1/0	1/2	1/1
HCl	Hydrochloric acid	1–5%	1/1	1/1	1/0	1/1	1/1	1/1	1/1	2/4	1/1
HCl	Hydrochloric acid	35%	1/1	1/1	1/0	1/1	1/1	1/1	1/2	2/4	1/1
O ₂	Oxygen		1/1	0/0	1/0	1/1	1/1	1/1	1/2	1/1	1/1
SF ₆	Sulphur hexafluoride		1/0	0/0	1/0	0/0	0/0	1/0	2/0	0/0	1/0
H ₂ SO ₄	Sulfuric acid	1–6%	1/1	1/1	2/2	1/1	1/1	1/1	1/1	1/2	1/1
H ₂ S	Hydrogen sulphide		1/1	1/1	0/0	1/1	1/0	1/1	4/4	1/1	1/1
N ₂	Nitrogen		1/1	0/0	1/0	1/1	1/1	1/0	1/1	1/0	1/1
C ₆ H ₅ C ₂ H ₃	Styrene		1/1	0/0	1/0	1/0	1/0	1/0	3/0	1/0	1/1
C ₆ H ₅ CH ₃	Toluol (methylbenzene)		1/1	0/0	1/0	1/1	1/1	1/1	3/3	1/1	1/1
H ₂ O	Water		1/1	0/0	1/1	1/1	1/1	1/1	1/1	1/1	1/1
H ₂	Hydrogen		1/0	1/0	1/0	1/0	(1)	1/0	1/0	1/0	1/0

0 – no information available

1 – durability/suitability very good

2 – durability/suitability good

3 – limited suitability

4 – not suitable

() – estimate

Two values are specified per medium. Left number = value at 20 °C, right number = value at 50 °C.

Source: Bürkle GmbH: List of chemical resistances, <https://www.buerkle.de> [accessed on 12.02.2026].



RMA-Formular und Erklärung über Dekontaminierung

RMA-Form and explanation for decontamination



RMA-Nr./ RMA-No.

Die RMA-Nr. bekommen Sie von Ihrem Ansprechpartner im Vertrieb oder Service. Bei Rücksendung eines Altgeräts zur Entsorgung tragen Sie bitte in das Feld der RMA-Nr. "WEEE" ein./ You may obtain the RMA number from your sales or service representative. When returning an old appliance for disposal, please enter "WEEE" in the RMA number box.

Zu diesem Rücksendeschein gehört eine Dekontaminierungserklärung. Die gesetzlichen Vorschriften schreiben vor, dass Sie uns diese Dekontaminierungserklärung ausgefüllt und unterschrieben zurücksenden müssen. Bitte füllen Sie auch diese im Sinne der Gesundheit unserer Mitarbeiter vollständig aus./ This return form includes a decontamination statement. The law requires you to submit this completed and signed decontamination statement to us. Please complete the entire form, also in the interest of our employee health.

Firma/ Company

Firma/ Company

Straße/ Street

PLZ, Ort/ Zip, City

Land/ Country

Gerät/ Device

Anzahl/ Quantity

Auftragsnr./ Order No.

Ansprechpartner/ Person in charge

Name/ Name

Abt./ Dept.

Tel./ Phone

E-Mail

Serien-Nr./ Serial No.

Artikel-Nr./ Item No.

Grund der Rücksendung/ Reason for return

- ☐ Kalibrierung/ Calibration ☐ Modifikation/ Modification
☐ Reklamation/ Claim ☐ Reparatur/ Repair
☐ Elektroaltgerät/ Waste Electrical & Electronic Equipment (WEEE)
☐ andere/ other

bitte spezifizieren/ please specify

Handelt es sich bei dem Gerät um ein sogenanntes Bühler O2-Ready Produkt (Artikelnummer endet mit „-O2“)?/ Is the device a Bühler O2-Ready product (item number ending with "-O2")?

- ☐ Nein/ No ☐ Ja/ Yes

Ist das Gerät möglicherweise kontaminiert?/ Could the equipment be contaminated?

- ☐ Nein, da das Gerät nicht mit gesundheitsgefährdenden Stoffen betrieben wurde./ No, because the device was not operated with hazardous substances.
☐ Nein, da das Gerät ordnungsgemäß gereinigt und dekontaminiert wurde./ No, because the device has been properly cleaned and decontaminated.

☐ Ja, kontaminiert mit:/ Yes, contaminated with:



☐
explosiv/
explosive



☐
entzündlich/
flammable



☐
brandfördernd/
oxidizing



☐
komprimierte
Gase/
compressed
gases



☐
ätzend/
caustic



☐
giftig, Lebensge-
fahr/
poisonous, risk of
death



☐
gesundheitsge-
fährdend/
harmful to health



☐
gesund-
heitsschädlich/
health hazard



☐
umweltge-
fährdend/
environmental
hazard

Bitte Sicherheitsdatenblatt beilegen!/ Please enclose safety data sheet!

Das Gerät wurde gespült mit:/ The equipment was purged with:

Diese Erklärung wurde korrekt und vollständig ausgefüllt und von einer dazu befugten Person unterschrieben. Der Versand der (dekontaminierten) Geräte und Komponenten erfolgt gemäß den gesetzlichen Bestimmungen.

Falls die Ware nicht gereinigt, also kontaminiert bei uns eintrifft, muss die Firma Bühler sich vorbehalten, diese durch einen externen Dienstleister reinigen zu lassen und Ihnen dies in Rechnung zu stellen.

Firmenstempel/ Company Sign

This declaration has been filled out correctly and completely, and signed by an authorized person. The dispatch of the (decontaminated) devices and components takes place according to the legal regulations.

Should the goods not arrive clean, but contaminated, Bühler reserves the right, to commission an external service provider to clean the goods and invoice it to your account.

Datum/ Date

rechtsverbindliche Unterschrift/ Legally binding signature



Vermeiden von Veränderung und Beschädigung der einzusendenden Baugruppe

Die Analyse defekter Baugruppen ist ein wesentlicher Bestandteil der Qualitätssicherung der Firma Bühler Technologies GmbH. Um eine aussagekräftige Analyse zu gewährleisten muss die Ware möglichst unverändert untersucht werden. Es dürfen keine Veränderungen oder weitere Beschädigungen auftreten, die Ursachen verdecken oder eine Analyse unmöglich machen.

Vermeidung von Kontaminationen bei Produkten für hochreine Sauerstoffapplikationen (O2-Ready)

Handelt es sich bei dem Gerät um ein sogenanntes Bühler O2-Ready Produkt (Artikelnummer endet mit „-O2“), so ist dafür zu sorgen, dass es vom Ausbau des Artikels bis zur Anlieferung bei Firma Bühler zu keiner Kontamination medienberührender Teile kommt. Verschießen Sie Öffnungen und verpacken Sie das Gerät in ein luftdichtes Behältnis. Kennzeichnen Sie die Ware deutlich, insbesondere durch Angabe der vollständigen Artikelnummer (.....-O2) auf der ersten Seite dieses Formulars. Hierdurch wird sichergestellt, dass es auch unsererseits zu keiner unnötigen Kontamination kommt.

Umgang mit elektrostatisch sensiblen Baugruppen

Bei elektronischen Baugruppen kann es sich um elektrostatisch sensible Baugruppen handeln. Es ist darauf zu achten, diese Baugruppen ESD-gerecht zu behandeln. Nach Möglichkeit sollten die Baugruppen an einem ESD-gerechten Arbeitsplatz getauscht werden. Ist dies nicht möglich sollten ESD-gerechte Maßnahmen beim Austausch getroffen werden. Der Transport darf nur in ESD-gerechten Behältnissen durchgeführt werden. Die Verpackung der Baugruppen muss ESD-konform sein. Verwenden Sie nach Möglichkeit die Verpackung des Ersatzteils oder wählen Sie selber eine ESD-gerechte Verpackung.

Einbau von Ersatzteilen

Beachten Sie beim Einbau des Ersatzteils die gleichen Vorgaben wie oben beschrieben. Achten Sie auf die ordnungsgemäße Montage des Bauteils und aller Komponenten. Versetzen Sie vor der Inbetriebnahme die Verkabelung wieder in den ursprünglichen Zustand. Fragen Sie im Zweifel beim Hersteller nach weiteren Informationen.

Einsenden von Elektroaltgeräten zur Entsorgung

Wollen Sie ein von Bühler Technologies GmbH stammendes Elektroprodukt zur fachgerechten Entsorgung einsenden, dann tragen Sie bitte in das Feld der RMA-Nr. „WEEE“ ein. Legen Sie dem Altgerät die vollständig ausgefüllte Dekontaminierungserklärung für den Transport von außen sichtbar bei. Weitere Informationen zur Entsorgung von Elektroaltgeräten finden Sie auf der Webseite unseres Unternehmens.

Avoiding alterations and damage to the components to be returned

Analysing defective assemblies is an essential part of quality assurance at Bühler Technologies GmbH. To ensure conclusive analysis the goods must be inspected unaltered, if possible. Modifications or other damages which may hide the cause or render it impossible to analyse are prohibited.

Avoidance of contamination in products for high-purity oxygen applications (O2-Ready)

If the device is a Bühler O2-Ready product (item number ending with “-O2”), it must be ensured that there is no contamination of parts in contact with the medium from the time the item is removed until it is delivered to Bühler. Seal openings and pack the device in an airtight container. Mark the goods clearly, in particular by stating the full item number (.....-O2) on the first page of this form. This ensures that there is no unnecessary contamination on our part either.

Handling electrostatically conductive components

Electronic assemblies may be sensitive to static electricity. Be sure to handle these assemblies in an ESD-safe manner. Where possible, the assemblies should be replaced in an ESD-safe location. If unable to do so, take ESD-safe precautions when replacing these. Must be transported in ESD-safe containers. The packaging of the assemblies must be ESD-safe. If possible, use the packaging of the spare part or use ESD-safe packaging.

Fitting of spare parts

Observe the above specifications when installing the spare part. Ensure the part and all components are properly installed. Return the cables to the original state before putting into service. When in doubt, contact the manufacturer for additional information.

Returning old electrical appliances for disposal

If you wish to return an electrical product from Bühler Technologies GmbH for proper disposal, please enter "WEEE" in the RMA number box. Please attach the fully completed decontamination declaration form for transport to the old appliance so that it is visible from the outside. You can find more information on the disposal of old electrical appliances on our company's website.

