

OETIKER EPC 01

Translation of the original assembly instructions

Item No. 08906207 Issue 2211_V01_a

Complementary document to the translation of the original instruction manual

Item No. 08905306

Installation instructions for an incomplete machine

"Semi-automatic /fully automatic mode" with locking ring

Oetiker Schweiz AG Spätzstrasse 11 CH-8810 Horgen Switzerland



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1. Information on these installation instructions

IMPORTANT

Before installing and commissioning the product, reading these installation instructions and the EPC 01 original instruction manual carefully is mandatory. Special attention must be paid to the notices and hazard warnings. These installation instructions and the EPC 01 original instruction manual are applicable provided the function is correctly selected for your intended use.

Compliance with these installation instructions and the EPC 01 original instruction manual are mandatory. Failure to do so shall render all product liability and warranty of Oetiker Schweiz AG null and void. This also applies to the unauthorized disassembly or modification of our product.

These installation instructions and the EPC 01 original instruction manual must be kept in a safe place and must be included with the sale of our product to a third party, whether individually or as part of a machine.

1.1. Symbols and meanings of the warning signs used

Warning signs in this manual are used to alert you to property damage and personal injury.

- Always read and follow these warnings.
- ► Compliance with a warning symbol and warning word is mandatory.

The following symbols are used in these installation instructions:

DANGER



Indicates an imminent threatened danger.

Failure to follow the information will result in death or severe bodily injuries (disability).

! WARNING



Indicates a possible dangerous situation.

Failure to follow the information will result in death or severe bodily injuries (disability).

! CAUTION



Indicates a potentially dangerous situation.

Failure to follow the information will result in property damage and minor or moderate personal injuries.

NOTICE



Indicates general notices, useful user tips and work recommendations, which however have no influence on the safety and health of the personnel.



Symbol	Meaning	
>	Single step call to action	
1 2 3	Multi-step action guide Compliance with the sequence is mandatory.	
√	Requirement • Steps that are required or make work easier for the successful completion of an action.	
Connecting Display or operating elements of the menu or the PC software are highlighted.		

1.2. Area of application

These instructions apply to all Oetiker Electro-Pneumatic Controller 01 (EPC 01) units which use external control elements. The manual describes the functionality and correct operation in semi-automatic / fully automatic mode, and the integration of the controller into a complete machine. The manual contains important instructions for safe operation.

Commissioning, operating, decommissioning, restarting after shutdown, storing, and transporting the EPC 01 is described in the EPC 01 original instruction manual.

1.3. Compatibility

Some components of the Oetiker products EPC 01, ELK 01, and ELK 02 are compatible with each other. The following should be noted:

- The ELK 02 trigger unit cannot be used as a hand-held tool.
- The trigger unit of the ELK 02 can be used with the EPC 01, provided it is operated in the semi or fully automatic mode.
- The trigger unit of the EPC 01 cannot be used with ELK 01 and ELK 02.
- The pincer unit of the ELK 02 can be retrofitted to the trigger unit of the EPC 01. However, before retrofitting the unit, consultation with the regional Oetiker Service Center is highly recommended.



2. Basic safety instructions

2.1. Installation instructions

These installation instructions apply to:

Product: EPC 01 (control and trigger unit)

Manufacturer:

Oetiker Schweiz AG, Spätzstrasse 11, CH-8810 Horgen, Tel. 0041 (0)44 728 55 05, www.oetiker.com

This product is an incomplete machine.

The incomplete machine must not be put into service until it has been established that the machine into which the incomplete machine has been incorporated complies with the relevant requirements of Directive 2006/42/EC.

Authorized representative: The person listed below is responsible for the compilation of the technically relevant documents:

Pascal Moser, Automatic Assembly Tools Manager, of Oetiker Schweiz AG, CH-8810 Horgen, Switzerland

2.2. Handling the installation instructions

- ▶ Ensure this manual is always available for use and easy to access.
- If the unit is sold, these instructions must be passed on to the subsequent owner.
- ▶ Before using the EPC 01 for the first time, please carefully read the EPC 01 original instruction manual and these installation instructions.
 - It is important to become thoroughly familiar with all devices and their functions.
 - All personnel responsible for the installation, commissioning, maintenance or repair of the machine, must have read and understood these installation instructions and, in particular, the safety notices.

2.3. Explanation on how to install an incomplete machine

NOTICE



Before the initial start-up of the EPC 01 with locking ring, reading the chapter Safety Instructions in these installation instructions is mandatory.

The locking ring described in these installation instructions complies with the safety requirements of Machinery Directive 2006/42/EC. When properly installed and maintained, and when operated compliant with its intended use, the ring does not pose any risk to the safety and health of persons or the safety of goods.



2.4. Declaration of incorporation (sample)



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EG-Einbauerklärung

Gemäss Maschinenrichtlinie 2006/42/EG Anhang II 1.B

Wir,	Oetiker Schweiz AG Spaetzstrasse 11 CH-8810 Horgen SWITZERLAND	
Erklärt in alleiniger Verantwortung, dass die Maschi	ne	
Typ Bestehend aus Artikel Nummer Serien Nummer	EPC 01 Control Unit und Pincer 3200000 – 07 und	
folgenden grundlegenden Anforderungen der Richtlinie 2006/42/EG entspricht.	Anhang I Artikel 1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, 1.5.1 und 1.7.3	
Und allen grundlegenden Anforderungen der nebenstehenden Richtlinien – jeweils mit deren Änderungen – entspricht:	2014/30/EU - EMV-Richtlinie	
Die speziellen technischen Unterlagen gemäss Anhsind einzelstaatlichen Stellen auf begründetes Verlatie unvollständige Maschine darf erst in Betrieb ger Maschine, in die die unvollständige Maschine eingel Richtlinie 2006/42/EG entspricht.	nommen werden, wenn festgestellt wurde, dass die	
Bevollmächtigte Person für das Zusammenstellen der speziellen technischen Unterlagen gemäss Anhang VII b der Richtlinie 2006/42/EG:	Oetiker Schweiz AG Pascal Moser Spätzstrasse 11 CH-8810 Horgen	
Horgen, 27. Januar 2022	Oetiker Schweiz AG	
Automatic Assembly Tools Manager (Pascal Moser)	Legal Entity Manager Oetiker Schweiz AG (Marco Sohm)	
Einbauerklärung_ext_Ansteuerung (002).docx Page 1	of 1	

The standard version of the EPC 01 is designed as a complete machine with valid CE conformity. During operation in semi-automatic / fully automatic operating mode, described in these installation instructions, an integrated control system (PLC) assumes the inspection or triggering of the crimping process! Therefore, this product is considered an incomplete machine while in semi-automatic / fully automatic mode! The valid Declaration of Incorporation for semi-automatic / fully automatic mode is handed over when the corresponding license is purchased.



2.5. Intended use

- ► The incomplete machine described in these installation instructions is an externally controlled EPC 01 with the additional use of a locking ring.
- ▶ Use of the locking ring is recommended when the EPC 01 is being operated in fully automatic mode. This automatically suppresses the integrated safety function of the firmware, which requires the release of the safety lever after every 20th closure.
- Only persons who are familiar with the locking ring, and have been informed about the inherent dangers, shall be permitted to use, maintain, and repair the locking ring.
- ► The EPC 01 with locking ring may only be used for the intended purpose and under technically safe, flawless conditions.
- ► The EPC 01 with the relevant Oetiker pincers is used exclusively for the safe closure of Oetiker clamps and clips.
- Intended use also includes compliance with these installation instructions, including the EPC 01 original instruction manual and rigorous adherence to the technical data.
- ▶ Using the EPC 01 in potentially explosive atmospheres or outdoors is prohibited.
- Any other application or use over and beyond this is deemed not to be in accordance with the intended use.
- Compliance with the relevant accident prevention provisions and other generally recognized safety-related legal rules and regulations is mandatory.
- ▶ Unauthorized modifications to the EPC 01 as well as changes to the locking ring exclude any liability on the part of the manufacturer for resulting damage.

2.6. Use contrary to the intended purpose

The EPC 01 with locking ring corresponds to the state of the art and is operationally safe providing these installation instructions are strictly observed. Residual dangers exist in the event of improper use and operation by untrained personnel. The owner of the EPC 01, and not the manufacturer, is responsible for any personal injury or damage to property, resulting from improper use.



2.7. Danger and warning symbols

Symbols are used in these installation instructions and the EPC 01 that require special attention:

Symbol	Explanation
<u>^</u>	Draws attention to dangerous situations with possible personal injury and damage.
4	Danger: high voltage. Only a qualified electrician shall be permitted to proceed with the task
	Warning, risk of hand injuries
	These installation instructions must read before commissioning
0	Mandatory general notices Compliance with the safety instructions is mandatory.
	Hearing protection must be worn! Hearing protection must be worn when working on the system.
	Wearing complete protection is mandatory! Hearing protection, safety goggles, and head protection must be worn when working on the system.
	Wearing safety goggles is mandatory! Wearing safety goggles when working on the system is mandatory.
	Safety boots must be worn! Safety boots must be worn when working on the system.
	Protective gloves must be worn! Suitable protective gloves must be worn when working on the system.



2.8. General safety instructions

- Compliance with the operating and maintenance instructions in the EPC 01 original instruction manual is mandatory.
- ▶ Only qualified personnel shall be permitted to proceed with maintenance and repair tasks.
- Only persons familiar with the EPC 01 and who have been informed about the inherent dangers shall be permitted to use the unit .
- Compliance with the relevant accident prevention regulations and other generally recognized safety and occupational health rules is mandatory.
- In addition to the notices in these installation instructions, compliance with the general safety and accident prevention regulations is mandatory!
- ▶ The owner of the unit must ensure that the machine is operated only when in perfect condition!
- Factory settings must not be changed without the consent of Oetiker Schweiz AG!

Improvements to the machine

In an effort to continuously improve the quality of our products, we reserve the right to make changes to the product without amending the original instruction manual. Therefore, we reserve the right to make necessary changes to the information about dimensions, weights, materials, performance, and designations.

Only those electrical diagrams supplied with the machine shall be deemed valid.

2.9. Special safety instructions

Only personnel specially trained in maintaining and repairing electrical and pneumatic equipment shall be permitted to complete these tasks.

- ▶ Before proceeding with any maintenance and repair work, switch off the power and compressed air supply to the EPC 01. Then secure the unit to prevent an accidental restart.
- As part of the preventive maintenance, check hose assemblies for wear and replace, as required.

2.9.1 Moving parts



During operation, there is an inherent danger of severe injuries caused by crushing, cutting, and shearing off fingers by the moving jaws on the pincer head.



- ▶ Do not reach into the clamping area of the pincer head during operation.
- ▶ Before proceeding with any work on the clamping area of the pincer head, switch off the power and compressed air supply of the EPC 01. Then, secure the unit to prevent an accidental restart.
- Never point the pincer head at other persons.



2.9.2 Umherfliegende Teile

DANGER



If the workpiece, accessories or the machine tool break, parts can be ejected at high speed. There is an inherent danger of severe injuries.

NOTICE



During operation and maintenance, wearing safety goggles and safety shoes is mandatory. When working at heights above the head, wearing a hard hat is mandatory.

2.9.3 Noise level

A CAUTION



When the pincers are vented, a max. noise level at the control unit of 92 dBA is to be expected.

- ▶ If the noise emissions become excessive, wearing hearing protection is mandatory.
- Do not mount the control unit at head height.



2.9.4 Compressed air

CAUTION



Escaping compressed air!

Lacking proper work on the compressed air supply line can cause leakage of the compressed air and may lead to injuries.

NOTICE



Minimum compressed air quality according to ISO 8573-1;2010 (7-4-4), (\leq 5 μ , oil-free, dewatered)

Compressed air is used to operate the EPC 01. Even after switching off the unit, some system parts and devices may still be pressurized. Compressed air escapes when the pincers are vented.

Detailed information on the compressed air quality can be found in "Technical data" in the EPC 01 original instruction manual.

Escaping compressed air can cause injuries.

- Only qualified personnel shall be permitted to work on the compressed air supply system.
- After switching off and before maintenance and repair work, the compressed air supply must be disconnected. Switch off the compressed air supply.
- Depressurize all compressed air-operated system components and equipment.
- ▶ Do not operate EPC 01 above the permissible maximum pressure.
- ▶ Ensure that the vent holes on the pincer unit are unobstructed.



2.10. Safe working methods

2.10.1 Environmental conditions

The values for EPC 01 listed according to the EPC 01 original instruction manual:

Parameter Value	
11	Max. 80% to 31 °C
Humidity	Max. 50% at 40 °C (linearly decreasing between these values)
Operating temperature 15°C to 40 °C	
Storage temperature 0 to 60 °C	
Altitude max. 2000 m above mean sea level.	
Pollution level 2 (to EN 61010-1)	
Overvoltage category II (to EN 61010-1)	

- ▶ Before each start of production, the EPC 01 and the locking ring must be visually inspected for damage and it must be ensured that the system is only operated in flawless condition.
- Deficiencies must be reported to the supervisor immediately.
 - The EPC 01 must not be operated in case of defects.
- In order to ensure the safe and proper operation, compliance with the following instructions is mandatory:
 - Reading the installation instructions and the EPC 01 original instruction manual is mandatory.
 - Ensure the workpiece is fastened securely.

2.11. Safety devices

Safety devices protect against dangers when handling the EPC 01.

- Do not modify safety devices.
- Ensure that all safety devices are effective during operation.

2.11.1 Pressure relief valve





Escaping compressed air!

Lacking proper work on the compressed air supply line can cause leakage of the compressed air and may lead to injuries.

- Only qualified personnel shall be permitted to work on the compressed air supply system.
- ▶ Ensure that the compressed air supply is disconnected.

One or more pressure relief valves are installed in the service unit to protect against excessive pressure. The valves are arranged in such a way that they limit the pressure in all system parts and equipment affected. Alternative devices, such as pressure regulators, may be used, provided they meet the requirement of the application.



2.11.2 Safety shut-off valve

A safety shut-off valve is installed in the compressed air supply line in the area of the compressed air filter. In the event of excessive pressure, the safety shut-off valve closes and shuts off the compressed air supply line to the downstream system components and equipment.

2.12. Modifications, changes

If the seal on the EPC 01 is damaged or removed without authorization, any warranty provided by Oetiker Schweiz AG shall be rendered null and void.

- The EPC 01 must not be modified without the consent of Oetiker Schweiz AG. Any modification shall exclude any liability of Oetiker Schweiz AG for resulting damages.
- Only use original spare parts and accessories. This applies in particular to the use of pneumatic components and lines described in these original instruction manual.
- Do not dismantle any safety devices.

2.13. Transportation and packing

The locking ring supplied as an accessory is delivered in a plastic bag.

The transport of the EPC 01 is described in the EPC 01 original instruction manual.



2.14. Qualified personnel

WARNING



Danger posed by using unauthorized or unqualified personnel.

The use of this device is reserved exclusively for authorized and qualified personnel. The use of this device without proper instructions is prohibited. The authorization levels for the use of this device are as follows:

Personnel	User (public)	Line Manager	Customer Administrator
Operating the EPC 01	✓	✓	✓
Adjusting settings	×	✓	✓
Training users in the operation of the EPC 01	×	✓	✓
Providing original instruction manual	×	✓	✓
Ensure closure data	×	✓	✓
Updating firmware	×	×	✓

Explanation: \checkmark = permitted \times = not permitted

"User"

- is familiar with the mandatory safety instructions and regulations
- knows the relevant procedures described in this document
- is trained accordingly
- is trained by the responsible line manager or an employee of Oetiker

The owner must ensure that the employees have received the safety instructions and regulations in their respective language.

"Line Manager"

- possesses the knowledge described for the "user"
- trains the operator

"Customer Administrator"

- possesses the knowledge described for the "line manager"
- is the Power User and has extensive rights



3. Controlling the EPC 01 via an external control unit

⚠ WARNING

Never operate the EPC 01 via an external control unit without taking appropriate safety precautions.

Failure to do so may result in death or severe injuries.



- ▶ The system integrator is responsible for a safe integration of the EPC 01.
- The system integrator must proceed with a hazard analysis and set up the tool according to this analysis.
- Only qualified personnel shall be permitted to proceed with the integration.
- If you have questions about integration, contact your regional Oetiker Service Center.

3.1. Integration description

3.1.1 General function of the EPC 01 in its original condition

In its original condition, the EPC 01 has a safety function to prevent unintentional closures in manual and semiautomatic mode. The safety lever attached to the trigger unit and the integrated 3/2 safety valve allow controlled and safe closure and venting when actuated simultaneously. When the safety lever is released, it immediately interrupts the compressed air supply and the air is safely vented. Furthermore, after the 20th closure, an additional safety function of the firmware interrupts the closure function. In order for the crimping process to be reactivated, the safety lever must be released once by the user. This prevents an intentional permanent manipulation of the safety lever.

3.1.2 EPC 01 in semi-automatic / fully automatic mode

The safety function described in "3.1.1 General function of the EPC 01 in its original condition" on page 16 can be bypassed in semi-automatic / fully automatic mode. For this purpose, a corresponding license key must be requested from Oetiker. Once the license key has been activated, the integrated safety function of the firmware «Interruption after the 20th closure » is deactivated (in semi-automatic / fully automatic mode). The external control of the EPC 01 is thus enabled. In addition, it must be mechanically ensured that the safety lever is always actuated and remains fixed in this position. Oetiker recommends using the locking ring developed for this purpose. This means that safe bridging of the safety function can be ensured mechanically. The locking ring can be ordered separately as an accessory.

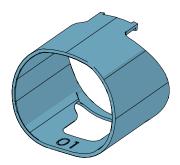


Fig. 1 Locking ring

For more information, please contact your regional Oetiker Service Center.



3.1.3 Installation of the locking ring

NOTICE



Before proceeding with any work on or with the EPC 01, these installation instructions and the EPC 01 original instruction manual must be read carefully. The locking ring may only be used in accordance with the intended purpose.

The locking ring can be fixed using a simple assembly step.

For this purpose, the locking ring is fixed to the release unit using a snap mechanism. (see "Fig. 2 Installation of the locking ring" on page 17)

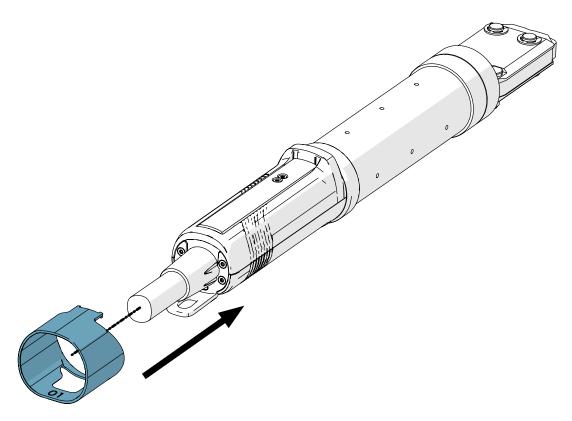


Fig. 2 Installation of the locking ring



3.1.4 Activating the license key

In order to run the semi-automatic / fully automatic mode via X20, the following license key is required:

32000398 - Professional Semi-Auto Mode

In order to run the semi-automatic / fully automatic mode via industrial networks, the following license key is required:

32000399 - Professional Industrial Network Semi-Auto Mode

Please contact your regional Oetiker Service Center to purchase the license key.

3.1.5 Settings in the PC software

Specific settings are made in the PC software for the integration. This applies in particular to the settings of the following parameters:

- ▶ Closure (see Section "Editing the closure settings" in chapter 8.6.7 of the EPC 01 original instruction manual).
- Closure feedback (see section "Edit closure feedback closure settings" in chapter 8.6.7 of the EPC 01 original instruction manual).
- ▶ Pincer test (see Section «Editing the pincer test settings» in chapter 8.6.7 of the EPC 01 original instruction manual).

3.1.6 Compatibility

During integration, the compatibility of individual components must be taken into account (see chapter "1.3. Compatibility" on page 5).



3.2. Exemplary integration for semi-automatic / fully automatic mode

The following simplified diagrams show how to integrate EPC 01 safely into the system.

For more information, please contact your regional Oetiker Service Center.

NOTICE



The integration and additional components must meet at least Performance Level C according to ISO 13489-1.

Mechanical integration

The following recommendation supports the proper and safe operation:

- Oetiker recommends installing a "proven valve". The safety valve prevents unintentional closures due to system faults.
- The "Proven Valve" must be operated using an external pilot valve (port 14). For this purpose, a tee junction is installed between the maintenance unit and the EPC 01 (tee junction not included in the scope of delivery)
- The distance between the EPC 01 "Pout" and the "Proven Valve 1" must be kept as short as possible (max. 0.5 m)

Electrical integration

• The actuation of the "Proven Valve" must be triggered by a "Proven Pushbutton" as engagement of the 2nd hand or by a "Proven Proximity Switch". The EPC 01 control unit is controlled either via digital I/Os "X20" or via industrial communication "EtherNet IP, Profinet or EtherCAT" (a "professional" license is required for this control method).



3.2.1 Integration example for semi-automatic mode

The following system overview describes the safe integration on the principle of a pushbutton that acts as a two-hand control device, or by means of a safe proximity switch if the cycle must be continued independently after the trigger button has been pressed.

Color legend of the diagrams

Color	Connection type	
blue	pneumatic connections	
orange	electrical, safety-relevant connections	
green Communication customers PLC and EPC 01 control unit		
black electrical connection between pincers and the EPC 01		

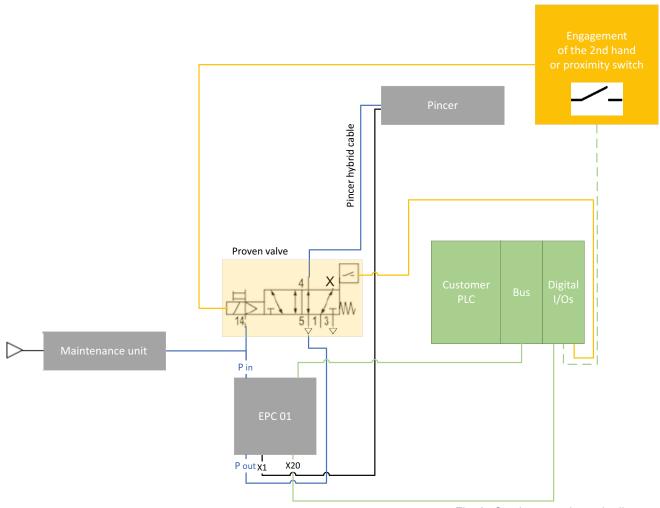


Fig. 3 Semi-automatic mode diagram



3.2.2 Integration example for the fully automatic mode

The following system overview describes the safe integration on the principle of a light curtain.

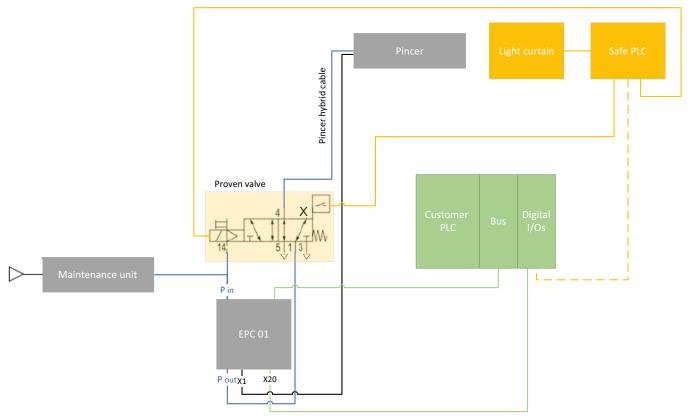


Fig. 4 Fully automatic mode diagram



4. Maintenance tasks

! CAUTION

The EPC 01 may only be converted if the unit has been vented properly and deactivated. If pneumatic connections are disconnected while the system is still pressurized, sudden rapid movements of moving parts can cause severe bodily injuries.



Compliance with maintenance and repair instructions is mandatory.

- Regular inspections in order to ensure that the pincer head and pressing mechanism are working properly are mandatory. If cracks and fractures are detected in the system, the affected components must be replaced immediately.
- Only an Oetiker technician shall be permitted to proceed with complex maintenance work that involves opening the EPC 01.

Compliance with the inspection and maintenance intervals specified in the EPC 01 original instruction manual is mandatory.

4.1. Removing the locking ring

Only skilled personnel who, based on their professional experience and training, have sufficient knowledge of the safety regulations, understand the accident prevention regulations, are familiar with the guidelines, and recognized rules of technology, shall be permitted to proceed with the removal of the locking ring. The specialists must be able to assess the work assigned to them, recognize and avoid possible dangers and be authorized by the person responsible for the safety of the system to proceed with the required work and activities.

Work steps:

- Switch off the EPC 01
- Disconnect EPC 01 from the power and compressed air supply
- Slightly lift the snap lock and remove the locking ring

4.2. Accessories for semi-automatic / fully automatic mode

Designation	Item No.
Locking ring EL	32000419
Locking ring ELT	32000420

NOTICE



Any liability and warranty on the part of Oetiker Schweiz AG for damage caused by the use of non-original spare parts and accessories is excluded.



5. Disposal

The disposal of the tool, all replacement parts and in particular the operating materials used or other substances hazardous to the environment must be carried out by specialist companies in accordance with the applicable legal regulations.

Parts and components of the EPC that have reached the end of their service life, e.g. due to wear, corrosion, mechanical stress, fatigue and/or due to other, not immediately recognizable effects, must be disposed of properly and professionally after disassembly in accordance with national and international laws and regulations.

NOTICE



Locking rings that are no longer usable must be recycled according to the type of material of which they are made.

Non-recyclable materials must be disposed in an appropriate manner.

6. Eliminate malfunctions

Error/cause/remedy table see EPC 01 original instruction manual.

7. Technical data

7.1. Mass and weights

7.1.1 EPC 01

For information on the dimensions of the control unit and the pincers, refer to the EPC 01 original instruction manual.

7.1.2 Locking ring

Parameter	EL dimensions (L x W x H)	ELT dimensions (L x W x H)
Outer dimensions [mm]	50 x 54.7 x 52.8	42 x 54.7 x 50.3
Weight [kg]	0.013	0.011
Color	black (plastic)	black (plastic)



8. Warranty

For warranty details, refer to the EPC 01 original instruction manual.

8.1. Areas of application

The locking ring is designed exclusively for the case where the EPC 01 is integrated into a system as an incomplete machine and the safety function is to be bypassed for this purpose.

Any application over and beyond this is contrary to the intended use.

NOTICE



The manufacturer shall not be held liable for any damage resulting from this. The risk is borne solely by the user.

Intended use also includes observing the installation instructions and complying with the maintenance and repair instructions as specified by the manufacturer in the EPC 01 original instruction manual. Only persons who are familiar with the EPC unit with locking ring and have been informed about the inherent dangers shall be permitted to operate and maintain the unit.

CAUTION



Compliance with the relevant accident prevention provisions and other generally recognized safety-related legal rules and regulations is mandatory.