

OPERATION & MAINTENANCE MANUAL

eco-PEN XS 180



1	Introduction	4
1.1	Scope of delivery	4
1.2	Incoming inspection	5
2	Safety	6
2.1	Explanation of symbols used	6
2.2	Intended Use.....	7
2.3	Personnel.....	8
2.3.1	Operators.....	8
2.3.2	Maintenance staff	8
2.4	Informal safety precautions.....	8
2.5	Preventing damage to equipment.....	9
2.6	Organisational safety measures	9
2.7	Residual risks.....	10
2.8	Transport and storage.....	11
3	Product description	12
4	Operation	13
4.1	Initial commissioning.....	13
4.1.1	Fitting the stator	13
4.1.2	Connecting the dosing unit to the drive unit.....	14
4.1.3	Changing the cartridge holder	15
4.1.4	Fitting the cartridge	16
4.1.5	Feeding material and bleeding the dispenser for the first time ..	17
4.1.6	Calibration.....	18
4.2	Switching on, starting dosing process.....	19
4.3	Switching off, ending dosing process.....	19
4.4	Changing cartridges	20
4.5	Decommissioning.....	21
4.6	Re-commissioning	21

5 Maintenance 22

5.1 Maintenance intervals 22

5.2 Troubleshooting 23

5.3 Changing the stator 24

5.3.1 Disconnecting the dosing unit and drive unit 24

5.3.2 Remove the stator 25

5.4 Dismantling before cleaning 27

6 Cleaning 28

7 Spare parts 29

7.1 Item list of the spare parts 29

7.2 Overview drawing of the spare parts 30

8 Technical specifications 31

8.1 Installation declaration 31

8.2 Technical data 32

8.3 Materials used 33

8.4 Dimensions 33

9 Accessories 34

10 Disposal 35

10.1 General principles 35

10.2 Return and recycling programme for waste equipment in the European Union 35

1 Introduction

Dear customer,

We are delighted that you have decided to purchase a ViscoTec product. We have no doubt that this product will meet all your requirements. We wish you trouble-free and successful operation.

The dosing system consists of the eco-PEN XS 180 dispenser and the eco-CONTROL EC200 2.0 dosing control unit or the plug'n'dose 2.0 dosing control unit.

The eco-PEN XS 180 dispenser is described in this operation manual. A separate operation and maintenance manual is enclosed with the dosing control unit.

1.1 Scope of delivery

The scope of supply includes:

- 1 dosing unit (A)
- 1 stator (B)
- 1 end piece (C)
- 1 drive unit (D) with cartridge holder 10 cc
- 1 connecting cable (2 m)
- 1 assembly aid (E)
- 1 cartridge holder 30 cc (F)
- 1 screwdriver (G)
- 1 Allen wrench (H)
- 1 disassembly tool for stator (I)
- 1 open-ended wrench (J)
- 1 operation and maintenance manual

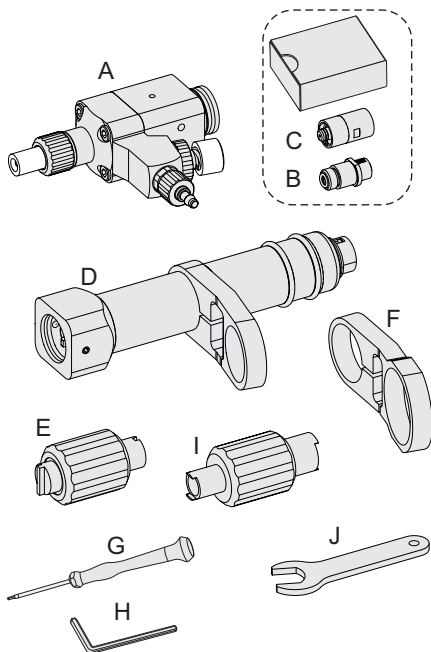


Fig. 1

1.2 Incoming inspection

Damage in transit can lead to malfunctions, and consequently to personal injury and damage to property. Damaged components must not be put into operation.


Check the delivery immediately on receipt for damage in transit and damage to the packaging. Check that the delivery is complete according to the enclosed delivery note. Make sure you have not left any part of the delivery in the packaging.

Compensation for damage during transport may be claimed only if the carrier is notified immediately.

2 Safety

2.1 Explanation of symbols used

The following symbols are used in this manual:

	Work step
•	List
Fig. 1	Legend number, reference to a figure
*	Reference to a comment
COMMAND	Designations of buttons/switches, menu items and input dialogs

The following notices indicate safety instructions and must be followed:



indicates a hazardous situation which, if not avoided, will result in death or serious injury.



indicates a hazardous situation which, if not avoided, may result in death or serious injury.



indicates a hazardous situation which, if not avoided, may result in minor injury.

NOTE

indicates a technical tip to avoid damage to property or equipment.

This manual is structured so that text and the related figure are on the same page as far as possible. In this way the information can be understood quickly. If reference is made to a component in a figure, the part has a key number.

2.2 Intended Use

The eco-PEN XS 180 dispenser is used to feed and precisely dose viscous materials. The dispenser is controlled using the eco-CONTROL EC200 2.0 dosing control unit or the plug'n'dose 2.0 dosing control unit.

Check the chemical resistance of the materials that are in contact with the material before commissioning. Information on the materials can be found in the order confirmation or in Section 8.3 "Materials used" (Page 33).

No liability can be accepted for damage caused by failure to observe this operation manual or due to a lack of maintenance or checks.

Misuse

Any use other than the stipulated intended use shall be considered as misuse.

This includes

- Use outside the permissible operating limits
- Use in explosive environments
- Use underground
- Use outdoors

Misuse also includes the following actions carried out without the explicit written approval of the manufacturer:

- Conversions and/or extensions
- Use of non-original spare parts (e.g. rotor, stator, seal)
- Repairs carried out by unauthorised companies or persons
- Use of non-approved materials

Misuse is not permissible, and will result in voiding of guarantee, warranty and liability claims.

2.3 Personnel

The operating organisation shall ensure that only appropriately qualified and authorised personnel work on this machine. It is responsible for ensuring that operators and maintenance staff possess the necessary qualifications. Personnel must be at least 15 years old.

All personnel working with or on the machine must have read and understood this operation manual.

The operating company shall document the operators' and maintenance staff's acknowledgement of this manual, and shall ensure their compliance with it by means of regular training.

2.3.1 Operators

Before starting work, the personnel assigned as operators must be adequately instructed regarding the nature and scope of their duties and the potential risks. Training is to be conducted on a regular basis (at least once a year). Training is to be conducted after any technical modifications.

2.3.2 Maintenance staff

The maintenance and repair staff must be authorised and

- adequately trained for the relevant activities
- familiar with and comply with the applicable technical rules and safety regulations

Competent personnel are persons who, by virtue of their training, experience and knowledge of the relevant requirements, standards and safety regulations, can carry out the necessary activities while recognising and avoiding potential hazards.

2.4 Informal safety precautions

The following documents must be read, understood and followed. They must always be available at the machine's operating location, and must be kept in legible condition:

- The operation manual for this product
- Generally applicable and local accident prevention and environmental protection regulations
- Safety data sheets for the conveyed materials, as well as for any cleaning products or lubricants being used

2.5 Preventing damage to equipment

In order to prevent damage to equipment and to ensure precision dosing, ensure that

- the dispenser must never be operated without material (the stator will be destroyed)
- the material inlet (feed) and the material outlet must never be closed during operation
- the material outlet (e.g. dosing needle or mixer) must not be damaged or blocked
- the dispenser is operated with a positive feed (inlet pressure)
- there is adequate inlet pressure when conveying highly viscous material
- when pumping without a positive feed (inlet pressure), no dry running or cavitation of the dispenser occurs
- the direction of rotation of the drive is always the same as the direction of flow of the dispenser
- the specifications in the product data sheet for the material are observed and adhered to

2.6 Organisational safety measures

The necessary personal protective equipment must be provided by the operating organisation. Personal protective equipment must be worn when carrying out all work and procedures.

To ensure the provision of suitable personal protective equipment, the safety data sheet for the conveyed material must be observed. Specifications for e.g. cleaning products and lubricants must also be checked and observed.

All personal protective equipment must be checked to ensure it is working properly before starting work.



Eye protection



Hand protection



Body protection



Foot protection

2.7 Residual risks

Thorough training, observance of the operation manual and compliance with safety regulations are key to permanently accident-free operation.

The following residual risks may occur when operating this machine:

WARNING

Material hazardous to health

The conveyed material may contain constituents which are hazardous to health. Such constituents may cause serious acute or chronic harm to health if they come into contact with skin, are inhaled or swallowed.

- Always wear appropriate protective equipment
- Observe the specifications in the safety data sheet for the material

WARNING

Risk of injury from moving components

The machine is driven by an electrical drive unit. These generate very high forces. Touching the components during operation may result in serious injuries.

- Do not operate the machine unless there is unrestricted visual contact with the moving component
- There must be no persons or foreign objects in the danger area

WARNING

Pressurised material

Depending on the setting of the machine, the material is conveyed under very high pressure. If the feeding rate is not adapted to the dosing needle being used, unwanted spraying of the material might occur. This may result in serious injury. Defective components can also cause spraying.

- Shut down the machine immediately
- The leak must be repaired by qualified maintenance staff before operation is re-started

 **CAUTION****Splashing material**

During initial commissioning and after being refilled, air bubbles in the material could cause an uncontrollable spraying from the conveying area. This may result in injury.

- Always wear appropriate protective equipment
- Fully bleed the system before start of production

 **CAUTION****Pointed dosing needle**

Depending on its size, the dosing needle can be very thin and pointed. Carelessness during assembly work can lead to needle stick injuries.

- Carry out assembly work with appropriate care.

2.8 Transport and storage

The following ambient conditions must be observed for transportation and storage:

- Temperature within the range -10 °C to +40 °C (263 K to 313 K)
- Relative air humidity less than 60 % (non-condensing)
- Uniform room climate
- Dry and free of dust
- No exposure to direct sunlight
- No exposure to direct sunlight (UV light)
- No aggressive, corrosive substances
(solvents, oxidizing agents, acids, alkalis, salts, etc.) in the environment

For storage always remove the stator and store separately (at 15–20° C).

3 Product description

The dispenser has been developed and tested for precision dosing of materials ranging from low to high viscosity with extremely high repeat accuracy.

preeflow dispensers are positive displacement pumps. The conveying elements comprise a rotating part, the “rotor”, and a stationary part, the “stator”. The rotor, which is in the form of a type of knuckle thread, rotates inside the stator, which has one more thread turn and twice the pitch length of the rotor. As a result, conveying areas are produced between the stator and the rotor rotating inside the stator. The rotor also moves radially within the stator. The conveying spaces move forward continuously due to the movement. The flexible shaft used to drive the rotor compensates for the eccentric movement of the rotor and is completely maintenance-free.

The sealing effect of the conveying elements of the dispenser is dependent on the viscosity and pressure.

Since the direction of flow is reversible, the material can be sucked back to allow a clean thread breakage.

The dispenser can be dismantled very quickly.

Together with the eco-CONTROL EC200 2.0 dosing control unit or the plug´n´dose 2.0 dosing control unit, the dispenser forms a dosing system that is typically installed in a dosing station. The dosing control unit controls the required parameters (e.g. dosing quantity, dosing speed, etc.).

4 Operation

4.1 Initial commissioning

All activities described below may only be carried out by qualified staff.

Preparation

- ▶ Undo the cap nut (2).
- ▶ Detach the protective cap (8a) from the rotor (4).
- ▶ Detach the cap (8b) from the cartridge adapter (25a).

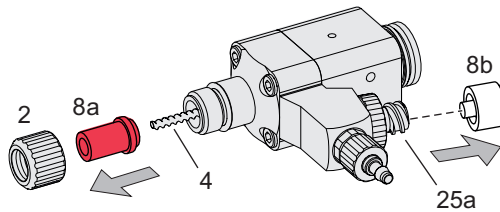


Fig. 2

4.1.1 Fitting the stator

- ▶ Coat the rotor (4) with material or a suitable lubricant.
- ▶ Attach the stator (7) to the rotor (4) and turn it slightly in the direction of the pump housing (19).
- ▶ Fit the cap nut (2) and end piece (3) on slightly (hand-tight).

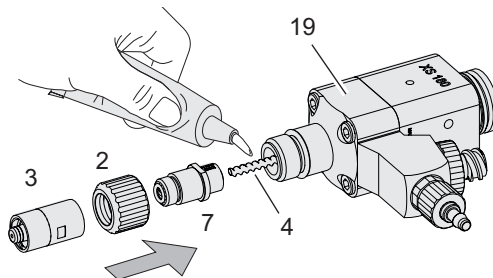


Fig. 3

NOTE

Only screw on all the components slightly (hand-tight); do not use any tools.

4.1.2 Connecting the dosing unit to the drive unit

- ▶ Check that the coupling (5) is fitted to the drive unit (11).
- ▶ Fully connect the dosing unit (20) to the drive unit (11).
- ▶ Slightly rotate the dosing unit (20) on the drive unit (11) until the movable pin (9) engages. Drive unit (11) is centered in the correct position.
- ▶ Screw in the set screw (14).

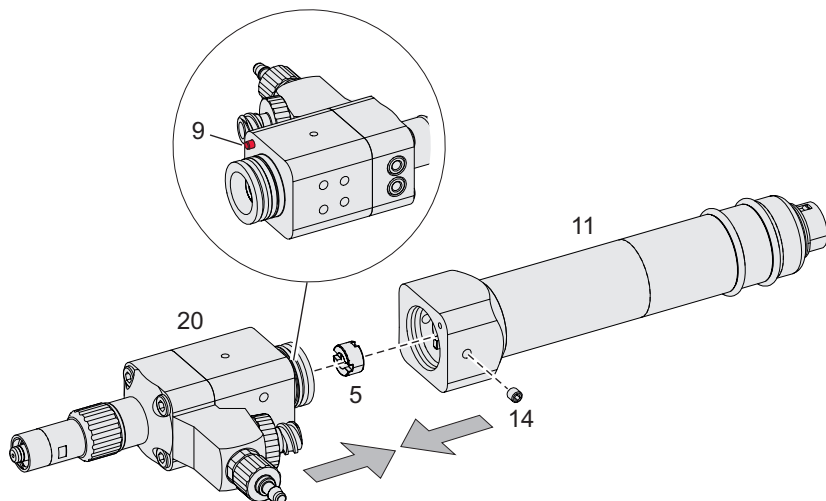


Fig. 4

4.1.3 Changing the cartridge holder

- ▶ Detach the rings (10).
- ▶ Loosen the screw of the 10 cc cartridge holder (32).
- ▶ Remove the 10 cc cartridge holder (32).
- ▶ Slide the 30 cc cartridge holder (33) on up to the notch.
- ▶ Align the 30 cc cartridge holder (33).
- ▶ Fit the screw of the 30 cc cartridge holder (33) hand-tight.
- ▶ Reattach the rings (10).

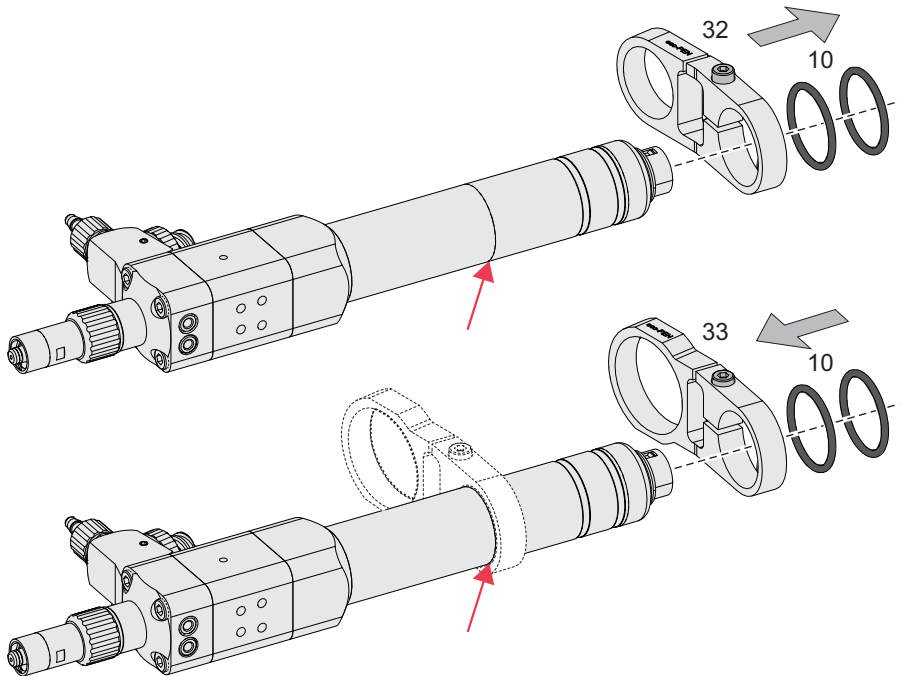


Fig. 5

4.1.4 Fitting the cartridge

- ▶ Slide the cartridge into the cartridge adapter (32/33) and twist it onto the cartridge adapter (25a).
- ▶ Align the cartridge with the cartridge adapter (25a).
- ▶ Fit the adapter head.

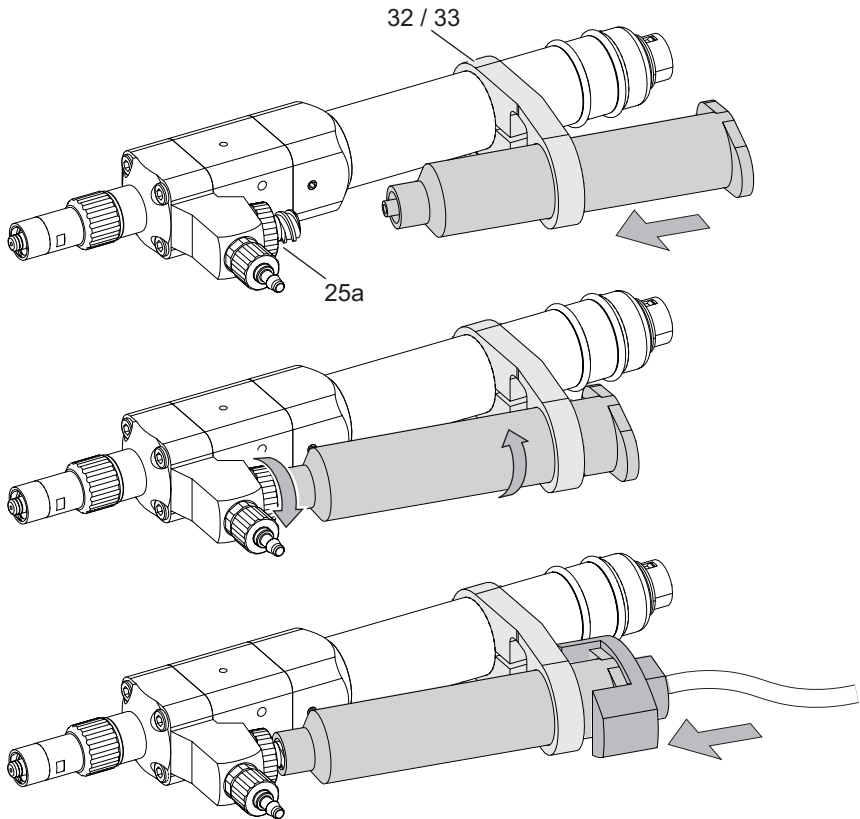


Fig. 6

4.1.5 Feeding material and bleeding the dispenser for the first time

The dispenser can be bled in one of two ways after the material has been supplied.

Version A

(e.g. closed cartridge, material tube)

- ▶ Fit the cartridge (see Section 4.1.4 (page 16)) or connect the material tube to the tube adapter (25b).
- ▶ Pressurise the material.
- ▶ Move the dispenser to a position in which the end piece (3) points upwards.
- ▶ Connect the drive unit to the power supply and run slowly until the material escapes from the outlet nozzle (attached Luer-Lock needle) without bubbles.

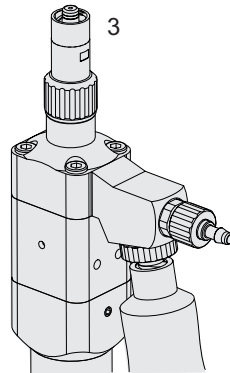


Fig. 7

Tip: Connecting a hose can protect the dispenser from being wetted with the material.

Version B

(e.g. open cartridge with self-leveling material)

- ▶ Fit the cartridge.
- ▶ Fill the cartridge with material.
- ▶ Move the dispenser into a position in which the bleed valve (23a) points upward.
- ▶ Attach the transparent tube (with an inner diameter of 3 mm) to the bleed valve with tube adapter (23a). Ensure that the tube used is sufficiently long (approx. 10 cm) and is capable of holding all the material required for the bleeding process. You can then dispose of this conveniently at the end of the process.
- ▶ Slowly open the bleed valve (23a) and wait until the material comes out with no bubbles.
- ▶ Close the bleed valve (23a) and detach the tube.
- ▶ Via the dosing control unit (manual operation), allow the drive unit to run slowly until the material comes out of the outlet nozzle (fitted dosing needle) with no bubbles (provide beaker for escaping material).

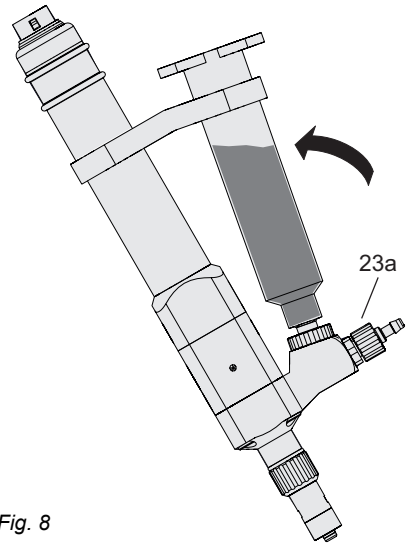


Fig. 8

4.1.6 Calibration

To obtain a precise dosing result, the dosing quantity must be calibrated. This is done using the eco-CONTROL EC200 2.0 dosing control unit or the plug'n'dose 2.0 dosing control unit. The exact procedure can be found in the dosing control unit manual.

4.2 Switching on, starting dosing process

Daily at the start of the shift/when starting work, perform the activities as described in Section 5.1 "Maintenance intervals" (Page 22).

NOTE

The supply of material to the dispenser must be ensured before dosing starts.
Dry running may destroy the stator.

- ▶ Start the supply of material to the dispenser (pressurize the material).
- ▶ If present, remove cover.
- ▶ Switch on the dosing control unit.
- ▶ Check the dosing quantity to ensure that the dosing result is consistent. If there are deviations, dosing must be recalibrated. The exact procedure can be found in the dosing control unit manual. The result of the check must be recorded together with the name of the tester, date and time.
- ▶ Start dosing process via the dosing control unit.

4.3 Switching off, ending dosing process

- ▶ The dosing process is switched off via the dosing control unit. The exact procedure can be found in the dosing control unit manual.
- ▶ Switch off the supply of material to the dispenser (depressurize the material).
- ▶ Clean the end piece / dosing needle.
- ▶ Seal outlet opening (e.g. with cover).

4.4 Changing cartridges

- ▶ Switch off the supply of material to the dispenser (depressurize the material).
- ▶ Slowly open the bleed valve (23a), release the inlet pressure and close it again.
- ▶ Remove the adapter head.
- ▶ Unscrew and remove the cartridge.
- ▶ Fit a new cartridge (see Section 4.1.4 (page 16)).

- ▶ Pressurise the material.
- ▶ Attach the transparent tube (with an inner diameter of 3 mm) to the bleed valve with tube adapter (23a). Ensure that the tube used is sufficiently long (approx. 10 cm) and is capable of holding all the material required for the bleeding process. You can then dispose of this conveniently at the end of the process.
- ▶ Slowly open the bleed valve (23a) and wait until the material comes out with no bubbles.
- ▶ Close the bleed valve (23a) and detach the tube.

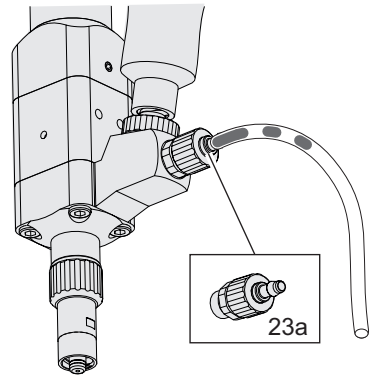


Fig. 9

- ▶ A bleed valve with a syringe adapter (23b) is available as an option. Using this bleed valve (23b), the air can be extracted from the pump chamber with a suitable syringe.

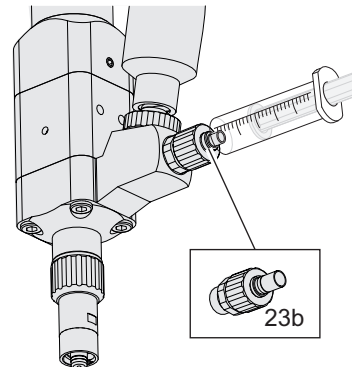


Fig. 10

4.5 Decommissioning

All activities described below may only be carried out by authorised maintenance staff.

- ▶ Switch off the drive to the dispenser and lock it to prevent it from being switched on again.
- ▶ Shut down material supply to the dispenser (depressurise).
- ▶ Relieve inlet pressure via bleed valve.
- ▶ Remove material supply and seal openings with suitable plug.
- ▶ Disconnect the power supply to the drive units.
- ▶ Remove the dosing unit and the drive unit from the holder or system.
- ▶ Disconnect the dosing unit and drive unit.
- ▶ Remove the stator, clean and store separately.
- ▶ Disassemble and clean dispenser.
- ▶ Store dispenser according to the storage conditions as described in Section 2.8 "Transport and storage" (Page 11).

4.6 Re-commissioning

Re-commissioning is the same as initial commissioning. The same specifications and work steps apply as described in Section 4.1 "Initial commissioning" (Page 13). It must be ensured that the dispenser is free of material residues, dust and dirt.

The stator must be installed before recommissioning (see Section 4.1.1 (page 13)).

5 Maintenance

In the event of a fault, or if there is any doubt that the machine/system is not completely ready for operation, it must be shut down immediately and inspected by competent maintenance staff before operation continues.

 **WARNING**

Maintenance and cleaning work may only be carried out when the machine has been shut down safely and secured against unauthorised restarting. Otherwise, serious injuries may result.

- Switch off the dosing control unit.
- Disconnect the dosing control unit's power cable from the power supply

5.1 Maintenance intervals

In order to ensure problem-free operation, we recommend complying with the following maintenance intervals.

When	Activity	Who
Start of shift/daily	<ul style="list-style-type: none">• Visual check for leaks / contamination / damage.	1
End of shift	<ul style="list-style-type: none">• Clean the end piece / dosing needle.	1
Every year	<ul style="list-style-type: none">• Disassemble the dispenser and clean all parts that come into contact with the medium. Check components such as e.g. the stator, rotor assembly and housing for signs of wear and replace if necessary.	2

1 = Operating staff, 2 = Maintenance staff

Depending on the medium and the use of the dispenser (e.g. Three-shift operation), a shorter cleaning interval may be necessary. This must be specified by the machine operator.

The recommended change cycles are based on empirical values for dosing applications. The empirical values are based on different material properties, pressure conditions and dosing settings. Depending on the material used, the required change cycles may differ from the recommended cycles.

Ambient conditions, such as temperature and humidity, may affect the change cycles.

5.2 Troubleshooting

Fault	Possible cause	Action
No or too little material feeding	Motor not connected	Connect the motor
	Fault with mains supply	Check electrical installation
	Material hardened/set	Dismantle and clean the dispenser
	Dosing needle blocked	Clean/replace dosing needle
	Dosing needle too small or too long	Use a different needle cross-section. Reduce the speed/flow rate volume.
	Stator/rotor worn	Replace stator/rotor
	Stator swollen	Check resistance of the stator to the material and replace stator
	Speed too low	Correct speed
	Inadequate supply of material	Feed material, check inlet pressure and correct if required
Dripping or running on of material	Suck-back not set correctly	Adjust the suck-back
	Air bubbles in the material	Bleed dispenser / material pipes
	Material compressible	Degas the material

If you have any questions about commissioning, maintenance, repairs or ways to optimise your processes, our service employees will be happy to help.

You can reach us at: support@preeflow.com

We will respond to your service enquiry in German or English.

5.3 Changing the stator

All activities described below may only be carried out by authorised maintenance staff.

Preparation

- ▶ Disconnect the dosing control unit from the power supply.
- ▶ Unplug the power supply to the drive unit.
- ▶ Shut down material supply (depressurise).
- ▶ Relieve inlet pressure via bleed valve.
- ▶ Remove the supply of material and seal the openings with a suitable plug.

5.3.1 Disconnecting the dosing unit and drive unit

- ▶ Unscrew the set screw (14) at least halfway.
- ▶ Disconnect the dosing unit (20) and drive unit (11).
- ▶ Fit the coupling (5) to the drive unit (11).

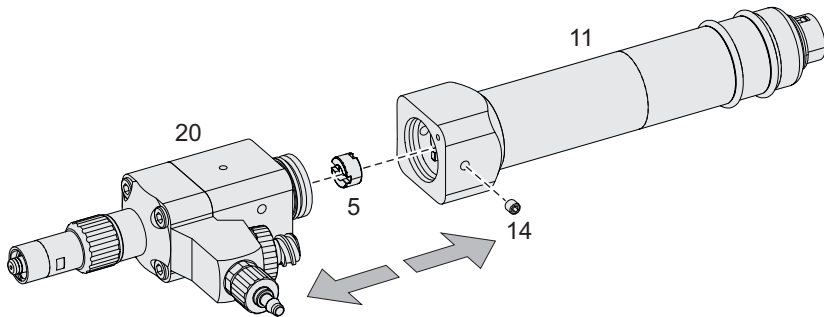


Fig. 11

5.3.2 Remove the stator

There are two options for removing the stator.

Variant 1 is the easiest option.

Variant 2 is used if the stator is stuck to the end piece. This option also allows the stator to be quickly removed for intermediate cleaning.

Variant 1:

- ▶ Twist off the end piece (3).
- ▶ Undo the cap nut (2).
- ▶ Unscrew the stator (7).

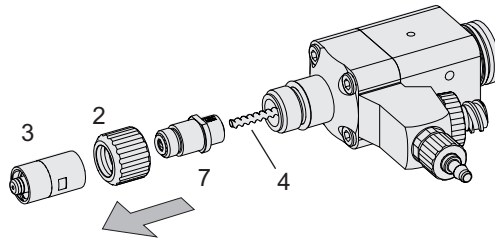


Fig. 12

NOTE

Make sure to unscrew the stator (7), rather than pulling it off. The rotor and stator may otherwise be damaged.

Variant 2:

- ▶ Screw on the cap nut (2).
In doing so, all components (end piece (3), cap nut (2) and stator (7)) remain together. Intermediate cleaning can now be carried out.
- ▶ If the end piece (3), cap nut (2) and stator (7) are stuck to one another, these can be separated using the disassembly tool for the stator (36) and the open-ended wrench (37).

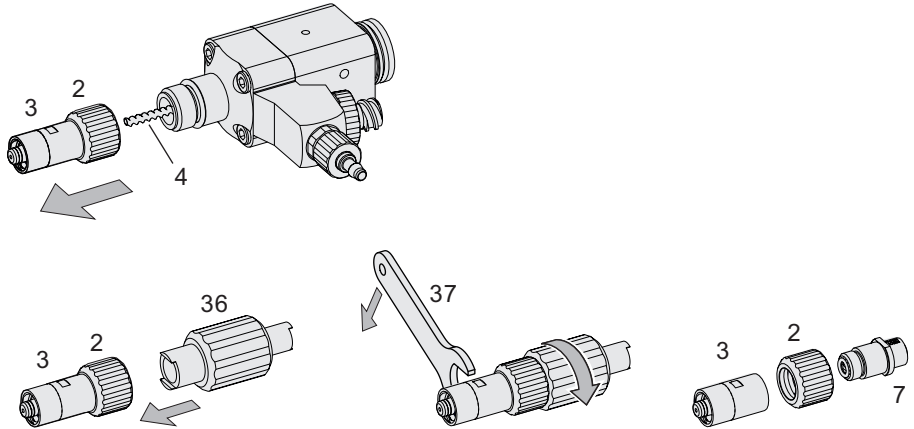


Fig. 13

NOTE

Only use the disassembly tool for the stator (36) and the open-ended wrench (37) for the disassembly.

The use of any other tool (e.g. pliers) may damage the surface.

Install the stator

Install the stator as described in Section 4.1.1 (page 13).

NOTE

Only screw on all the components slightly (hand-tight); do not use any tools.

5.4 Dismantling before cleaning

When cleaning the dispenser, attention must be paid to the chemical properties and chemical reactions of the material. In doing so, observe and comply with the corresponding specifications of the product data sheet. If you have any queries, contact the manufacturer of the material.

All activities described below may only be carried out by authorised maintenance staff.

Preparation

- Remove the stator as described in Section 5.3.2 (page 25)

Remove pump housing

- ▶ Unscrew the bleed valve (23a) with the open-ended wrench (37).
- ▶ Detach the o-ring (21).
- ▶ Remove the 4 screws (18).
- ▶ Pull off the pump housing (19).
- ▶ Remove the centering disk (12) with two O-rings.

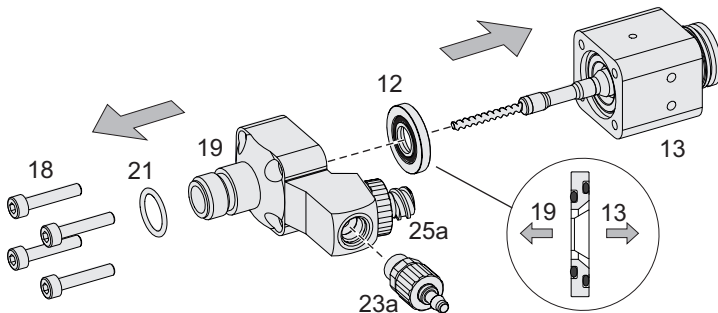


Fig. 14

NOTE

- Do not purge the bearing housing (13). This can damage the bearings! Clean it only with a cloth and brush. Holes can be cleaned with a pipe cleaner or interdental brush. Do not remove the bearing housing (13).
- Do not remove the cartridge adapter (25a).

Assembly

After cleaning, the dispenser is assembled in reverse order. Do not exceed a tightening torque of 0.35 Nm when mounting the screws (18).

6 Cleaning

WARNING

Cleaning work may only be carried out when the machine has been shut down safely and secured against unauthorised restarting. Otherwise, serious injuries may result.

- Switch off the dosing control unit.
- Disconnect the dosing control unit's power cable from the power supply

If the dispenser is soiled with material or if the dispenser is disassembled and cleaned, use a cleaning agent which matches the material. The information in the safety data sheet must be complied with.

Recommended cleaning agents, e.g. cellulose thinner, cleaner's solvent or alcohol.

Note the following points regarding the use of cleaning agents and the performance of cleaning work:

- Observe the specifications in the safety data sheet for the cleaning agent
- Personal protective equipment must be worn
- Compatibility with the materials installed in the pump must be checked before use
- The cleaning agent must be used according to the manufacturer's specifications (e. g. application time)
- Cleaning agents must not penetrate electrical or mechanical system components
- Do not use high-pressure cleaners for cleaning
- Completely remove cleaning agent
- Dispose cleaning agent properly
- Re-attach any protective and safety devices or cladding removed and check that they function correctly
- Use a metal-free tool (do not use steel wool or a screwdriver)

7 Spare parts

Every time you order spare parts, please state the type identifier, serial number and order number.

The type identifier and serial number are engraved on the dispenser.

7.1 Item list of the spare parts

Item	Description	X	pcs	Art.no.	Material
	eco-PEN XS 180 dosing unit, cpl.			176771	
2	eco-PEN XS 180 cap nut		1	175148	Aluminium
3	eco-PEN XS 180 end piece with Luer-Lock, cpl.	X	1	176766	
5	Coupling	X	1	175911	POM
6	Assembly aid		1	175775	POM
7	Stator	X	1	176312	vidur-C1
11	eco-PEN XS 180 drive unit, cpl.	X	1	176871	
12a	Centering disk	X	1	175118	1.4404
12b	O-ring R9 x 1.2	X	1	175218	FFKM
12c	O-ring R11 x 1.2	X	1	175217	FFKM
13	Bearing housing with rotor assembly cpl.		1	on request	
14	Set screw M3x4		1	21642	A2
18	Allen screw M3 x 16		4	20089	A2
19	Pump housing eco-PEN XS 180		1	176731	POM
21	O-ring 9 x 1.2	X	1	175218	FKM
23a	Bleed valve with tube adapter cpl. (Standard)		1	176765	1.4404 / FKM/ FFKM
23b	Bleed valve with syringe adapter cpl. (optional)		1	176769	1.4404 / FKM/ FFKM
23c	Screw plug (incl. O-ring R6 x 1) (optional)		1	176770	1.4404/FKM
24	Set screw M2.5 x 4		1	176376	ST
25	Cartridge adapter (incl. 2 O-rings) (standard)		1	176764	1.4404 / FKM/ FFKM
30	O-ring R14 x 1,2		1	176306	NBR
31	eco-PEN connection cable, cpl. (2 m)		1	176564	
32	Cartridge holder 10 cc		1	176878	Aluminium
33	Cartridge holder 30 cc		1	176874	Aluminium
36	Disassembly tool for stator		1	176592	1.4404
37	Open-ended wrench 9 mm		1	176857	A2

X = Recommended spare parts and wearing parts

To avoid costly downtime, we recommend keeping a stock of spare and wearing parts.

7.2 Overview drawing of the spare parts

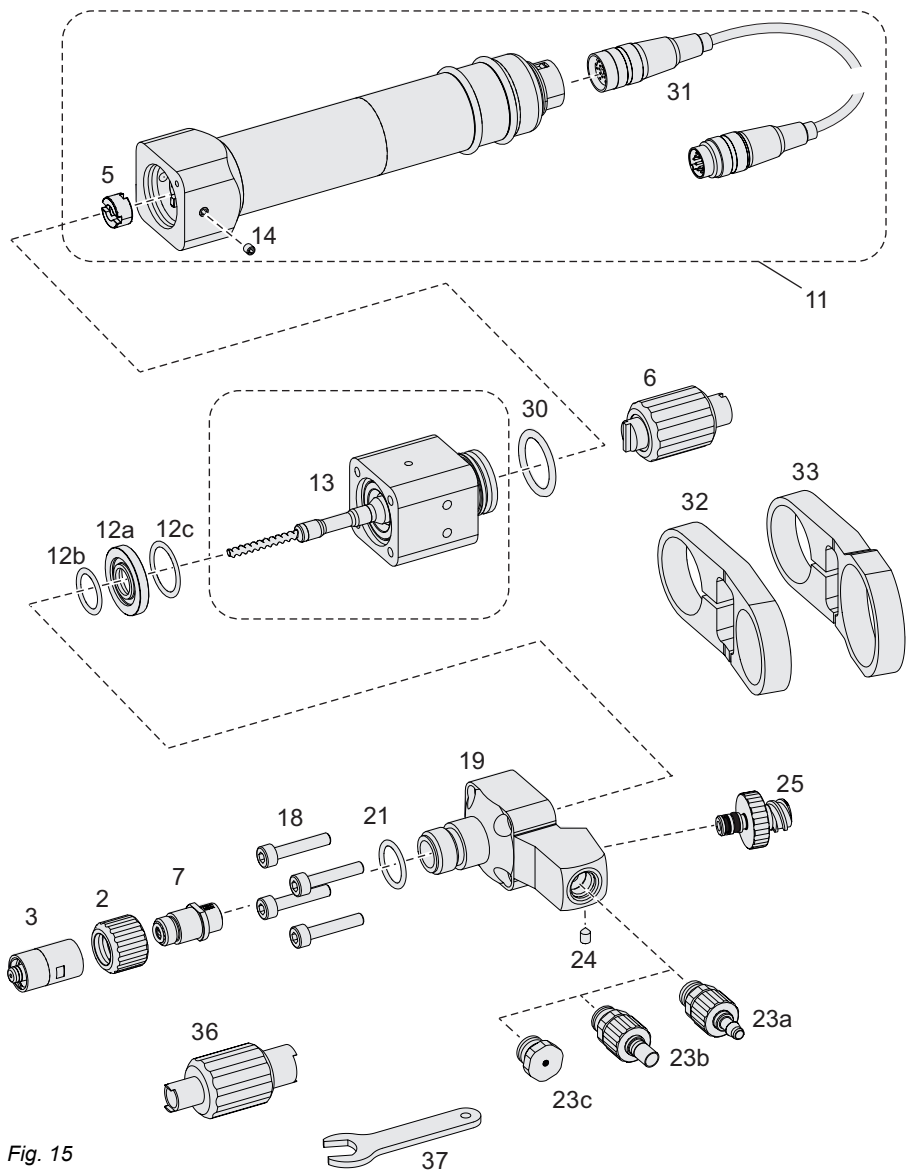


Fig. 15

8 Technical specifications

8.1 Installation declaration

Within the context of EU Directive 2006/42/EU on Machinery Annex II B

We,

ViscoTec Pumpen- u. Dosiertechnik GmbH
Amperstraße 13
D-84513 Töging am Inn,

hereby declare that, in the design and manufacture of the incomplete machine described below, the following basic requirements of EU Directive 2006/42/EC have been applied and complied with: 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.5.4, 1.6.1, 1.6.2, 1.7.4, 1.7.4.1, 1.7.4.2

We declare in addition that the special technical documents were drawn up in accordance with Annex VII part B of this Directive. Where applicable, the incomplete machine corresponds in addition to the stipulations of Directives 2014/35/EC on electrical equipment and 2014/30/EC on electromagnetic compatibility.

Product designation: eco-PEN XS 180

We undertake to convey to the market supervisory authorities, at their justifiable request, the special documents concerning the incomplete machine in electronic form via our documentation department.

The incomplete machine may only be put into operation once it has been determined, as required, that the machine or unit into which the incomplete machine is to be installed complies with the stipulations of Directive 2006/42/EC on machinery and that the EU Declaration of Conformity has been produced in accordance with Annex II A.

Töging am Inn, January 8, 2024



Martin Stadler
Managing Director and authorised representative

8.2 Technical data

eco-PEN XS 180	
Weight	approx. 175 g (without cartridge and holder)
Minimum operating pressure	0 bar, with self-levelling liquid
Maximum operating pressure	6 bar, with non self-levelling liquid
Maximum dosing pressure ¹⁾	20 bar
Self sealing ¹⁾	approx. 2 bar
Motor	18 to 24 V DC
Max. rotation speed	80 /min
Protection class according to DIN EN 60529	IP54
Sound level, (dB(A))	< 70
Operating conditions	+10 ° to +40 °C, air pressure 1 bar, relative humidity less than 60% (non-condensing)
Material temperature	+10°C to +40°C
Storage conditions	see page 11
Dosing volumes	approx. 4.4 µl/U
Dosing accuracy ²⁾	± 1%
Repeatability	> 99 %
Minimum dosing quantity	0.25 µl (0.00025 ml)
Volume flow ³⁾	0.0044 to 0.35 ml/min

¹⁾ Max. dosing pressure and self-sealing decrease with decreasing viscosity and increase with increasing viscosity. Consult with the manufacturer.

²⁾ Volumetric dosing as absolute deviation relative to one dispenser rotation. Depends on the viscosity of the dispensing material.

³⁾ Max. volume flow is dependent on the viscosity, inlet pressure.

Threads used	
Material inlet	<ul style="list-style-type: none"> • Luer-Lock DIN EN 1707 • Tube 4 mm (optional)
Bleed hole	<ul style="list-style-type: none"> • Tube 3 mm • Luer DIN EN 2594-1 (optional)
Nozzle connection	<ul style="list-style-type: none"> • Luer-Lock DIN EN 1707 with O-ring, patented

8.3 Materials used

Components in contact with the material	Material
Dispenser housing	POM
Dispenser parts, motor housing	Anodised aluminium
Screws, washers, etc.	Stainless steel A2
Stator elastomer, flexible shaft covering	vidur-C1
Shaft sealing rings	HDPE
O-rings	FKM, FFKM, NBR
Drive shaft, rotor	1.4404
Metal components (in contact with material)	1.4404

8.4 Dimensions

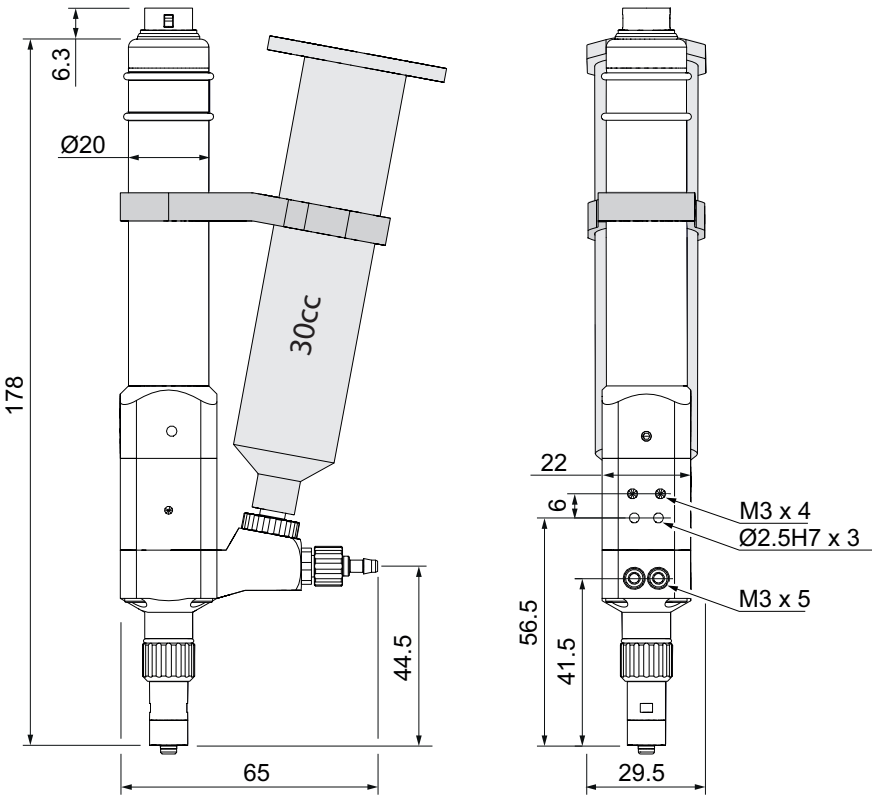


Fig. 16

9 Accessories

Mounting plate (item no.: 175289)

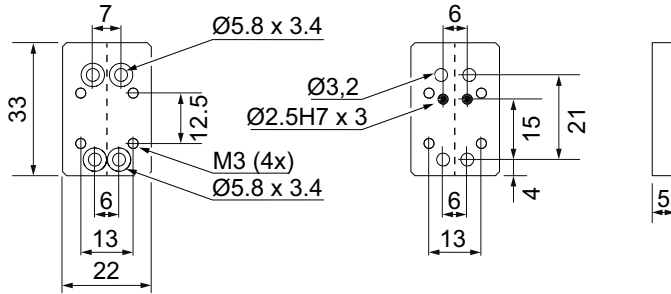


Fig. 17

In addition to the standard spare parts listed in Section (Page 29), special solutions are available upon request.

Furthermore, we can offer you a comprehensive range of consumables, such as:

- Dispensing needles
- Mixers

Please contact us if required: info@preeflow.com

10 Disposal

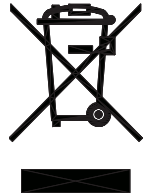
10.1 General principles

The dispenser must be removed by competent maintenance staff.

Equipment must be disposed of in an environmentally appropriate way.

All materials and material residue must be handled in accordance with the applicable recycling stipulations.

Electrical parts must not be disposed of with household waste. They must be taken to the collection points provided for this purpose or disposed of in an environmentally appropriate way.



10.2 Return and recycling programme for waste equipment in the European Union

Note on compliance with the legal requirements of Art. 7a of the German Electrical and Electronic Equipment Act (ElektroG) for B2B customers

The German act governing the sale, return and environmentally sound disposal of electrical and electronic equipment ("Elektro- und Elektronikgerätegesetz" or "ElektroG" for short) implements the requirements of European Directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) and the recast version of EU Directive 2012/19/EU in Germany.

According to the Electrical and Electronic Equipment Act (ElektroG) applicable in Germany, all manufacturers are obligated to provide reasonable means of returning waste equipment from users other than private households.

ViscoTec Pumpen- u. Dosiertechnik GmbH assumes responsibility for its products and recycles them once they have reached the end of their useful life. For equipment that was used for commercial purposes or in public institutions (known as B2B equipment), we provide a return and disposal scheme for you.

Returning and disposing of waste equipment

ViscoTec Pumpen- u. Dosiertechnik GmbH primarily takes back the actual electrical devices it manufactured as electronic waste at the end of their service life. We assume the costs of handling, recycling and recovering the electronic waste that was taken back, but do not assume shipping or transportation costs.

1. Please contact us via phone or e-mail in order to register your return.
2. Please use the note "Return for recycling according to WEEE Directive".
3. State the type and quantity of the products being returned for each item.
4. If the electrical device has come into contact with hazardous substances, please draw up a declaration of no objection and a declaration of decontamination and enclose them.
5. Clearly mark the transport unit with "Return for recycling".

Please note the following:

- As our customer, you are responsible for deleting any personal data on the products being disposed of. Please ensure this is done before returning the products to us.
- If the products contain batteries, remove the batteries before returning the products to us.

Products in our range that fall under the German Electrical and Electronic Equipment Act (ElektroG) are marked with a symbol depicting a crossed-out waste container on wheels. Any products marked in this way must be collected separately at the end of their useful life and appropriately recycled.

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[illegible]

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presented by:



Gewerbepark 13
85402 Kranzberg
Germany
www.dosieren.de



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Translation of German original operation manual

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