OETIKER®
Reliable Connections

Cordless clamp pincer CP 10 / CP 20 / CC 20

Original instruction manual

Original user manual

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Software V3.0.0 / Firmware V6.08

OETIKER Schweiz AG
Spätzstrasse 11
CH-8810 Horgen
Switzerland

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1 Information about this manual

1.1 Symbols and means of depiction

Warning instructions are used in this manual to warn of the risk of personal injury or property damage.

- ► Always read and observe these warning instructions.
- ► Observe all instructions that are flagged with a safety alert symbol and text.

The following symbols are used in this instruction manual:

⚠ **DANGER**	Indicates a hazard with a high risk of death or serious injury!
⚠ **WARNING**	Indicates a hazard with medium risk, which may lead to death or serious injury!
⚠ **CAUTION**	Indicates a low-risk hazard that may lead to moderate or minor injuries!
NOTICE	Indicates a risk of damage to the device! Provides a useful hint for operation!

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 Scope

This instruction manual is valid for OETIKER clamp pincers CP 10 / CP 20 / CC 20.

1.3 Definitions of terms

The term "clamp pincers" used in these operating instructions and these safety instructions refers to both mains-operated clamp pincers (with mains cable) and cordless clamp pincers (without mains cable) with battery and charger.

2 Basic safety instructions

2.1 Using the instruction manual

- Make sure that this instruction manual is always kept close at hand ready for use.
- Pass this instruction manual on to the next owner or user.
- Please read this instruction manual carefully before commissioning the clamp pincer CP 10 / CP 20 / CC 20. Familiarize yourself with all settings and their functions. Anyone involved in setting up, commissioning, maintaining or repairing the unit must have read and understood the instruction manual and in particular the safety instructions.

2.2 Intended use

- The CP 10 / CP 20 / CC 20 clamp pincers with the corresponding OETIKER pliers are used exclusively for the reliable closing of OETIKER clamps and clips.
- The CP 10 / CP 20 / CC 20 clamp pincers may only be used for the intended purpose and under technically safe, fault-free conditions.
- Intended use also includes observing these instructions and complying with the technical data.
- The CP 10 / CP 20 / CC 20 clamp pincer is designed for operation by one person. Action by other persons to start of the closing cycle is prohibited.
- The use of the CP 10 / CP 20 / CC 20 clamp pincers in potentially explosive atmospheres or outdoors is not permitted.
- Any other application or use over and beyond this is deemed not to be in accordance with the intended use.

Usage other than intended use

The clamp pincer CP 10 / CP 20 / CC 20 is in line with state-of-the-art technology and is safe to operate. Residual dangers remain if it used incorrectly or by untrained personnel. The manufacturer bears no responsibility for injuries to personnel and damage to property arising from improper use of the clamp pincer CP 10 / CP 20 / CC 20. In such cases the operating company bears sole responsibility.

2.3 General safety instructions

- If the safety instructions are disregarded there is a risk of potentially fatal injuries, damage to the health of personnel and damage to property on the machine or surroundings.
- Retain all operating instructions and safety instructions; they are essential for many years of fault-free operation of clamp pincer CP 10 / CP 20 / CC 20.
- Before using the clamp pincer CP 10 / CP 20 / CC 20, review and be aware of the hazard area. Only if no hazards are present may the clamp pincer be activated.
- Use only clamp pincers CP 10 / CP 20 / CC 20 which are in proper working condition. Inspect for damage prior to each use.
- Maintenance and repair work should be carried out only by qualified specialists.
- Keep your work area clean and ensure good lighting (> 400 lux). Untidy or poorly lit working areas can lead to accidents.
- Keep children and other people away when working with clamp pincers. Distractions can cause the user to lose control of the clamp pincer CP 10 / CP 20 / CC 20.
- Do not use the clamp pincers in potentially explosive areas where there are flammable liquids, gases or dusts. Clamp pincers generate sparks that can ignite dust or vapors.
- Clamp pincer CP 10 / CP 20 / CC 20
  - may be used only by persons who are familiar with its use and have been informed of the risks.
  - may be used only in hand-held mode. The START button and reset button must be accessible and operable in an emergency.
  - must not be used as a stationary tool, and may not be secured in a jig fixture.
  - may be opened or serviced only by the manufacturer.
  - may be used only with the original equipment battery packs.
  - may not be used during heavy rain, or under water.
- If during operation the clamp pincer CP 10 / CP 20 / CC 20 poses a safety risk to people or to the machine, release the START button and press the reset button.
- All relevant accident prevention regulations and other generally recognized health and safety rules must be complied with. The manufacturer shall not be held liable for damage resulting from unauthorized modifications to the clamp pincer CP 10 / CP 20 / CC 20.
- Suitable personal protective clothing must be worn when using the clamp pincer.
- When working at heights, clamp pincer CP 10 / CP 20 / CC 20 must be adequately secured against being dropped.
- The hydraulic oil in clamp pincer CP 10 / CP 20 / CC 20
  - must not be drained without taking necessary precautions.
  - and must be properly disposed of.
- The permissible ambient, storage and operating temperatures must be complied with.

Improvements to the machine

In our endeavor to continuously improve the quality of our products, we reserve the right to make improvements without changing the instruction manual. Details of dimensions, weights, materials, performance ratings and names may therefore be subject to necessary changes. Regarding electrical diagrams, the diagram supplied with the machine takes precedence in all cases.

2.4 Safety-conscious work

► Check the clamp pincer CP 10 / CP 20 / CC 20 for visible damage before each use and starting production. Use it only when in proper operating condition.

► Any defects must be reported to a supervisor immediately. The clamp pincer CP 10 / CP 20 / CC 20 must not be used if it is damaged or worn.

2.5 Electrical safety

- If these instructions are disregarded there is an increased risk of electric shock.
- The connector plug of the clamp pincer must be the correct type for the socket. The plug must not be modified in any way. Do not use adapter plugs in conjunction with clamp pincers that react to the protective earth in the socket.
- Avoid bringing your body into contact with grounded equipment such as pipes, radiators, cookers and fridges.
- Do not expose clamp pincers to rain or moisture.
- Do not use cables and leads for purposes for which they are not intended, e.g. to carry or hang up the clamp pincers or to pull the plug out of the socket. Keep the power cable away from heat, oil, sharp edges and moving parts.
- If you are working outdoors with clamp pincers, only use extension cables that are specially designed for outdoor use.
- Connect the tool only to a power socket that is protected with a suitable residual current circuit-breaker.
- Before starting work with the clamp pincers, check carefully that there are no live parts in the working area. If necessary, take protective measures appropriate for working in the vicinity of live parts.

2.6 Safety of personnel

- Be alert and pay attention to what you are doing; act sensibly and carefully when working with clamp pincers. Never use clamp pincers when you are tired or under the influence of drugs, alcohol or medication. A moment of carelessness when using clamp pincers can lead to serious injury.
- Always wear safety goggles and other personal protective equipment suitable for your work with the clamp pincers, such as a dust mask, non-slip safety shoes, hard hat or hearing protection. Wearing personal protective equipment reduces the risk of injuries.
- Avoid accidentally switching on the clamp pincers. Make sure that the clamp pincers is switched off before connecting it to the mains and/or plugging in the battery, picking it up or carrying it. If you have your finger on the trigger when carrying the clamp pincers or if the clamp pincers are switched on when connected to the power supply/battery, this can cause accidents.
- Avoid any abnormal bodily posture. Make sure you are standing comfortably and are well balanced at all times. This gives you better control over the clamp pincers in unexpected situations.
- Avoid making incorrect assumptions regarding the safety requirements and always observe the rules for using clamp pincers, even if you are already familiar with their use. Carelessness can lead in a split second to serious injuries.
- Never reach into the working area around the head of the tool unless you have ensured the tool is securely stopped. The clamp pincers are only safely immobilized when the tool is fully open and the battery has been removed after the reset button has been pressed for at least 5 seconds.
- The mechanical return movement permits the user to bring the tool to the home position in an emergency and before the tool has engaged. Pressing the reset button depressurizes the tool. After finishing work and before putting down the clamp pincers, the appliance and the tool must be brought to a standstill and depressurized.
- Keep other people, especially strangers, away from the work area when working with the pincer head! The clamp pincers may only be operated by one person at a time. Inform all employees about the danger zone of the clamp pincers.

2.7 Use and handling of the clamping pliers

- Do not overload the clamp pincer Use the right clamp pincer for your work. You will work better and more safely in the desired power range if you use the right clamp pincer.
- Do not use clamp pincers if the switch or other components are defective. Clamp pincers that can no longer be switched on or off are dangerous and must be repaired.
- Disconnect the plug from the socket or remove the removable battery before making any adjustments to the device, replacing parts of the attachment head or putting down the clamp pincer. These precautionary measures prevent the clamp pincer from starting accidentally.
- Keep unused clamp pincers out of the reach of children. Do not allow anyone to use the clamp pincers who is not familiar with them or has not read these instructions. Clamp pincers are dangerous in the hands of inexperienced users.
- Carefully maintain your clamp pincer and the mounting head. Check that the moving parts operate correctly and do not jam. Check that no parts are broken or damaged that could impair the operation of the clamp pincer. Have damaged parts repaired before using the clamp pincer. Many accidents are caused by poorly maintained clamp pincers.
- Keep handles and holding surfaces dry, clean and free of oil and grease. Slippery handles and holding surfaces may mean that the clamp pincer can no longer be brought safely under control in unforeseeable situations.

2.8 Use and handling of the cordless clamp pincer

- Charge the battery only with battery chargers recommended by the manufacturer. A charger that is designed for use with one type of battery is used to charge other type of battery there is a risk of fire.
- Only use the battery intended for the respective clamp pincer. The use of other batteries can lead to injuries and the risk of fire.
- Keep the uninstalled battery away from office staples, coins, keys, nails, screws and other small metal objects. These can potentially bridge the terminals. A short circuit between the battery terminals can cause burns or fire.
- If the battery is misused, fluid can leak from it. Avoid contact with such fluid. If you do come into contact with it, wash the affected area with water. If battery fluid gets into the eyes, seek medical assistance immediately. Contact with battery fluid can lead to skin irritation or burns.
- Do not use battery that is damaged or has been modified. Damaged or modified batteries can behave unpredictably and can lead to fire, explosion or risk of injuries.
- Never expose a battery to fire or excessive temperatures. Fire or temperatures in excess of 130 °C (266 °F) can lead to an explosion.
- Follow all charging instructions and never charge the battery or cordless clamp pincer at temperatures outside the range specified in the operating instructions. Incorrect charging or charging at temperatures outside the permissible range can render the battery useless and increase the risk of fire.
- The battery may only be removed when the clamp pincers have come to a complete standstill.
- Do not charge the battery in the presence of highly flammable substances or gases. On completion of charging, unplug the charger from the socket. Do not dismantle the charger.
- If the battery is kept in storage for an extended period, the charge status must be checked regularly. The optimum charge status is between 50 % and 80 %. Batteries should be recharged a maximum of every 12 months so as to avoid deep discharging which can render the battery useless.
- When a battery has run flat it must never by stored longer than 1 month in the discharged condition, so as to avoid deep discharging which can render the battery useless.
- The state of charge can be viewed by pressing the button on the battery. The battery can remain in the clamp pincer, but the tool must be switched off at least 1 minute beforehand to ensure an accurate result. The number of LEDs that light up indicates state of charge. A flashing LED indicates less than 10 % charge level. This display should be used only to indicate the charge remaining. For further information, consult the operating instructions supplied with the charger.

2.9 Conversions, modifications

- Clamp pincer CP 10 / CP 20 / CC 20 must not be modified either constructively or with respect to safety features without express permission from OETIKER. OETIKER shall not be held liable for any damages resulting from any such modifications.
- The housing halves of clamp pincer CP 10 / CP 20 / CC 20 are sealed with a security label. The screws on the adapter to the pincer head are sealed with sealing varnish. If the seal is broken, OETIKER will not accept any claims under warranty. In particular, repairs of any kind, apart from to the pincer head, are prohibited.
- Use only Original spare parts and accessories.
- Do not dismantle any safety equipment or features.

2.10 Qualified staff

These clamp pincers may only be used by authorized and qualified personnel in compliance with the technical data and the following safety instructions and rules. Qualified personnel are people who are familiar with handling, assembling, commissioning and operating the pincer and who have the qualifications appropriate to their job role.

2.11 Maintenance work

The inspection and maintenance intervals specified in the instruction manual must be complied with. Maintenance and repair instructions must be observed accordingly (*see Section 6.2*).

2.12 Storage and transport

To protect the clamp pincer CP 10 / CP 20 / CC 20 against damage, it must be cleaned after each use and before transport and placed in the supplied pincer case. The battery must be disconnected from the clamp pincer CP 10 / CP 20 / CC 20 for this purpose.

3 Overview

3.1 System overview

- The pincers enable flexible, cordless and precise installation of OETIKER ear clamp models and MCRs. They ensure high repeatability of the closing force and enable far-reaching process monitoring with easy setting of the closing parameters.
- The pump bodies and all operating parts are made of high-strength materials and have been rigorously tested.
- The pincer housing is made of glass-filled insulating and shock-resistant polyamide.
- The device is designed to be ergonomic, compact and robust.
- The device has a high return supply volume, for quicker operating cycles.
- The software supplied allows the process data to be displayed on a PC.
- The device is equipped with a microcontroller control system.
- Pressure monitoring is performed by an electronic pressure sensor.
- The level of battery charge is monitored continuously.
- Service management is monitored electronically.
- The traceability of the operating cycles is ensured by automatic recording and saving of the process data in an internal memory. A maximum of approx. 100,000 operating cycles can be saved.
- A mini USB port allows the saved data to be read, settings performed and software updates performed.
- Additional LED displays for quick info regarding machine status and process results.
- High availability due to long maintenance intervals (maintenance necessary every 100,000 closures).

The overall design of the CP 10 / CP 20 / CC 20 cordless clamp pincer system consists of the following main components:

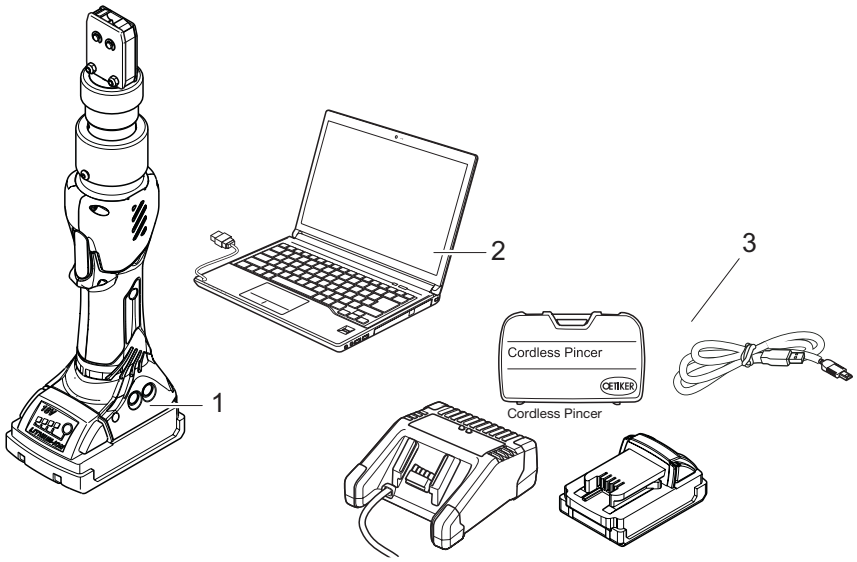


Fig. 1: *Structure of entire system CP 10 / CP 20 / CC 20*

1. Cordless clamp pincer CP 10 / CP 20 / CC 20
2. PC with installed software (PC not included in scope of supply)
3. Accessories (*see Section 3.4*)

3.2 Clamp pincer CP 10 / CP 20 / CC 20

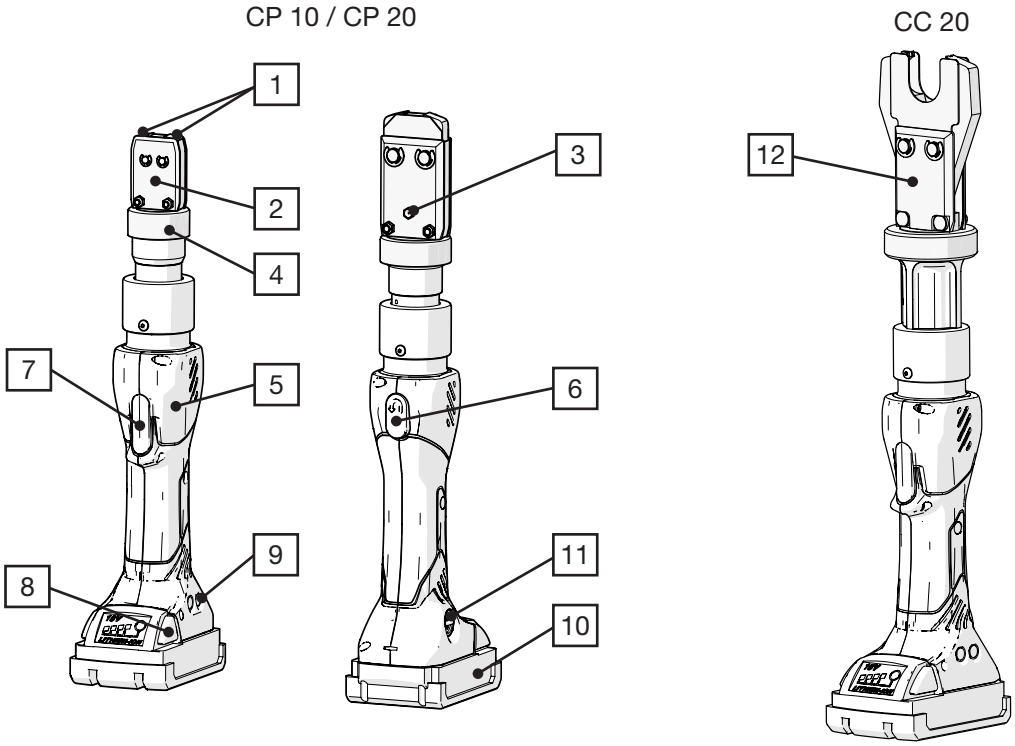
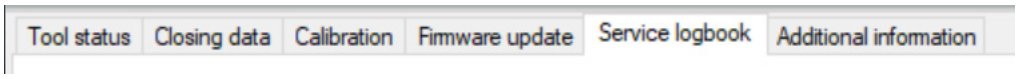


Fig. 2: *Clamp pincer CP 10 / CP 20 / CC 20*

1. Pincer jaws
2. Pincer plate
3. Grease nipple
4. Union nut
5. Pincer body
6. Reset button
7. START button
8. Battery release
9. Status LEDs
10. Battery
11. USB interface
12. Oetiker Multicrimp pincer head

3.3 Overview of PC software

The program interface is divided into 6 tabs.



- Status: Display of the closing force curve and display of process data of the most recent closure or any selected closure
- Closing data: Input and management of the closing data set
- Calibration: Activation of pincer calibration
- Firmware: Upload the new firmware for the clamp pincers
- Service log: Entry of desired or executed service measures
- Additional information: Operation manual and contact data

3.4 Accessories

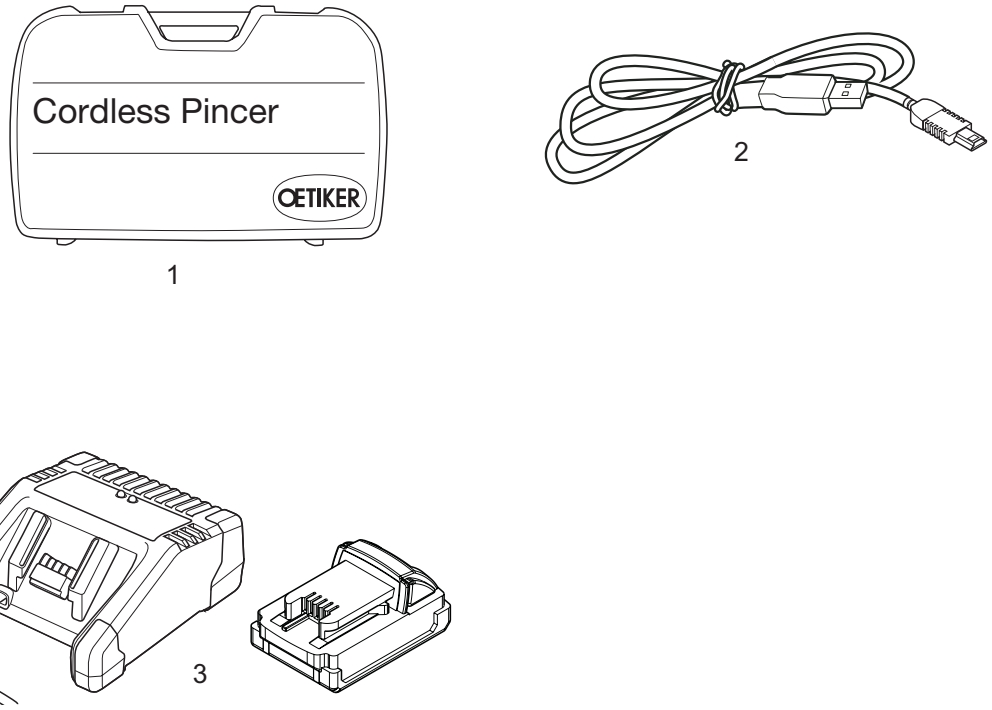


Fig. 3: *Accessories*

1. Transport case
2. USB 2.0 Connecting cable
3. Battery and battery charger

Additional accessories are available for the CP 10 / CP 20 / CC 20 clamp pincers, e.g.

- Test device CAL 01, consisting of calibrator CAL 01 and closing force sensor SKS 01, for measuring the jaw force (closing force) and for calibrating the clamp pincers (CP 10 / CP 20 only)
- AC adapter for operating the clamp pincer without a battery

4 PC software and firmware

4.1 System requirements

The PC on which the software is installed must satisfy at the following requirements:

- Computer: CPU at least Intel i5
- Graphics: Screen resolution of at least 1024 x 768 pixels or higher, 65 535 colors or more
- Working memory: 512 MB RAM or more (1 GB recommended)
- Hard disk space: 200 MB free disk space (1 GB recommended)
- Screen resolution: 1024×768 or higher, 65535 colors or more
- Operating system: Windows 10 / 11 in 32/64-bit editions
- Connections: USB 2.0

Installation notes

The program must be installed and started up for the first time by somebody with adequate user rights. If an error message appears during installation or on initial startup, please contact your system administrator.

4.2 Installing the PC software

NOTICE

The following descriptions assume a basic knowledge of how to use a PC with the Windows operating system.

4.2.1 Installing the PC software

The PC software can be downloaded at www.oetiker.com --> Downloads --> Software

► Start the installation by double-clicking on the file AnalysesoftwareOetiker V3.0.0.msi.

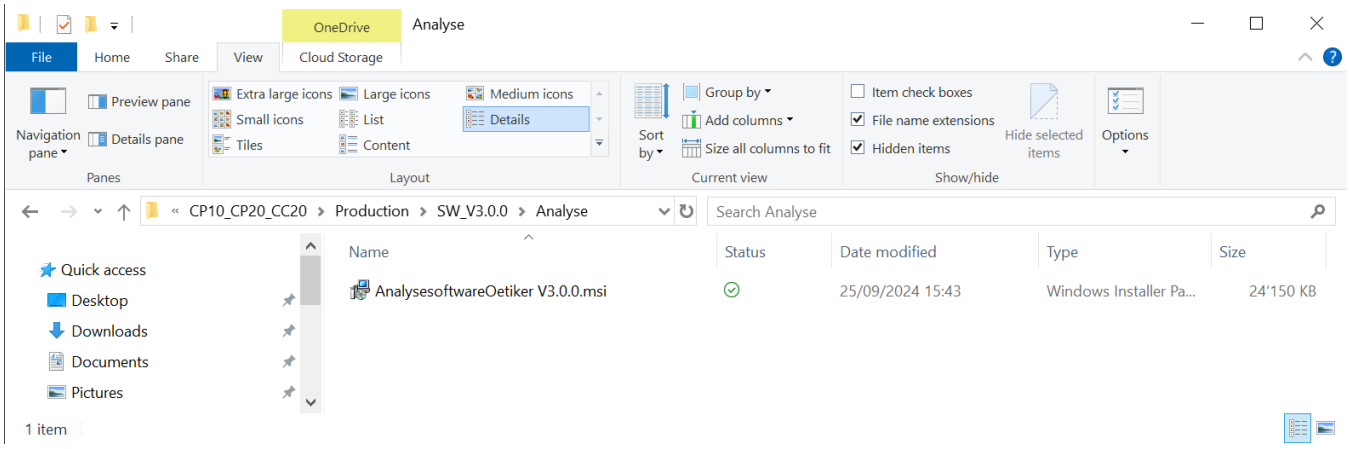


Fig. 4: *Installation Software*

► Follow the instructions of the Setup wizard.

4.3 Starting PC software

1. 

Double-click on the PC software icon.
The PC software will start.

2. Press START button on clamp pincer CP 10 / CP 20 / CC 20.
3. Connect clamp pincer CP 10 / CP 20 / CC 20 and PC with the USB cable.

Plug & Play

After the PC software supplied has been installed and clamp pincers CP 10 / CP 20 / CC 20 connected to the PC via the USB cable, the computer automatically recognizes the pincer.
When connected for the first time, this recognition of the clamp pincer may take a few minutes. After this the PC software can be used.

4.4 Updating firmware

This function allows new firmware to be loaded to the device.
You can find the latest firmware in the download area at: www.oetiker.com

	***NOTICE*** **Damage to the clamp pincer!** Loading the wrong firmware can cause the clamp pincer to malfunction. ► Always load the correct firmware version designed for the specific clamp pincer. Example: Only load firmware for CP 10 for clamp pincer CP 10.

	***NOTICE*** The firmware currently active in the device is shown in the "Device status" area.

1. Connect clamp pincer CP 10 / CP 20 / CC 20 and PC with the USB connection.

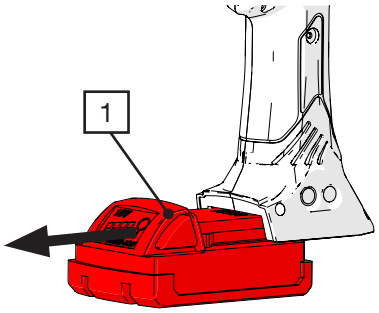


Fig. 5: *Removing the battery*

2. Remove the battery (*Fig. 5*/1) from the clamp pincers.

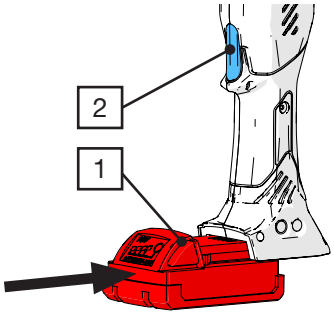


Fig. 6: *Inserting the battery*

3. Press and hold the START button (*Fig. 6*/2) and slide the battery (*Fig. 6*/1) back in. The status LEDs will flash red.

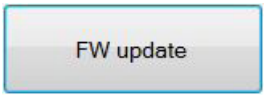
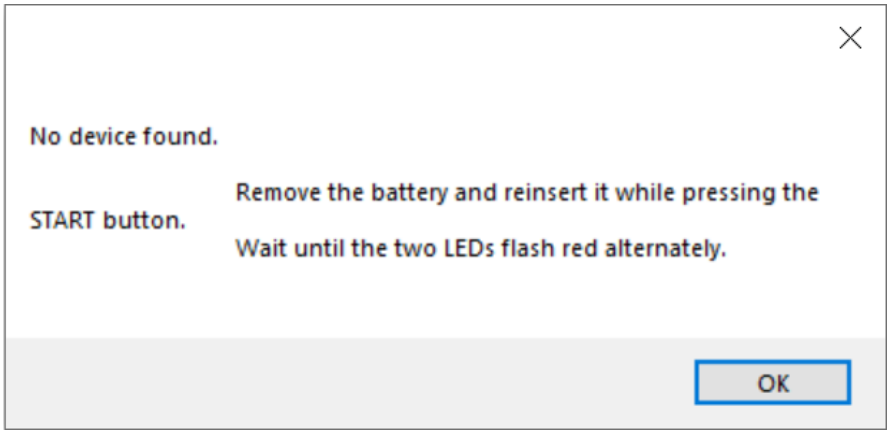


Fig. 7: *Firmware update button*

4. Start the PC software and click on the "FW update" button in the "Firmware" menu.

NOTICE

If you click on "FW update" before the device has switched to transfer mode, the "No device found" message window is displayed with information on how to proceed (see below).



5. Select the new firmware version in the "Open" window and press the "Open" button to confirm the selection.

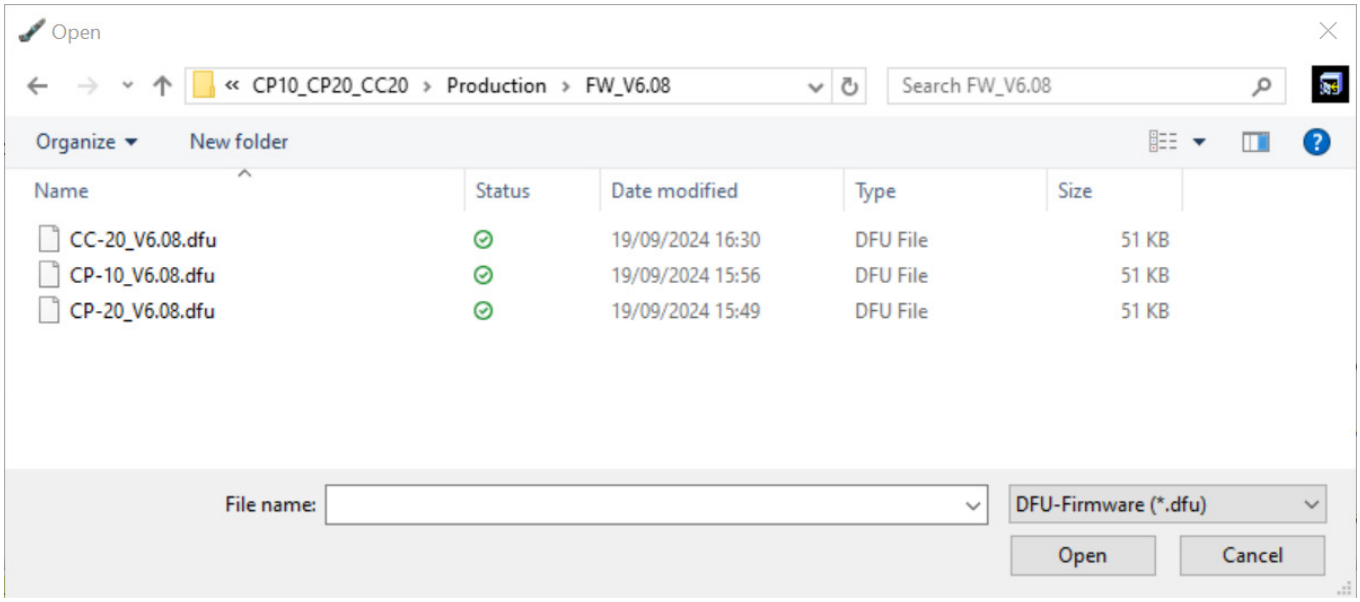


Fig. 8: *Confirming firmware selection*

The selected firmware will now be loaded. After the firmware has been loaded successfully the device switches on automatically, the loaded firmware is active and the firmware update is now complete.

⚠	**NOTICE** The status of the firmware update can be seen from the data transfer progress bar. Once the transfer has been successfully completed, the message "Data successfully transferred" is displayed. If the firmware transfer was unsuccessful, the information window "Data not correctly transferred" appears. In this case, repeat the process.

5 Use of clamp pincer

5.1 Setting up the clamp pincer

5.1.1 Input and management of locking data

CAUTION

Possible damage to the clamps and pincer head!

Entering incorrect closing data can cause the clamp pincer to malfunction.

► Always enter the correct values for the clamps used and the pincer head. Observe the specifications and technical data given by OETIKER.

Requirement:

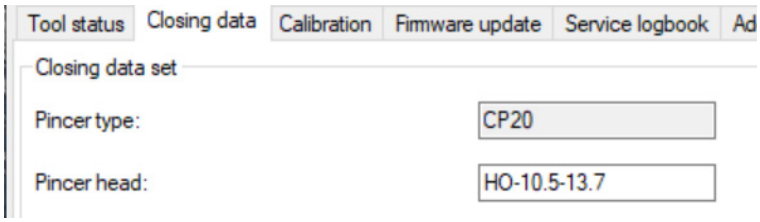
✓ Battery is charged.

✓ The clamp pincer must be connected to the PC via the USB cable.

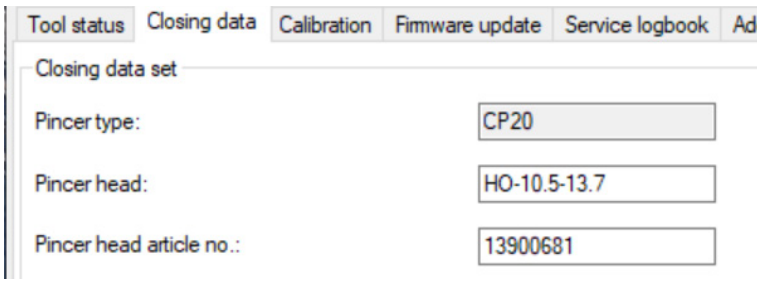
✓ The clamp pincer must be switched on.

NOTICE

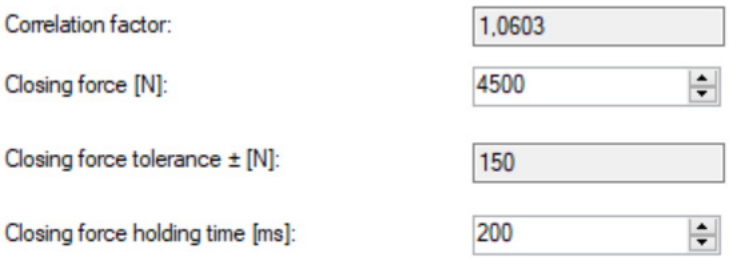
The values for the pincer model, correlation factor and closing force tolerance are automatically adopted by the PC software. These values cannot be changed manually.



1. Enter the name of the pincer head in the "Pincer head" field in the "Closing data" menu. (max. 18 characters possible).



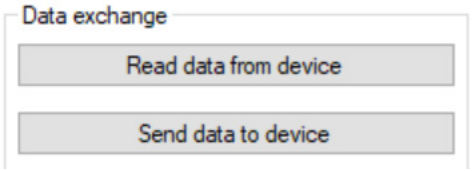
2. Enter the item number of the pincer head in the "Pincer head art. no.:" field. (max. 18 characters possible).



3. Enter the value of the target closing force in the "Closing force [N]" field.

If the minimum is not met or maximum closing force is exceeded, the closing force will be automatically restricted to the minimum/maximum value.

4. Enter the value of the closing force holding time in the "Closure force holding time [ms]" field.



5. Click on the "Send data to device" button.

The data is confirmed and transmitted to the clamp pincer. The status bar shows the progress of data transmission.

	NOTICE
	After every change to the target closing force, the clamp pincer must be calibrated.
	► Save the input values and calibrate the clamp pincer.

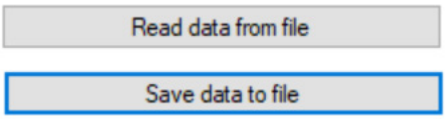
5.1.2 Loading closing data from a file

Requirement:

✓ Battery is charged.

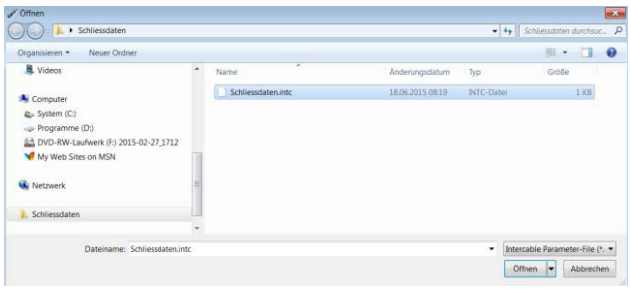
✓ The clamp pincer must be connected to the PC via the USB cable.

✓ The closing data set is available on the PC or data carrier in file format (.intc).



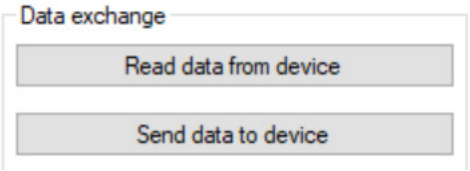
1. Click on the "Load data from file" button in the "Closing data" menu.

The folder overview of your PC opens.



2. Select the closing data record to be read and click on "Open".

The values of the closing data set are automatically adopted by the PC software and loaded into the input fields.



3. Click on the "Send data to device" button.

The data is confirmed and transmitted to the clamp pincer. The status bar shows the progress of data transmission.

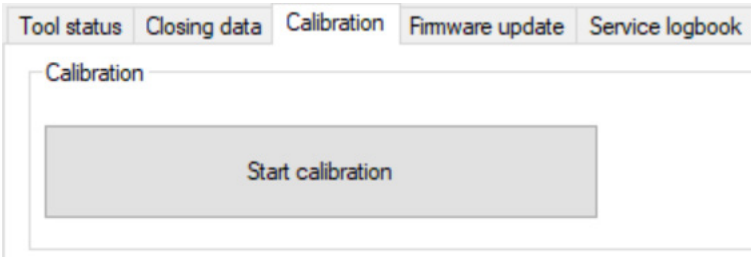
⚠	**NOTICE**
	After every change to the target closing force, the clamp pincer must be calibrated.
	► Save the input values and calibrate the clamp pincer.

5.1.3 Calibrating the CP 10 and CP 20 clamp pincers

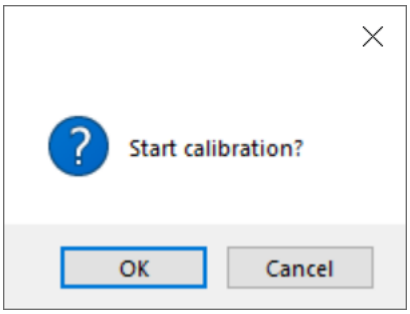
⚠	**NOTICE** **Possible damage to the clamp pincer and faulty clamp closures!** To ensure a correct and repeatable closing force, calibration must be carried out at least once per shift or once per day. Calibration is also necessary if pincer components are exchanged. OETIKER recommends checking the closing force after calibration as an additional verification measure. It is critical to ensure that clamps are not closed in calibration mode.

Requirement:

- ✓ The clamp pincer must be connected to the PC via the USB cable.
- ✓ The calibration gauge (CAL 01) is equipped with the appropriate measuring jaws for the respective pincer head.
- ✓ The new closing force value has been transmitted to the clamp pincer so that it is automatically incorporated into the pincer test.

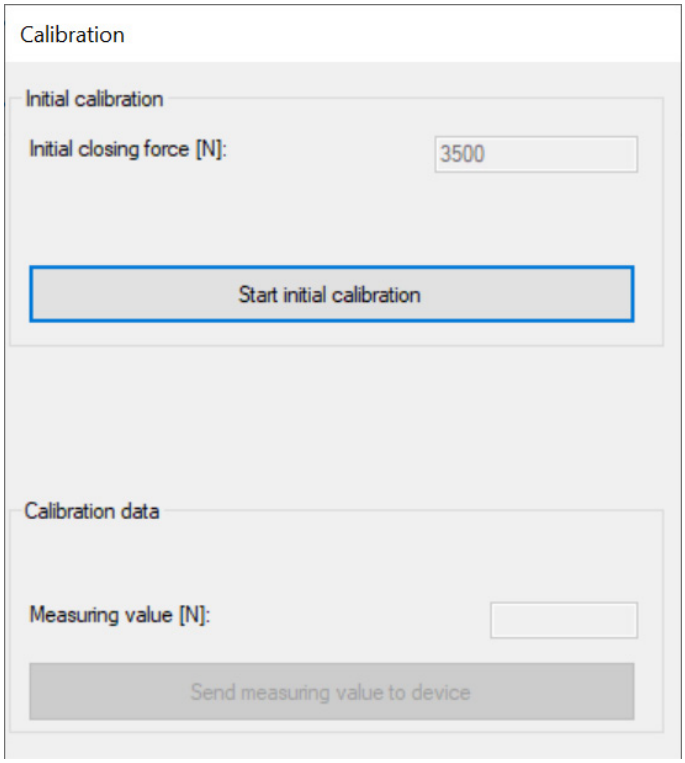


1. Click on the "Start calibration" button in the "Calibration" menu.



2. Click "OK" in the confirmation window to start the calibration.

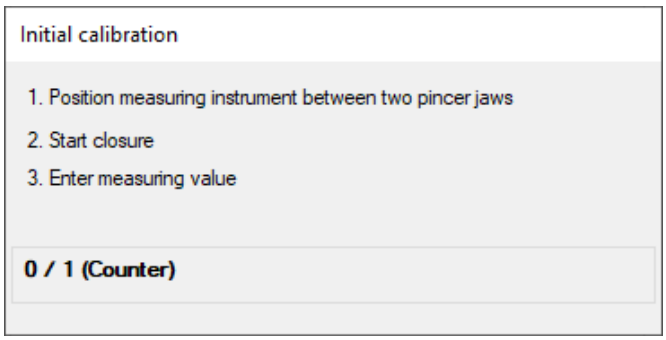
Initial calibration



The "Calibration, initial calibration" window opens.

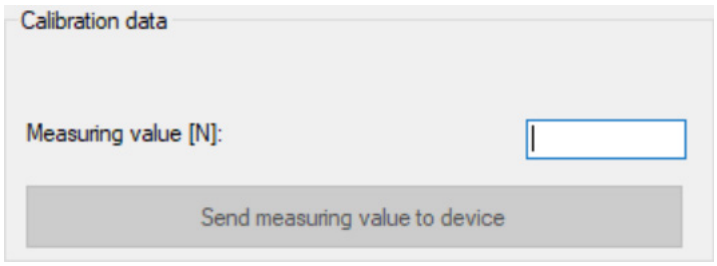
The initial closing force has already been input and doesn't need to be re-entered.

3. Click on the "Start initial calibration" button.



The "Initial calibration" information window opens. This indicates the next steps and contains a counter that displays the number of measurement closures (further information *see Section 7.4.1*).

As soon as the initial closing is complete, the "Initial calibration" window closes automatically.



4. Input the measured value into the "Measured value [N]" field.

The "Send measured value to device" button lights up green.

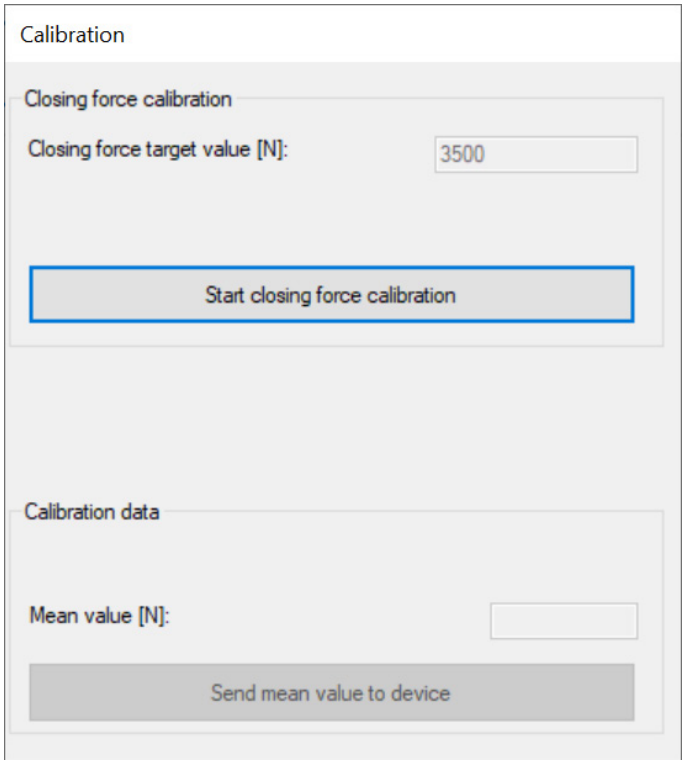
5. Click on the "Send measured value to device" button.

The measured value is acknowledged and sent to the device.

Closing force calibration

NOTICE

- Reset the measuring instrument before starting the closing force calibration.
- If CAL 01 is used, select the "Average value" setting.



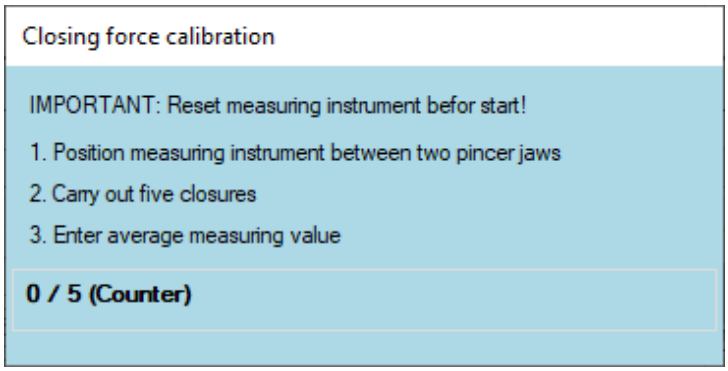
After the measured value of the initial calibration has been sent, the "Calibration / Closing force calibration" window opens.

The closing force target value has already been input and need not be input again.

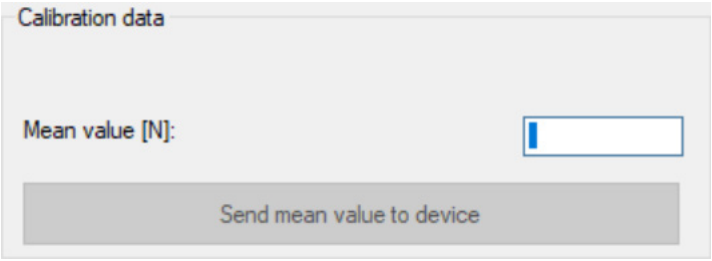
NOTICE

The target closing force is carried over from the "Closing force [N]" input field of the "Closing data" tab (see *chapter 7.3*).

1. Click on the "Start closing force calibration" button.



The button lights up green and the "Closing force calibration" information window opens.
This displays the next steps and contains a counter showing the number of measurement closures.
The counter provides an indication of the number of closures performed during calibration.



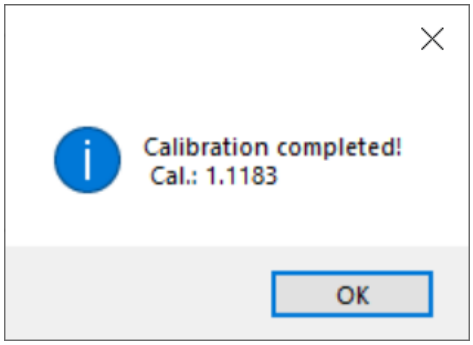
As soon as the 5 closures required to calculate the average have been reached, the "Closing force calibration" window closes automatically.

2. Enter the mean value of the measured values (e.g. from CAL 01) in the "Mean value [N]" field under "Calibration values".

The "Send average value to device" button lights up green.

3. Press the "Send average value to device" button.

The measured value is confirmed and sent to the device.



The "Calibration completed!" window now opens. This displays the calculated correlation factor (Cal.) (ratio between the thrust force of the plunger and the closing force of the pincer jaws) for information purposes

	NOTICE For safety reasons, there is a minimum and maximum calculated correlation factor (Cal.), and an error message appears if it is either not met, or surpassed. Applicable from software version 2.07 in combination with firmware version 6.03 or higher version: The tool is locked for safety reasons. A "Calibration" error is displayed in the device status bar. If the tool is blocked it is not possible to perform a closure, if the START button is pressed the service LED will light up red. If the calibration process is interrupted for any reason and in any way , the tool is also locked. ► Repeat calibration if any of the described events have occurred.

4. Click on the "OK" button.

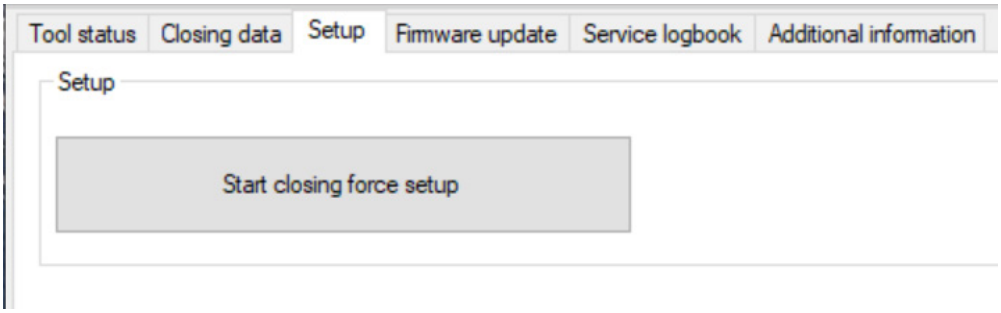
The pincer test is completed and the PC software changes to the "Status" tab start screen see *chapter 7.2*.

5.1.4 Closing force device CC 20

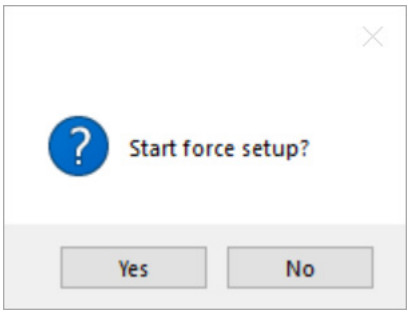
The calibration of the CC 20 for closing an Oetiker MCR (Multi Crimp Ring) is different to the CP 10 and CP 20. During **calibration**, the correlation factor between the closing force and the piston force, which differs from head to head, is not calculated, however, the necessary closing force for a correctly closed MCR is determined. This is why the CC 20 tab is not labelled **calibration**, but rather **setup**. The correlation factor therefore always remains at 1.0 for the CC 20 and cannot be changed.

In principle, closing an MCR using a CC 20 is not a force-priority closing, but a gap priority. The aim is to ensure that the MCR is completely round when closed, regardless of the force. To achieve this, the pincer jaws of the CC 20 pincer heads must be 100% closed. It must be ensured that sufficient power is available. This is ensured by means of a guided process. To determine the force required for your application, proceed as follows:

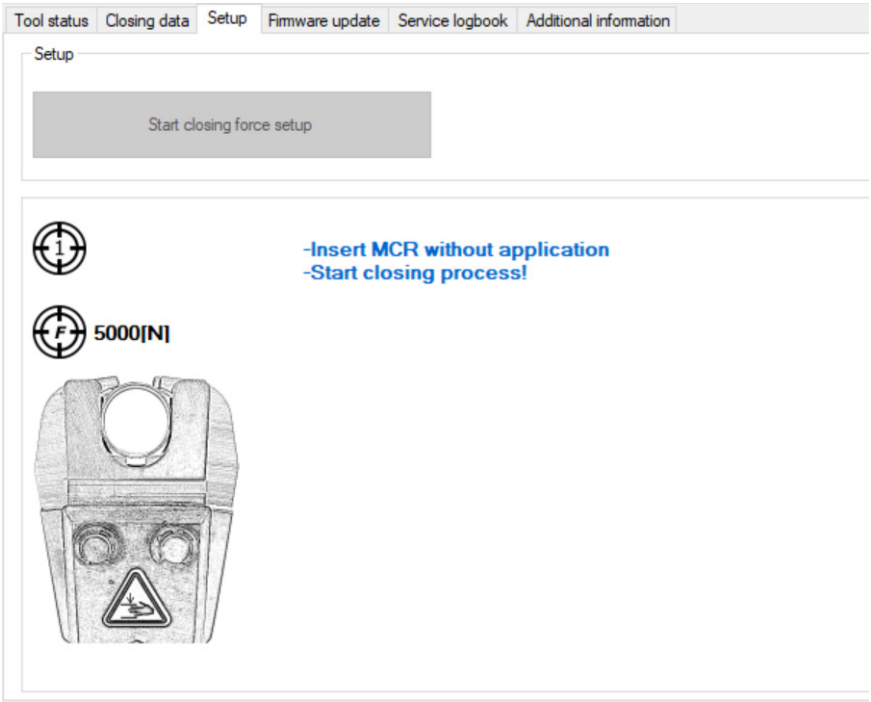
1. Open the "Setup" tab



2. Press the "Start closing force setup" button



3. Confirm with "Yes"
4. Follow the instructions in the SW

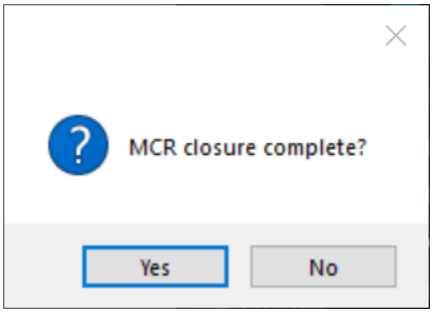


5. Insert MCR without application and perform a complete closing operation. This first closing process always starts with a minimum thrust of 5000 N.

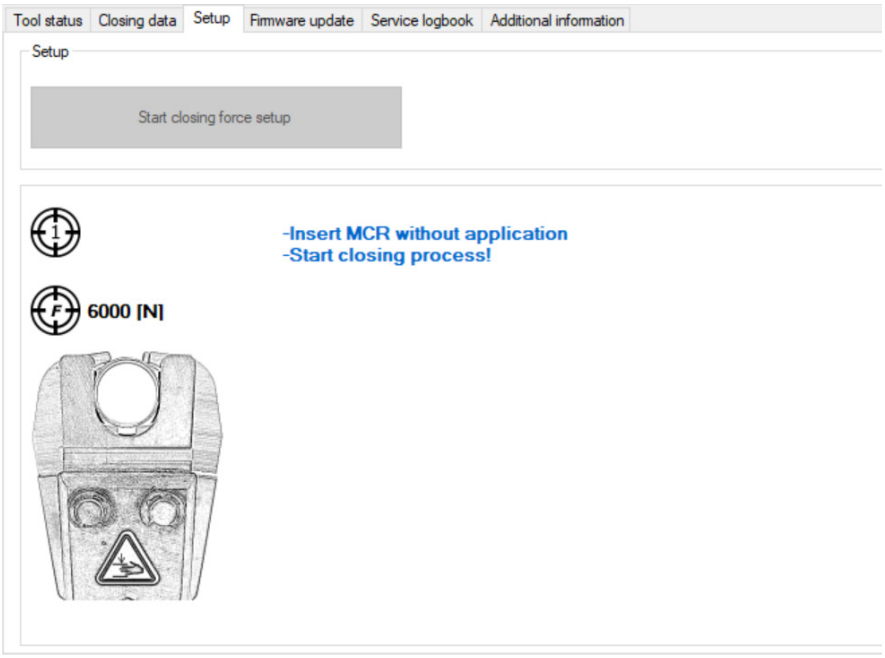
CAUTION

Wear protective equipment!

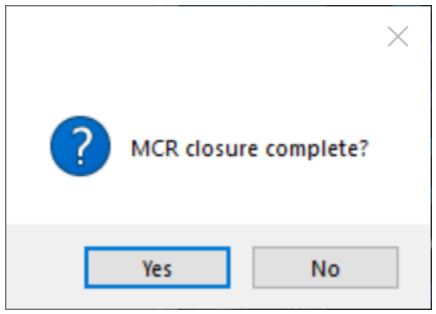
6. Check MCR for roundness, does the ring have the desired final external diameter and is it within ±0.2 mm roundness?
7. Confirm field with "Yes" (MCR is round to within ±0.2 mm of the target diameter?). Or "No" if the MCR is still oval and outside a roundness tolerance of ±0.2 mm.



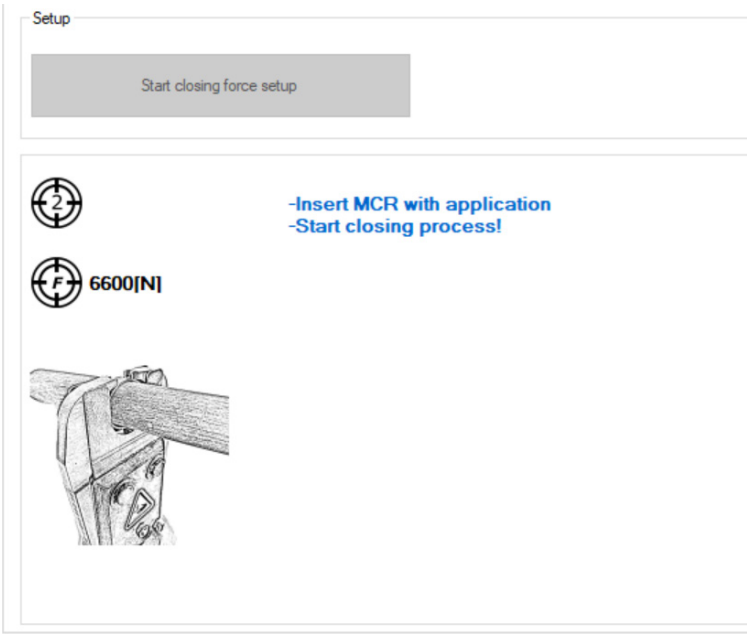
8. "No": Repeat process, thrust force now increases by 1000 N to 6000 N



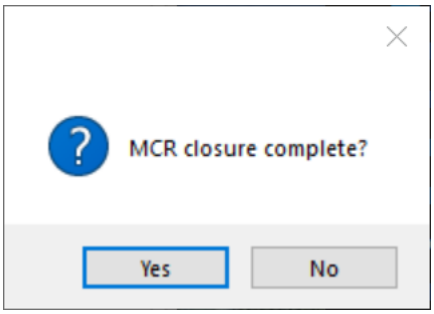
9. Repeat the procedure until MCR closure (MCR roundness) is complete and within an acceptable roundness tolerance of ±0.2 mm
10. Then confirm with "Yes"



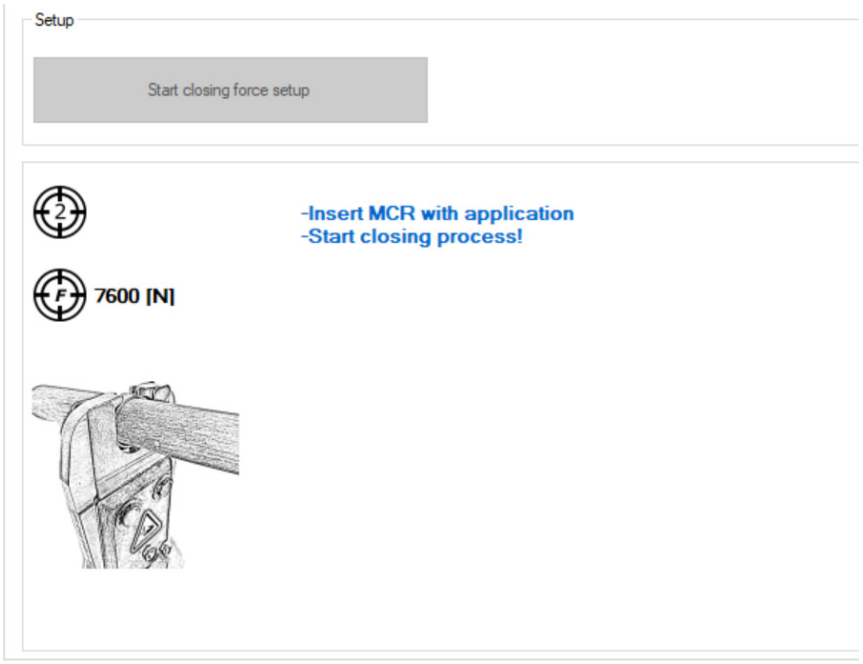
11. Insert MCR with application and perform closing. The thrust force is now increased by 10%.



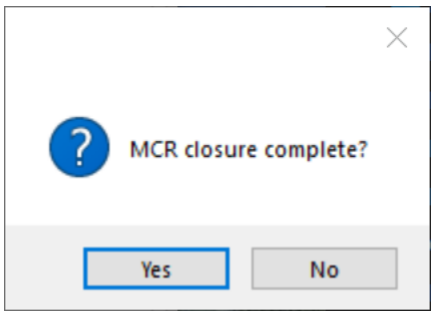
12. Check MCR for roundness, does the ring have the desired final external diameter and is it within ±0.2 mm roundness?
13. Confirm field with "Yes" (MCR is round to within ±0.2 mm of the target diameter?). Or "No" if the MCR is still oval and outside a roundness tolerance of ±0.2 mm:



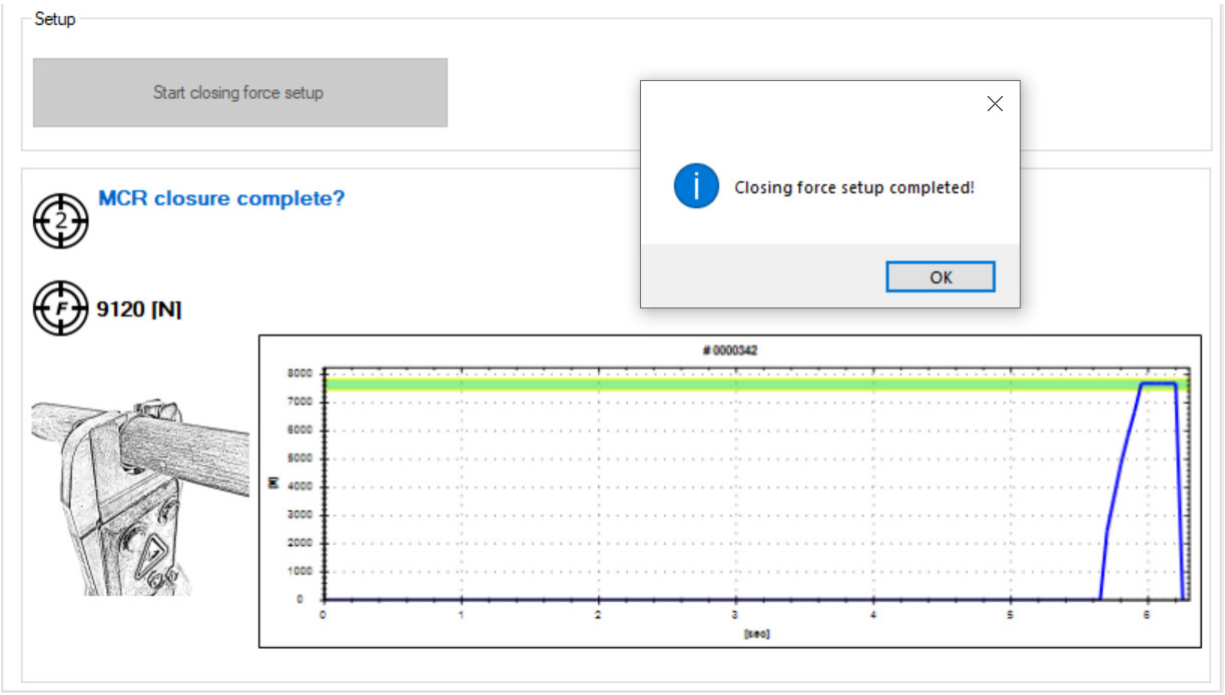
14. "No": Repeat the process, the thrust force now increases step by step by 1000 N:



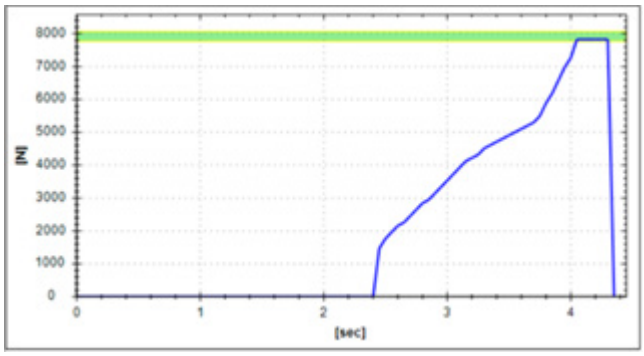
15. Repeat process until MCR closure incl. application (roundness MCR) is complete and within an acceptable roundness tolerance of ±0.2 mm



16. Confirm with "Yes":
17. Thrust force is finally increased by 20% as a reserve and fixed. Closing force setup is now complete.



18. Some applications validate whether roundness, and therefore tightness, is achieved.
19. Checking the force curve:



The force curve when closing with MCR or MCR and application should typically show a vertical force surge at the end. This indicates that the pincer jaws have been fully closed.

	NOTICE
	Applicable from software version 2.07 in combination with firmware version 6.03 or higher version: If the clamping force setup process is interrupted for any reason and in any way, the tool is locked. If the tool is blocked it is not possible to perform a closure, if the START button is pressed the service LED will light up red. A "Setup" error is displayed in the device status bar. ► In this case, repeat the closing force adjustment.

5.2 Working with clamp pincer CP 10 / CP 20 / CC 20

5.2.1 Displaying the battery charge status

The charge status of the battery is indicated by the LED on the battery charger (see also *chapter 8.3*). It can also be read directly off the battery.

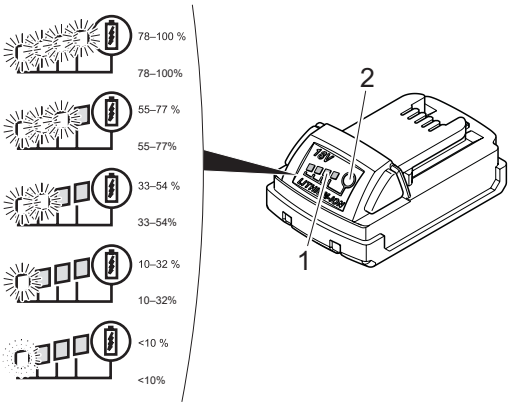


Fig. 9: *Checking the battery charge level*

► Press the button (*Fig. 9*/2).

The number of illuminated LEDs (*Fig. 9*/1) indicates the charge status. A flashing LED indicates less than 10 % charge level.

	NOTICE
	• When the battery is low, the pincer will not perform closures. • This display should be used only to indicate the charge remaining. • The battery can remain in the clamp pincer CP 10 / CP 20 / CC 20 whilst the charge status is being checked. However, to avoid inaccurate results, the CP 10 / CP 20 / CC 20 clamp pincers must be switched off for at least 1 minute before the test.

5.2.2 Charging the battery

NOTICE

Further information about the battery charger can be found in the instruction manual from Techtronic Industries GmbH.

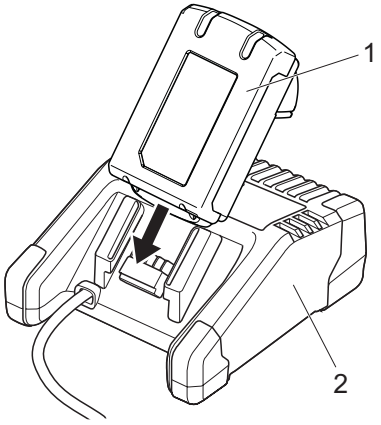


Fig. 10: *Charging the battery*

1. Connect the charger (*Fig. 10*/2) to the power supply.
2. Insert the battery (*Fig. 10*/1) into the charger.
3. Remove the battery (*Fig. 10*/1) from the charger as soon as it has reached the desired charge level.
4. Disconnect the charger (*Fig. 10*/2) from the power supply after charging.

5.2.3 Inserting battery

CAUTION

Risk of injury due to accidentally pressing the START button!

Once the battery has been inserted, the pincer is ready for use. If the START button is pressed (even accidentally) the pincer jaws will close!

► Ensure the START button is not pressed accidentally.

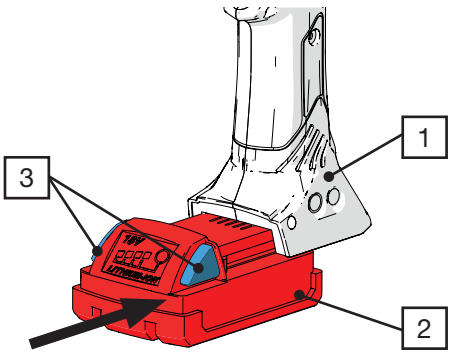


Fig. 11: *Inserting the battery*

► Slide the battery (*Fig. 11*/2) into the CP 10 / CP 20 / CC 20 clamping pincers (*Fig. 11*/1) until it engages securely. The battery is inserted when the buttons (*Fig. 11*/3) move and a clicking sound can be heard.

5.2.4 Aligning the pincer head

The pincer head can be rotated into a position convenient to the user.

WARNING

Risk of injury!

Body parts could be crushed if work with the clamp pincer CP 10 / CP 20 / CC 20 is done improperly.

► Never insert your finger or other part of the body into the clamping area of the pincer head.

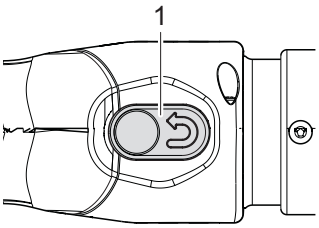


Fig. 12: *Press Reset button*

1. Press the reset button (*Fig. 12*/1).

The pincers are now depressurized.

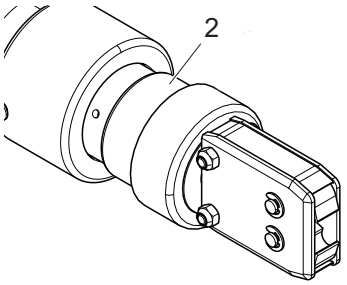


Fig. 13: *Rotate the pincer head*

2. Hold the pincer head in area 2 (*Fig. 13*/2) and turn it to the desired position.

5.2.5 Performing closure

WARNING

Risk of injury!

Body parts could be crushed if work with the clamp pincer CP 10 / CP 20 / CC 20 is done improperly.

► Never insert your finger or other part of the body into the clamping area of the pincer head.

NOTICE

Possible damage to the clamp pincer and faulty clamp closures!

To ensure uniform and reproducible quality of the workflow, the calibration must be executed at least once per shift or once per day. Calibration is also necessary if pincer components are exchanged. OETIKER recommends checking the closing force after calibration as an additional verification measure. It is critical to ensure that clamps are not closed in calibration mode.
The clamp pincer may be used for a maximum of two closures per minute.

NOTICE

If there is no actuation of clamp pincer CP 10 / CP 20 / CC 20 for a certain period of time, it switches to sleep mode.

► Press the START button again.

Clamp pincer CP 10 / CP 20 / CC 20 is ready again.

The following description serves as an example for ear clamps. You can find more detailed information on OETIKER products from your OETIKER contact person.

Requirements:

✓ Closing force and closing force holding time have been set using the PC software and uploaded to the clamp pincer.

✓ The clamp pincer has been calibrated.

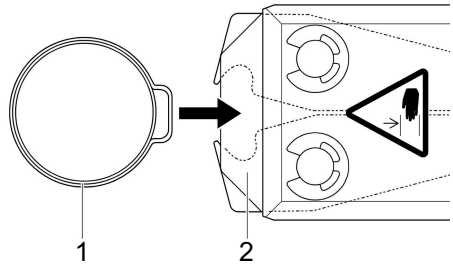


Fig. 14: *Insert clamp*

1. Insert the ear of the OETIKER clamp (*Fig. 14*/1) into the clamping area of the pincer head (*Fig. 14*/2).

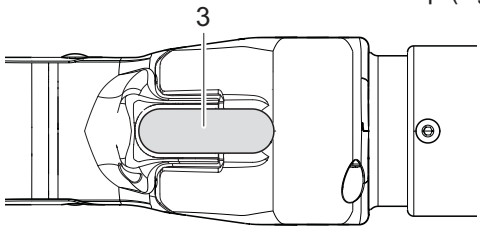


Fig. 15: *Start closing*

2. Press the START button (*Fig. 15*/3) and hold it pressed down.

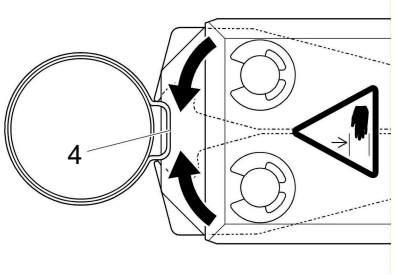


Fig. 16: *The clamp is closed*

The closing process is triggered and the clamp (*Fig. 16*/4) is closed.

On reaching predefined parameter values the pincer jaws are opened.

3. Release the START button.

	NOTICE Closing is performed using the closing data loaded by the PC software.

A further closing operation can now be performed.

Canceling the closing process

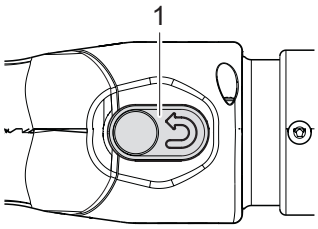


Fig. 17: *Reset button*

1. Release the START button (*Fig. 15*/3).
2. Press firmly on the reset button (*Fig. 17*/1).

When the Reset button is pressed, the pincer jaws return to their home position. The pincer head is now depressurized.

	NOTICE If this button is pressed in the middle of a closing operation, this results in incorrect clamping. The reset button is only intended to be used in an emergency or to deliberately cancel the closing process.

5.2.6 Decommissioning clamp pincer CP 10 / CP 20 / CC 20

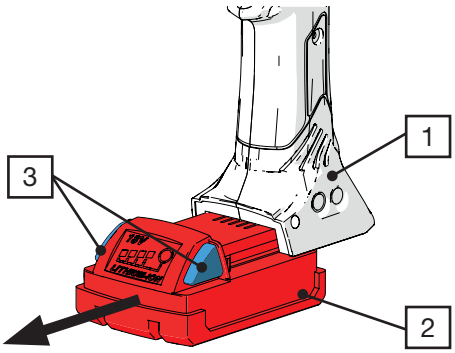


Fig. 18: *Removing the battery*

- ► Press the buttons (*Fig. 18*/3) and remove the battery (*Fig. 18*/2) from the clamp pincer CP 10 / CP 20 / CC 20 (*Fig. 18*/1).
- ► If necessary, clean any debris from the clamp pincer CP 10 / CP 20 / CC 20 after use and store in the case.

5.3 Documenting the process data

NOTICE

Requirements:

✓ Clamp pincer CP 10 / CP 20 / CC 20 must be connected to the PC via the USB cable.

✓ The status tab is active (see *Fig. 39*).

5.3.1 Creating single report

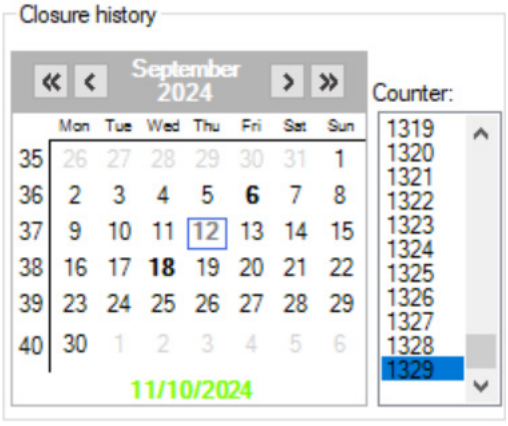


Fig. 19: *Counter reading*

1. Select the desired day in the calendar in the Status menu.
2. Select the desired counter reading number in the "Counter" list.
3. Click on the "Individual report" button. Single report

The serial number, the process data and the closing force diagram for the closing operation are shown in the layout.

NOTICE

As of software version 3.0.0, closures that contain an error are marked in red. Closures that were performed during calibration or closing force setup are shown in purple. Depending on the date selected, the closures for that day are now displayed. Days during which closures were performed are shown bold in the calendar.

Printing a single report

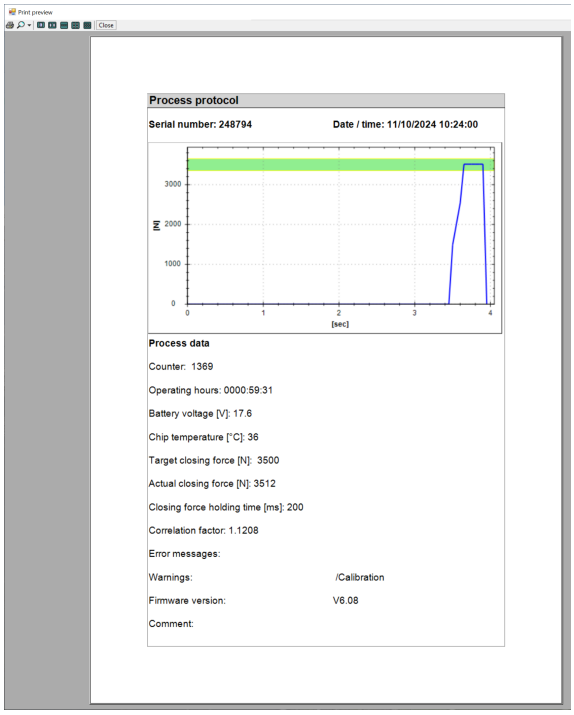


Fig. 20: *Single report*

► Click on the  icon in the menu bar.

The "Print" menu window opens and the preview can be printed.

5.3.2 Creating multiple reports

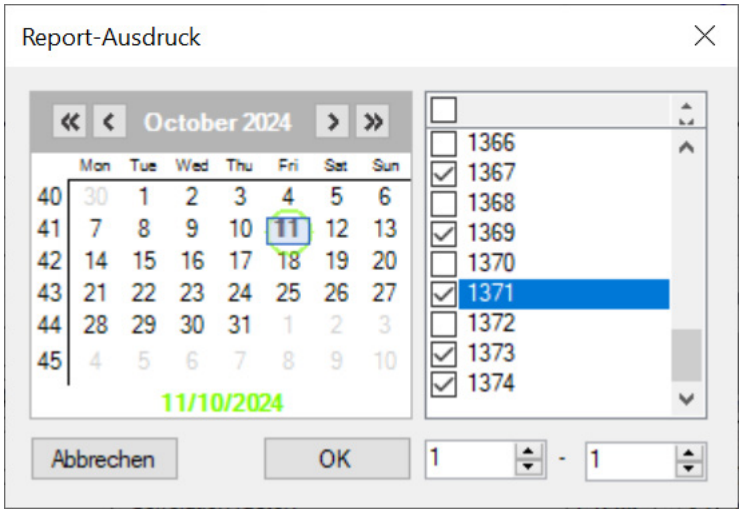
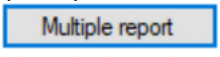


Fig. 21: *Calendar and Counter reading*

1. Click on the "Multiple report" button in the Status menu or click on "Output report" in the File menu. 

2. Select the desired date in the calendar.
3. Select the desired counters in the "Counter" list
4. If necessary, select additional dates and repeat the process.
5. If you wish, you can check the box at the top to select all closures for the selected day.

6. When the selection is complete, click on "OK".

The selected closing operations are displayed with the process data, warning and error messages, as well as the closing force diagram in the "Side view" window.

NOTICE

Depending on the number of selected closures, this procedure may take several minutes.

Printing multiple reports

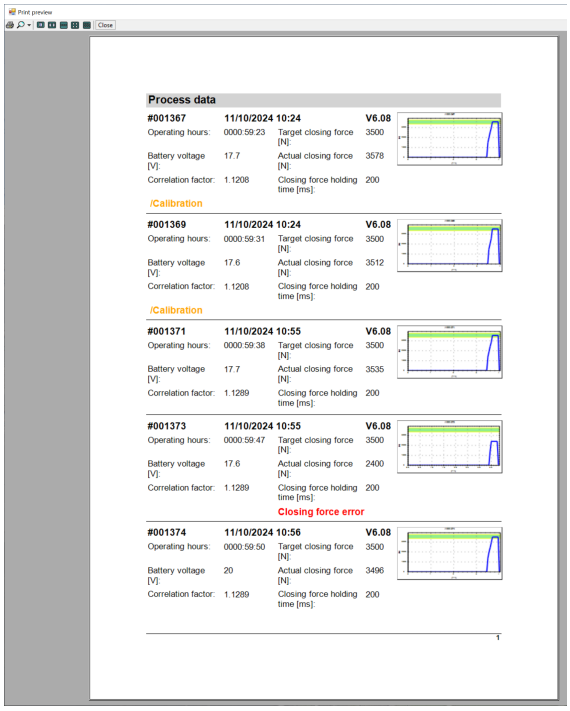


Fig. 22: *Multiple reports*

► Click on the icon in the menu bar.

The "Print" menu window opens and the preview can be printed.

5.3.3 Generate a report as a CSV file

Single reports or multiple reports can be exported as CSV files.

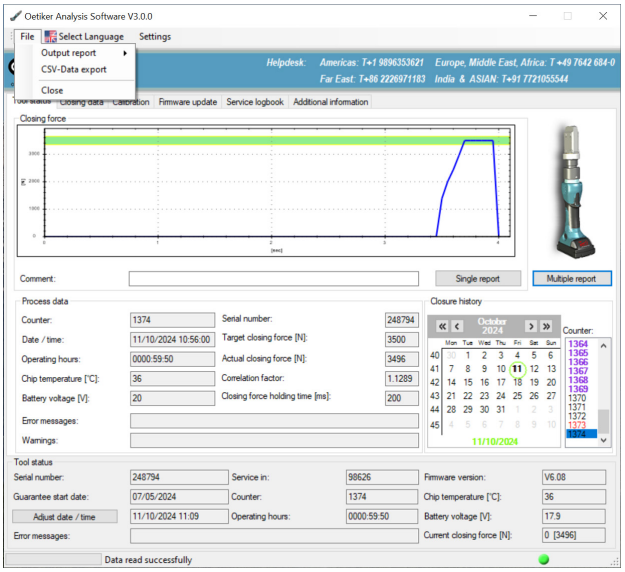


Fig. 23: *Report as CSV file*

1. Click on "Export CSV data" in the file menu.
2. Select the desired date in the calendar.
3. Select the desired counters in the "Counter" list.
4. If necessary, select additional dates and repeat the process.
5. If you wish, you can use the "All" button to select all closures for the selected day.
6. Select the storage location.

The data are available for further processing. The contain real data, without any graphics.

6 Maintenance and repair

OETIKER spare parts

A clear order is essential to ensure the fast and correct delivery of spare parts. It must include the following information:

- Product name, software version (see *chapter 7.1*)
- Type designation and item number (see technical data sheet)
- Serial number (engraved on the clamp pincer)
- Name of spare part and number of units required
- Shipping method
- Full address

6.1 General safety instructions on maintenance and repair work

- Clamp pincer CP 10 / CP 20 / CC 20 is designed for continuous use at a closing frequency of two closures per minute. After 100,000 closures, scheduled service must be performed. Servicing of the pincer body must be performed only by OETIKER.
- Cleaning, lubrication and maintenance work should only be carried out by authorized technical personnel in accordance with the enclosed maintenance instructions and local safety regulations. Failure to observe these instructions and regulations may lead to personal injury and property damage.
- For maintenance and repair of pincer heads, use only OETIKER original spare parts.
- Following initial commissioning, clamp pincer CP 10 / CP 20 / CC 20 should be cleaned daily or weekly, depending on level of cleanliness or debris buildup.
- Never immerse clamp pincer CP 10 / CP 20 / CC 20 in water or other liquids.
- There is no service work that the customer can or should perform on the clamp pincer. Any attempt to perform service work will invalidate the warranty.
- In the event of oil loss, send cordless clamp pincer CP 10 / CP 20 / CC 20 to your regional OETIKER service center.

6.2 Maintenance

6.2.1 Before maintenance work

WARNING

Risk of crushing by the clamp pincer!

Clamp pincer CP 10 / CP 20 / CC 20 is only completely disconnected from power when the battery is removed.

► Before performing maintenance work, remove the battery of clamp pincer CP 10 / CP 20 / CC 20.

6.2.2 After maintenance work

► Check all screw connections.
► Reattach all safety equipment immediately.
► Check all functions of clamp pincer CP 10 / CP 20 / CC 20.
► Calibrate the CP 10 / CP 20 clamp pincer.
► Set up the CC 20 clamping pincer again.

6.2.3 Weekly maintenance work

Pincer head

The rollers, plunger and pin on the pincer head are subject to mechanical loading. They must be lubricated at least once a week when clamp pincer CP 10 / CP 20 / CC 20 is in regular use.

Recommended lubricant:

Type	Type	Manufacturer	OETIKER Part no.
Grease	RENOLIT LX 2	FUCHS SCHMIERSTOFFE GMbH Friesenheimer Strasse 19 D-68169 Mannheim Phone +49 621 3701-0 Fax +49 (621) 3701-7000	08901490

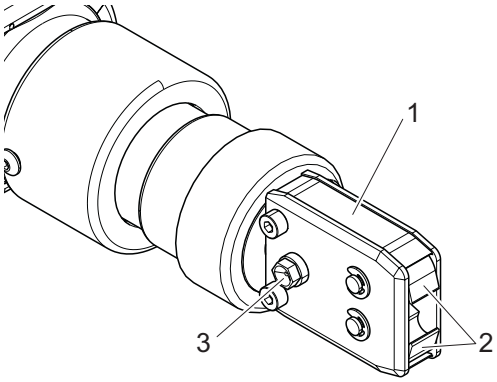


Fig. 24: *Lubricating the pincer head*

1. Remove the battery.
2. Lubricate the pincer head (*Fig. 24*/1) via the grease nipple (*Fig. 24*/3) using a grease gun with the special RENOLIT LX 2 lubricant.
3. Check the pincer jaws (*Fig. 24*/2) for wear and breakage at the clamping points and replace them if necessary (for item no., see tool catalog).
4. Check the clamp pincer for mechanical damage.
5. Replace any defective parts.

6.2.4 Preventive maintenance work

For preventive maintenance, OETIKER recommends sending the clamp to OETIKER once a year and when requested by the maintenance counter, whichever comes first.

NOTICE

During any maintenance work, the button cell of the pincer is replaced, among other things!

This button cell updates the date and time. If this button cell is discharged, the date is automatically reset. This results in the possible mixing of locking data and storage under the wrong tag!

6.2.5 Repair

WARNING

Risk of crushing by the clamp pincer!

Clamp pincer CP 10 / CP 20 / CC 20 is only completely disconnected from power when the battery is removed.

► Before performing maintenance work, remove the battery of clamp pincer CP 10 / CP 20 / CC 20.

6.2.6 Replacing pincer jaws

NOTICE

Replacement pincer jaws are available fully assembled in the form of replacement jaw kit.
It must include the following information:

Product name, article number, shipping method, full address.

Changing the pincer jaws

There is a number engraved on the pincer jaws. You can use this number to order a pincer jaw replacement kit (see also the tools catalog). The following description serves as an example for pincer heads for ear clamps.

NOTICE

Damage to the clamp pincer by fitting unauthorized parts!

► Only use original OETIKER pincer jaws. Only fit the designated pincer jaw type in the pincer head.

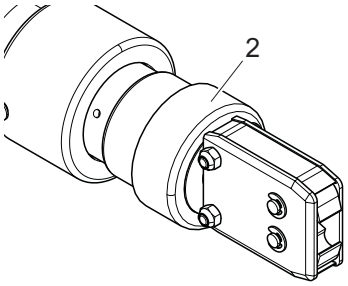


Fig. 25: *Unfastening the pincer head*

1. Remove the battery.
2. Unscrew the union nut (*Fig. 25*/2).

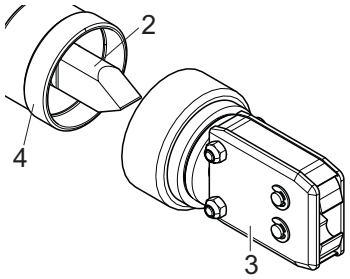


Fig. 26: *Pulling off the pincer head*

3. Pull the pincer head (*Fig. 26*/3) off the clamp pincer (*Fig. 26*/4). The plunger (*Fig. 26*/2) remains in the clamp pincer (*Fig. 26*/4).

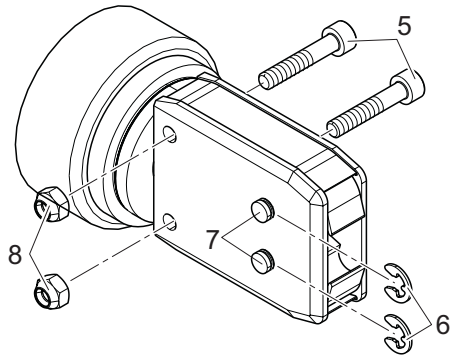


Fig. 27: *Dismantling the pincer head*

4. Remove the two lock washers (*Fig. 27*/6) from the pincer head (*Fig. 26*/3). Do not push the pins (*Fig. 27*/7) back!
5. Unscrew both hexagon nuts (*Fig. 27*/8) from the hexagon bolts (*Fig. 27*/5).

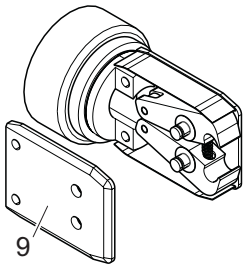


Fig. 28: *Removing the side plate*

6. Remove the side plate (*Fig. 28*/9).

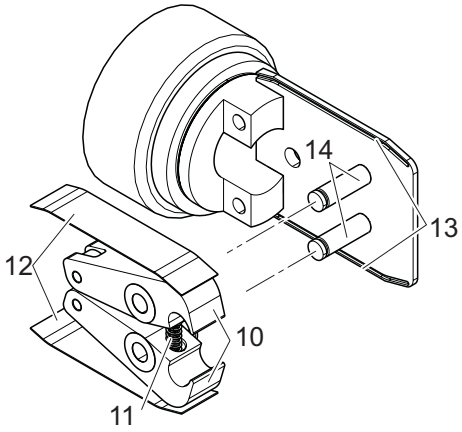


Fig. 29: *Fitting the pincer jaws*

7. Remove the pressure spring (*Fig. 29*/11), the cover plate (*Fig. 29*/12) and the pincer jaws (*Fig. 29*/10).

8. Lubricate the replacement jaws (*Fig. 29*/10) and the compression spring (*Fig. 29*/11) from the jaw replacement kit as well as the pins (*Fig. 29*/14) with special RENOLIT LX 2 lubricant and insert the new jaws and spring.
9. Reassemble everything in reverse order with new lock washers (*Fig. 27*/6).
10. Check the mobility of the pincer jaws (*Fig. 29*/10).
11. Screw the pincer head on to the clamp pincer and, holding the adapter, tighten the union nut.

The plunger (*Fig. 26*/2) must be positioned between the two pincer jaws (*Fig. 29*/10).

6.3 Replacing the pincer head

NOTICE

- Each type of pliers can accommodate different pincer heads.
- The pincer heads CP 10 / CP 20 / CC 20 can not be exchanged between models.
- The wedge is always part of the pincer head and must always be replaced at the same time!

Scope of delivery of a pincer head set

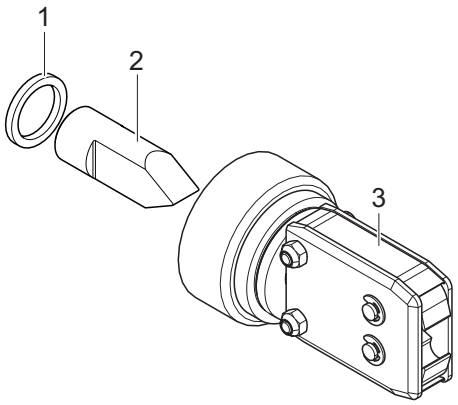


Fig. 30: *Pincer head set*

- Spacer ring (*Fig. 30*/1)
- Wedge (*Fig. 30*/2)
- Pincer head (*Fig. 30*/3)

6.3.1 Preset closing force

Before the wedge can be mounted on the wedge holder or removed from the wedge holder, the closing force must be adjusted as follows to prevent it from turning:

- **CP 10 = 4000 N**
- **CP 20 = 8000 N**
- **CC 20 = 8000 N**

1. Start the laptop / PC and start the analysis software.
2. Connect the USB connection cable to the laptop / PC and CP / CC pincers, activate the pincers by pressing the start button.
3. Call up the "Closing data" tab in the analysis software.
4. Set the closing force to the values specified above (e.g. CP 10 -> 4000 N)

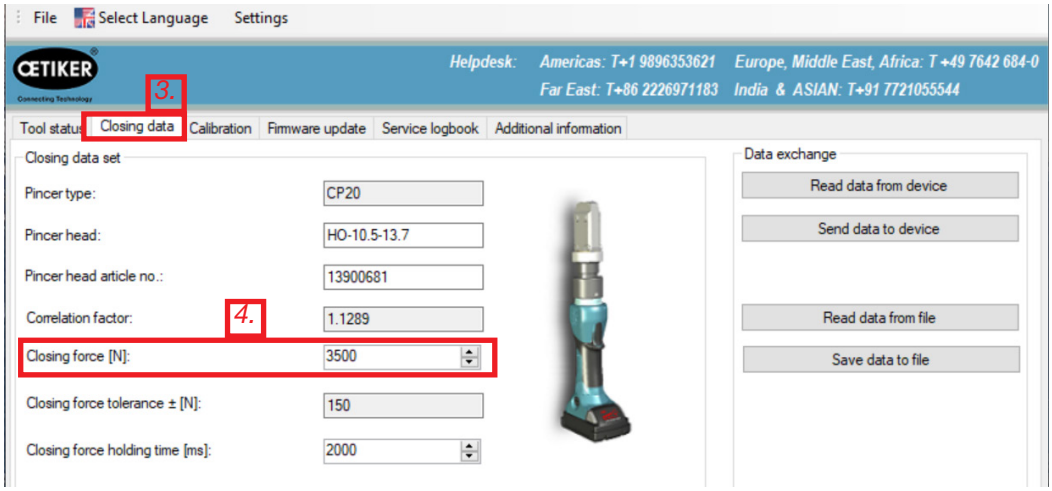


Fig. 31: *Preset closing force*

6.3.2 Transfer closing force data

1. Click on the "Send data to device" button.
2. Confirm the prompt pop-up with the "OK" button.
3. **IMPORTANT: Do not start the calibration (ignore)**

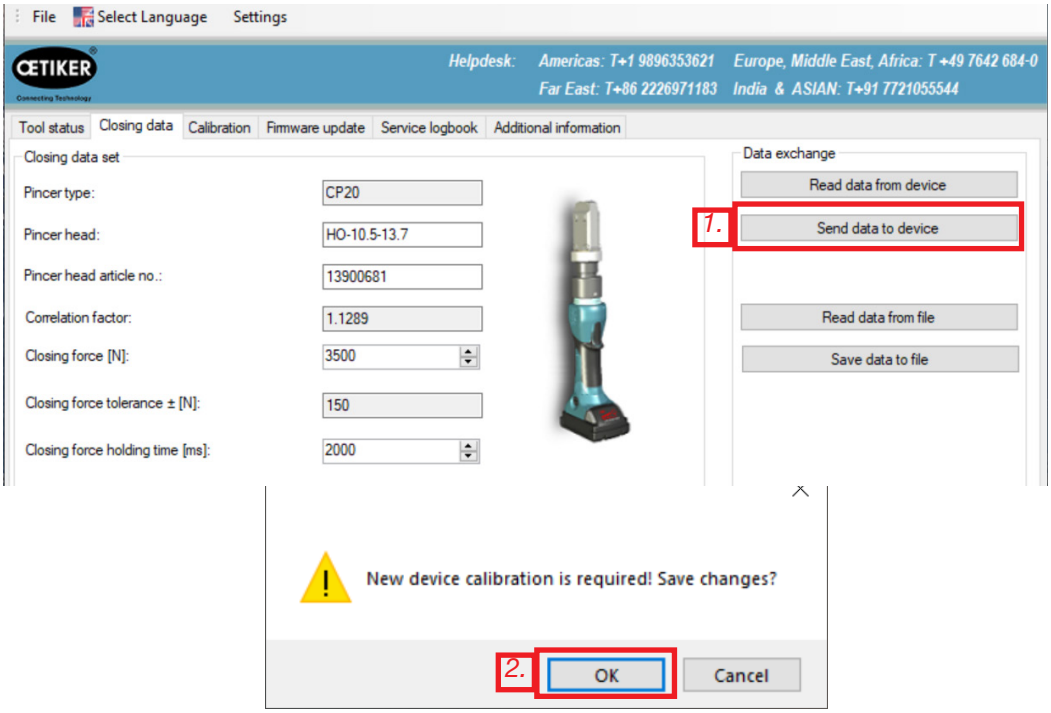


Fig. 32: *Transfer closing force data*

6.3.3 Extend piston

1. Disconnect the device from the USB connection cable.
2. Press the start button to extend the piston with the wedge holder and threaded rod.
3. To build up maximum pressure, briefly press the start button several times until the piston has built up enough pressure that it can no longer rotate.

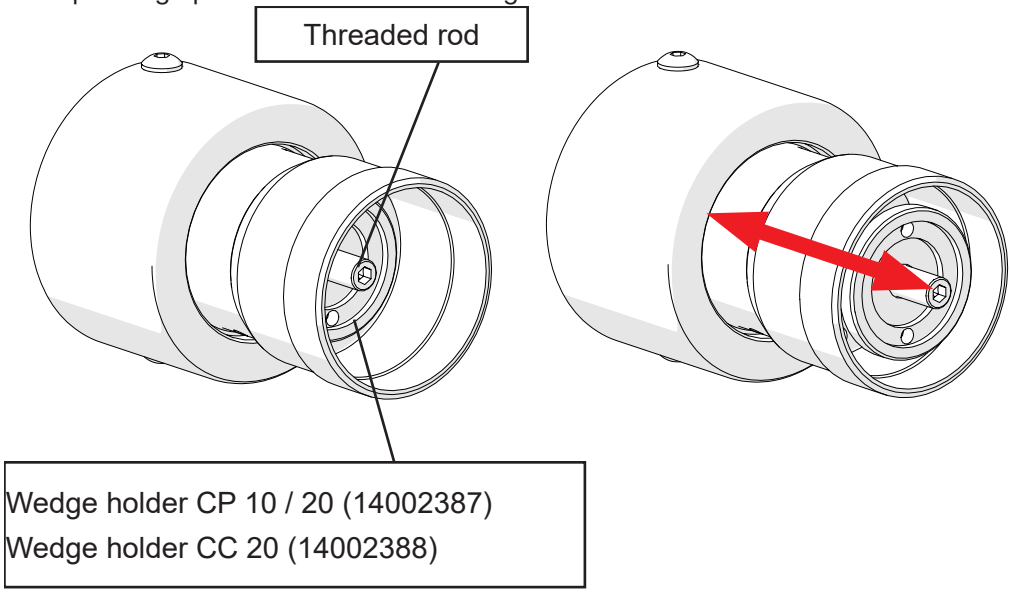


Fig. 33: *Threaded rod*

6.3.4 Loosening the existing wedge

1. Loosen the existing wedge using a standard open-end wrench (6; 8; 11; 12 and 15 mm).
2. Store the wedge and head together, protected against dirt and dust.

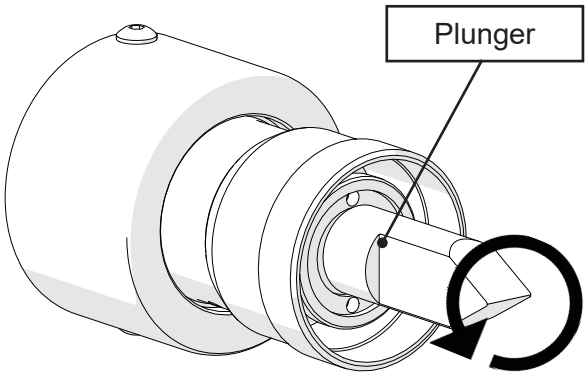


Fig. 34: *Release wedge*

6.3.5 Tightening the wedge

1. Apply Loctite 243 medium-strength (08901482) to the threaded rod and in the thread in the wedge.
2. Screw the wedge onto the threaded rod by hand.
3. Tighten the wedge using a standard open-end wrench (6; 8; 11; 12 and 15 mm) and a suitable torque wrench.

	CAUTION
	Torque = 7 Nm!

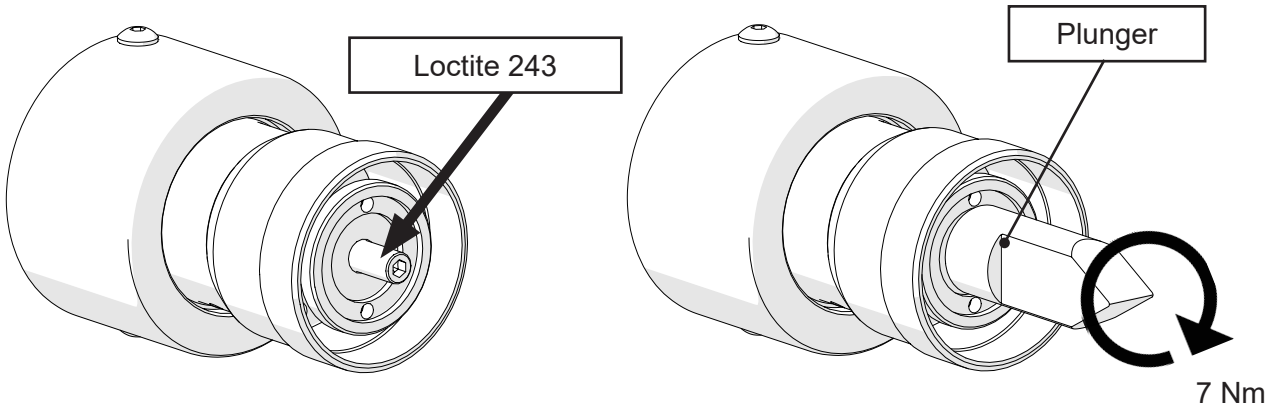


Fig. 35: *Tighten the wedge*

6.3.6 Screwing on the pincer head

NOTICE

The piston must be retracted before the pincer head can be unscrewed!
To do this, the reset button must be pressed!

1. Slide the spacer ring over the wedge
2. Fit the pincer head and tighten firmly by hand.

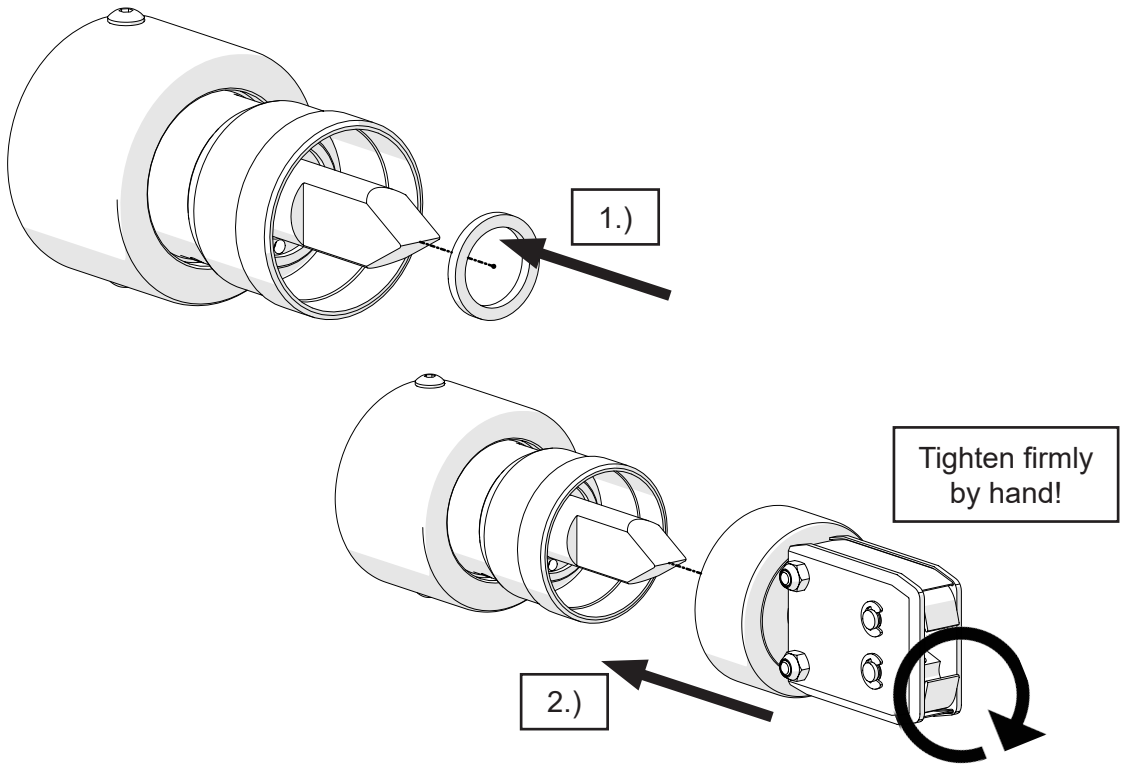


Fig. 36: *Screw on the pincer head*

6.3.7 Resetting the closing force

1. Reconnect the device to the USB connection cable.
2. In the analysis software, select the "Closing data" tab again.
3. Reset "Closing force" to suit the appropriate pincer (e.g. CP 10 = 800 N)
   CP 10 = 800 N
   CP 20 = 3500 N
   CC 20 = 3500 N
4. Click on the "Send data to device" button.
5. Confirm the prompt pop-up with the "OK" button.
6. Perform calibration and closing force adjustment for newly fitted head (*see Section 5.1.3* and *see Section 5.1.4*).

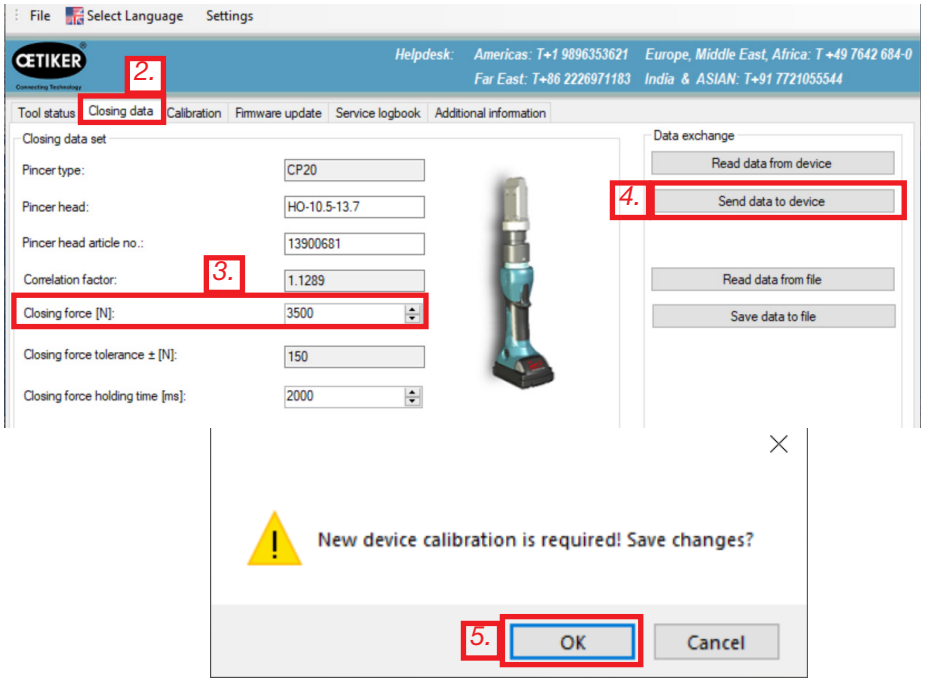


Fig. 37: *Reset closing force*

6.4 Sending the unit back

For warranty claims and commissioned repairs, it is a requirement that you fill out the return form for power tools - please go to: https://www.oetiker.com/de-de/powertoolreturn and follow the instructions there.

OETIKER recommends returning the device in its original packaging.

If this is not possible, the appliance must be packed in equivalent packaging.

If the appliance is damaged due to defective packaging, the customer shall bear the costs, irrespective of any justified warranty claims and commissioned repairs.

7 Description of PC software

7.1 Structure of the PC software

Each tab shows the "Device status" area and the status of data transmission and connection to the PC.

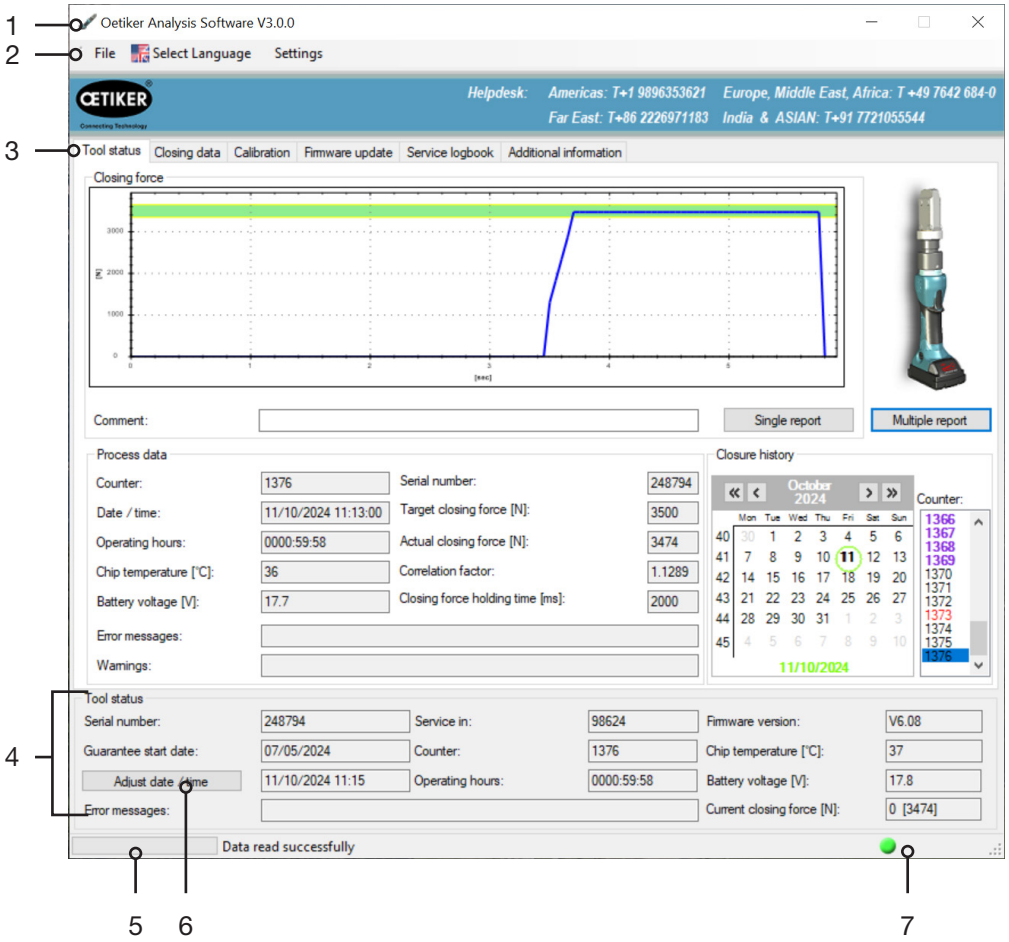


Fig. 38: *Structure of the PC software*

Item	Designation	Description
1	Software version	PC software version in use
2	Menu bar	• File – Export closing data reports – End PC software • Select Language
3	Tabs	See *chapter 7.2* to *chapter 7.7*.
4	Device status	Status information about the device currently connected.
5	Data transfer	Information on data transfer between the device and PC software
6	Adjust Date/Time	For correcting the date/time. The date and time of the computer are loaded into the window beside the button
7	Traffic light symbol	Status of the connection to the device; • Green: Connection active

7.2 Status menu

- Display of the closing force curve (progression of the closing force over time) of the most recent closure or any selected closure.
- Display of the process data for the most recent closure or any selected closure.

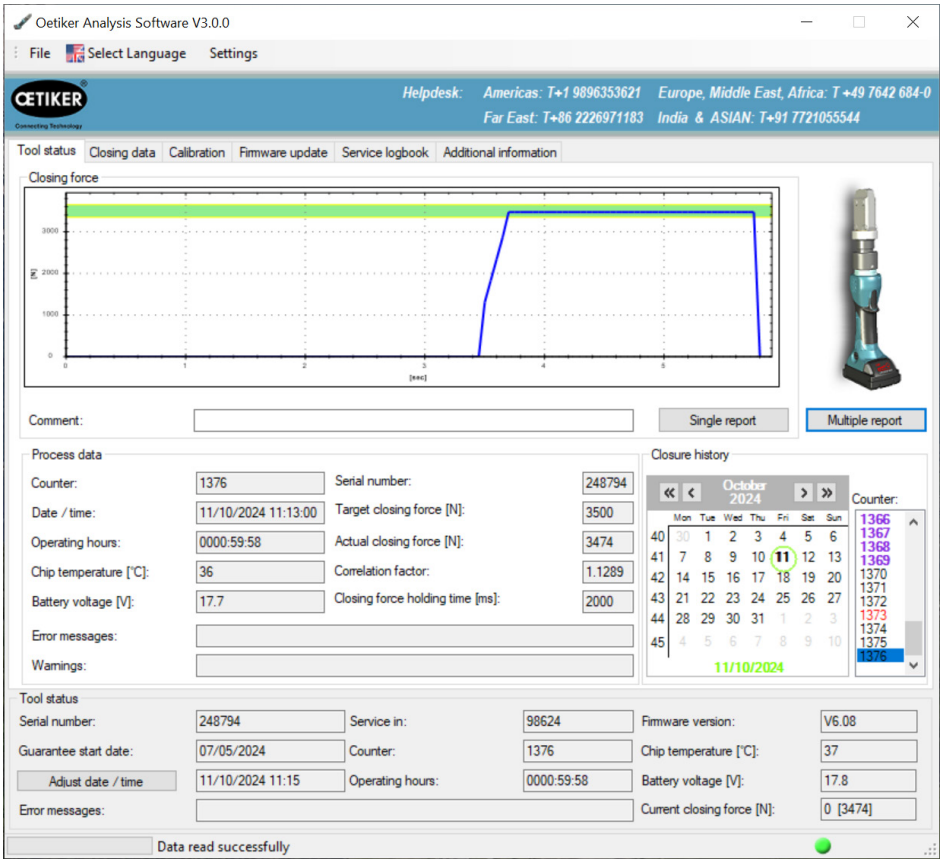


Fig. 39: *Status menu*

Input field/Display field / Option field	Description
Closing force	The graphic displays the progression of the closing force over time for the selected closing operation. When closing has been performed correctly, the summit of the curve must lie within the green shaded area. If this is not the case, please contact your Oetiker service partner immediately.
Comment	For input of user-defined texts (maximum 10 lines). The comments refer to the selected closing operation and are included in the single report for that closure, but not in the multiple report (see below for an explanation). The text is not saved in the device.
Single report / Multiple report	The closing force diagram for a closing process can be called up as a report together with other process data using the "Single report" (documentation of a single closing process) or "Multiple report" (collective documentation of several closing processes) buttons, but with reduced information regarding the process data. (See *chapter 5.3*).
Process data	Shows the process data saved in the device for each closure. These data are used when creating the "Single report". The process data displayed relate to the selected closure (counter).

Input field/Display field / Option field	Description
Loading closures from the device	The calendar is used to select the process data for closures saved in the device. The closures are numbered sequentially. The numbers can be viewed in the "Counter" window. From software version 3.0.0, closures that contain an error are highlighted in red. Closures that were performed during calibration or closing force setup are shown in purple. Depending on the date selected, the closures for that day are now displayed. Days during which closures were performed are shown bold in the calendar.

7.3 Closing data menu

This menu allows the target values for the closing force and holding time-closing force to be input. The image for the clamp pincer represents the device type actually connected.

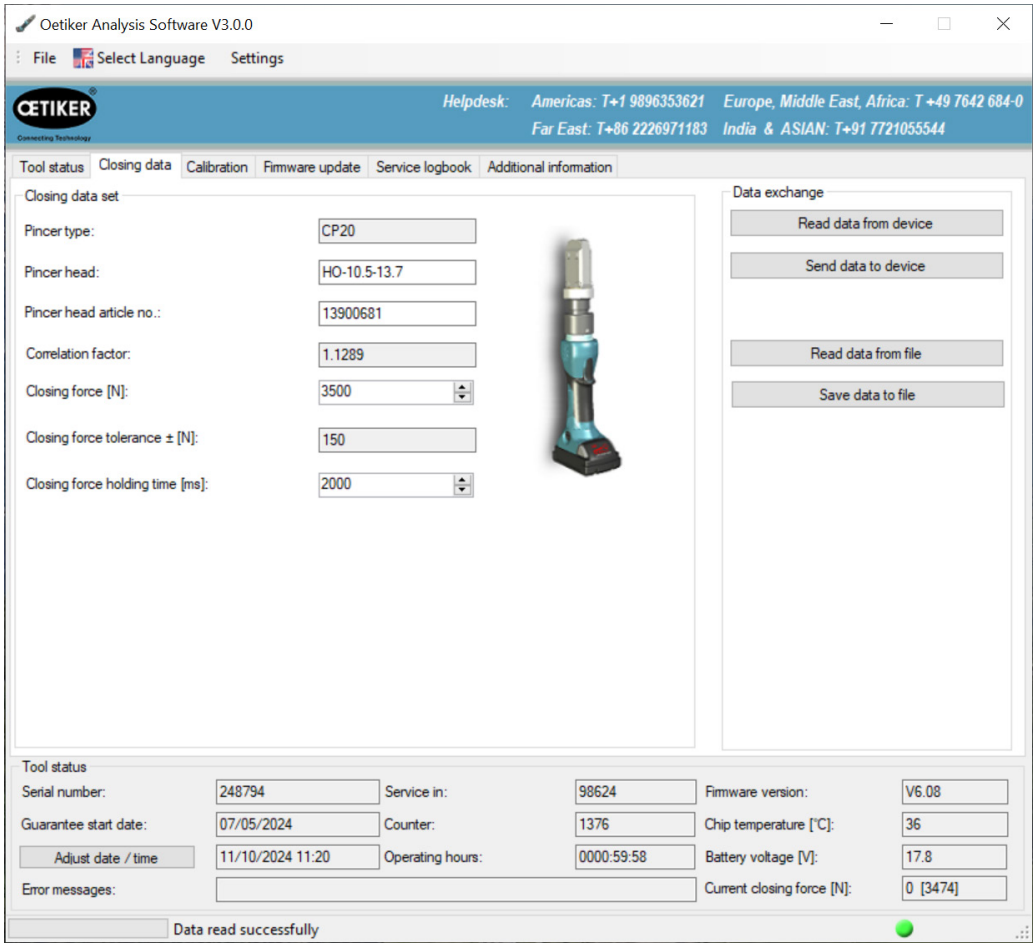


Fig. 40: *Closing data menu*

Input field/Display field / Option field	Description
Closing data set	Entry of the target values for the closure force and closure force holding time
• Pincer type	Displays the designation of the pincer actually connected
• Pincer head	Enter the designation of the pincer head (max. 18 characters)
• Pincer head item no.	Enter the pincer head item number

Input field/Display field / Option field	Description
• Correlation factor	The correlation factor (ratio between the thrust force of the plunger o the closing force of the pincer jaws) is automatically calculated and displayed here during the calibration procedure.
• Closing force [N]	Enter the closing force. The input value for the closing force must be within the closing force range for the device. The closing force range is determined by the pincer head attached to the device. The closing force ranges for the clamp pincers are determined as follows: • CP 10 = Closing force min. 800 N up to max. 4,500 N • CP 20 = Closing force min. 3,500 N up to max. 10,000 N • CC 20 = Closing force min. 3,500 N up to max. 20,000 N ***NOTICE*** When a new closing force is input, these data must be loaded to the device (see the "Data exchange" area) in order for the new value to take effect in the device. Please refer to the product data sheet for the Oetiker clamp or contact the Oetiker Service Center for the correct value for closing.
• Closing force tolerance ± [N]	Factory set values for the closing force tolerance are selected and displayed according to the entered closing force and pincer type.
• Closing force holding time [ms]	The closing force holding time is freely selectable in the range of min. 200 ms to max. 2000 ms. The pincer jaws open at expiry of the specified holding time. Please refer to the product data sheet for the Oetiker clamp or contact the Oetiker Service Center for the correct value for closing. ***NOTICE*** When a new closing force holding time is input, these data must be loaded to the device (see the "Data exchange" area) in order for the new value to take effect in the device.
• Data exchange	The buttons for this area relate to data communications between the software, device and data storage medium (e.g. PC)
• Reading data from device	The stored and active closing data in the clamp pincer are loaded to the "closing data set" area of the PC software.
• Sending data to device	The closing data shown in the "Closing data set" area of the PC software are sent to the device and saved there. ***NOTICE*** If a new closing force setpoint has been loaded, a new calibration / closing force setup is automatically displayed. For instructions on calibration/closing force setup, see *chapters 5.1.3 and Section 5.1.4*.
• Loading data from file	A previously saved closing data set is loaded from a file in the "Closing data set" area into the PC software.
• Saving data in file	The closing data in the "Closing data set" area of the PC software are saved into a file.

7.4 Calibration / Closing force setup menu

7.4.1 Calibration menu

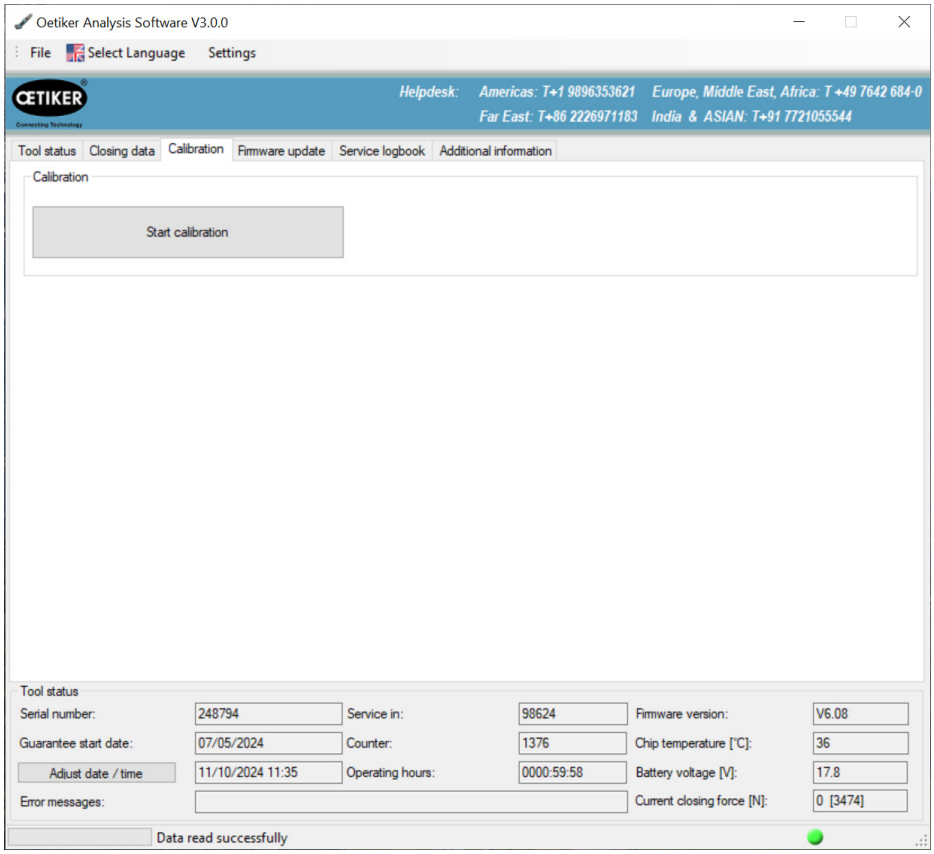


Fig. 41: *Calibration menu*

Calibration of the CP 10 / CP 20 clamp pincer is activated in the Calibration menu.

If the device is modified (for instance by attaching a new pincer head – even if the article number is the same) or if a new target value for the closing force is input, the pincer must be checked.

NOTICE

Possible damage to the clamp pincer and faulty clamp closures!

To ensure uniform and reproducible quality of the workflow, the pincer calibration must be executed at least once per shift or once per day. Calibration is also necessary if pincer components are exchanged. OETIKER recommends checking the closing force after calibration as an additional verification measure. It is critical to ensure that clamps are not closed in calibration mode.

Calibration is carried out in two sub-processes: Initial calibration and closing force calibration (see also *chapter 5.1.3*).

Initial calibration

Initial calibration is performed at a low initial closing force, so that if the target values deviate grossly from suitable values there is no risk of damage to the pincer elements or of injury to the user.

Only one measured closure is performed during the course of the initial calibration.

The initial calibration closing force for the various devices is factory-set as follows:

- CP 10 = Closing force 1000 N
- CP 20 = Closing force 3500 N

Closing force calibration

Closing force calibration is performed with the target value for the closing force, so as to achieve the highest accuracy by the pincer system.

Five measured closures are performed during the course of the closing force calibration.
An average value is calculated from the results of these five measurements, which is loaded onto the device and used to calculate the correlation factor.

7.4.2 Setup menu

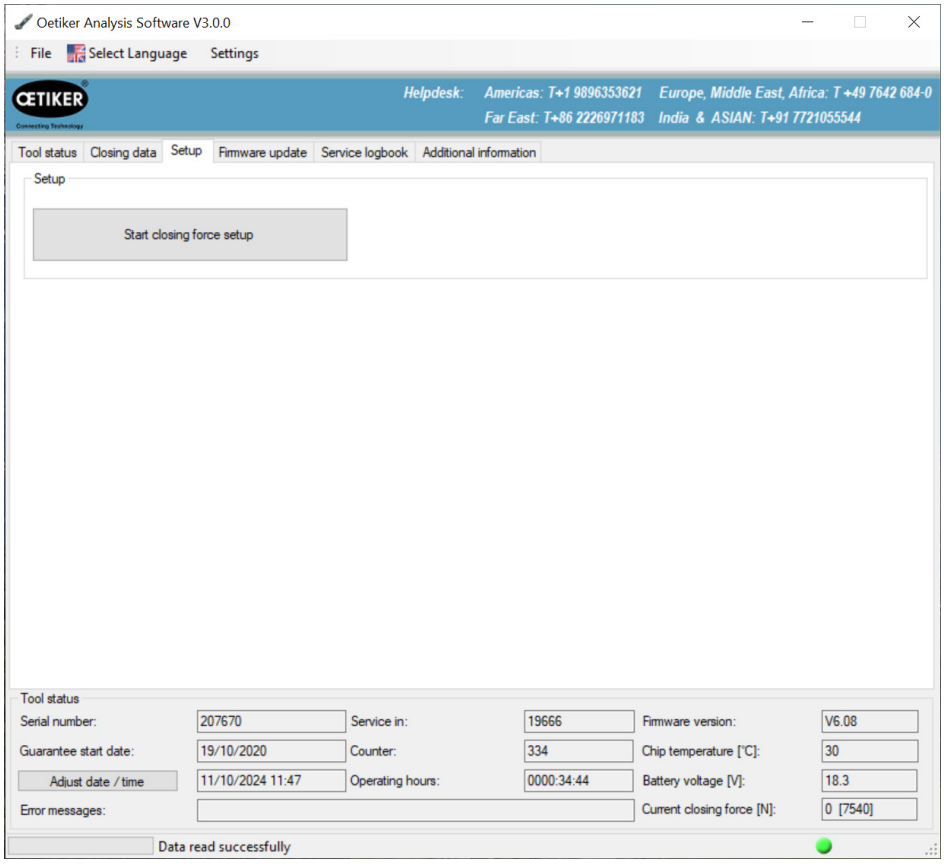


Fig. 42: *Setup menu*

The closing force device of the CC 20 crimping pliers is activated in the Setup menu.

If the device has been modified (e.g. by fitting a new pincer head - even if the item number remains the same), the pincers must be checked.

NOTICE

- Possible damage to the clamping pincer and incorrect crimping!
  To ensure a consistent and repeatable quality of the work process, the final diameter of the Multi Crimp Ring (MCR) must be checked once per shift or once per day. A closing force device is also required if components of the clamp have been replaced.

The closing force is set up in two sub-processes: without application and with application (see also Section 5.1.4)

Without application

The closing force device without application is to determine how much force is required to perform a multi-crimp ring (MCR) crimping procedure.

With application

As above, but on a real application or dummy application.

7.5 Firmware menu

New firmware is loaded onto the device via the "Firmware" menu (see *chapter 4.4*).

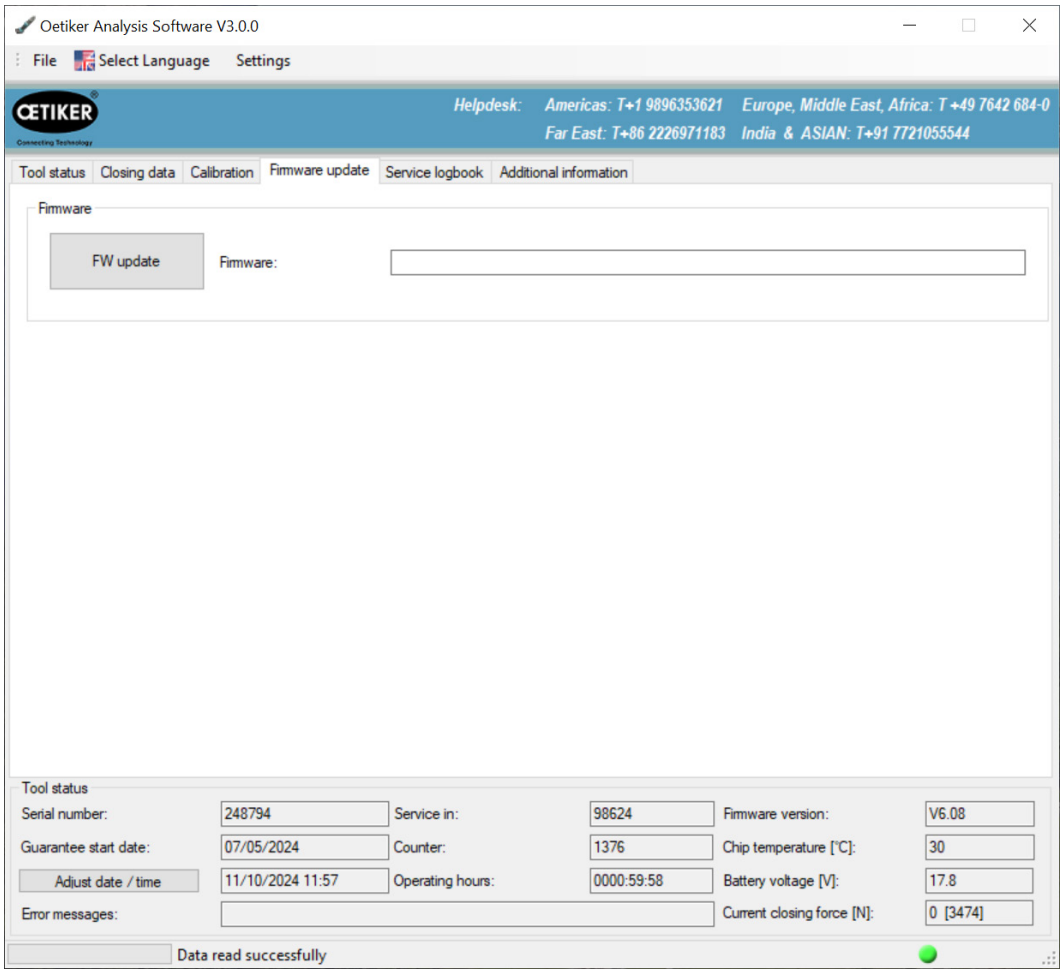


Fig. 43: *Firmware menu*

7.6 Service diary menu

There are two input fields, labeled **"Customer"** and **"Service"**. Comments can be entered in these fields. There are two buttons under each of the input fields: **"Open"** and **"Safe".** With **"Safe"**, the comment from the corresponding input field is saved locally on the computer as a text file. With **"Open"** a saved text file can be loaded into the input field and visualized.

NOTICE

Changes and deletions can be performed at any time.

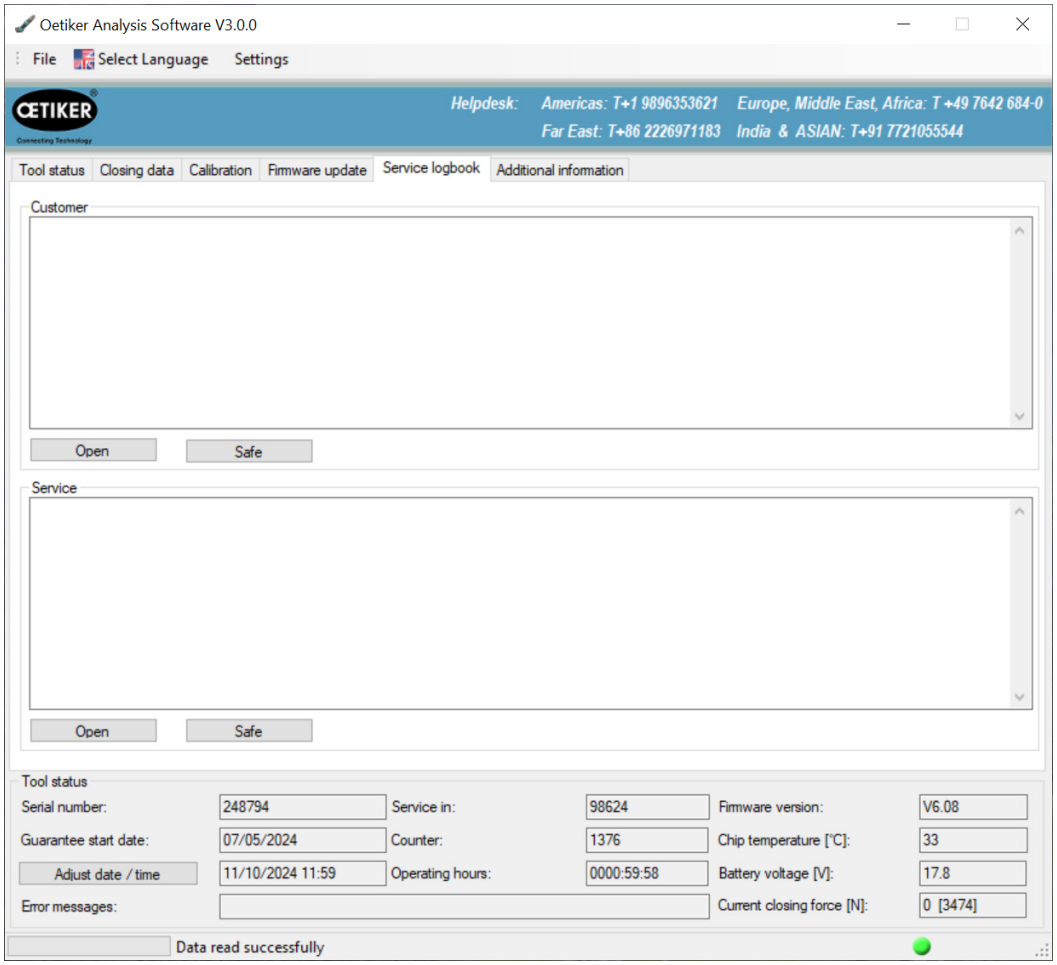


Fig. 44: *Maintenance diary menu*

7.7 Additional information menu

The "Additional information" menu allows you to call up information by clicking on the items listed.

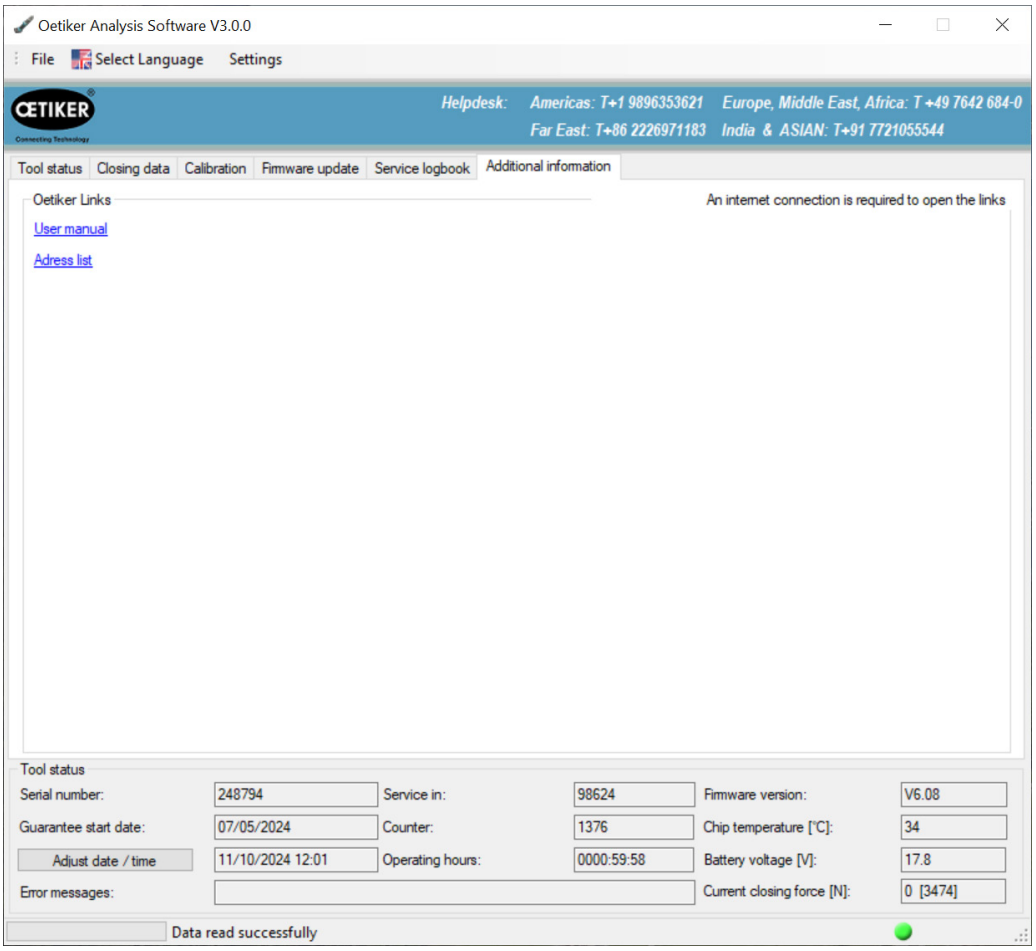


Fig. 45: *Maintenance diary menu*

8 Appendix

8.1 General information in event of faults

If the closing operation of clamp pincer CP 10 / CP 20 / CC 20 does not start or does not operate correctly, consult maintenance personnel responsible for clamp pincer CP 10 / CP 20 / CC 20.

8.2 Reaction in event of faults

If a fault occurs, the clamp pincer will be blocked. The service LED will light up red or orange. Operation can be restarted only by briefly removing the battery and reinserting it ("reset").

If after the clamp pincer have been "reset" the fault is still present, contact your OETIKER contact person.

8.3 Error messages and troubleshooting measures

NOTICE

Changes and deletions can be performed at any time.

Service LED

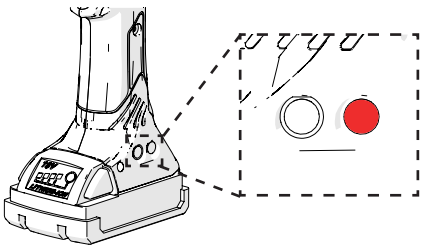


Fig. 46: *Service LED*

Display after the pressing operation		Cause / remedy
	lights up green	Closing force OK.
	flashes green/red	Closing force OK, service interval exceeded. ► Return the appliance for maintenance.
	lights up red	Closing force incorrect, hardware error or calibration error ► Recalibrate the device. Repeat the joint. Contact the Service Center if necessary.
	lights up orange	Temperature error. ► Warm up the tool or cool it down

Display after plugging in the battery		Cause / remedy
	lights up green	No fault
	lights up orange	Temperature error. ► Warm up the tool or cool it down

Error messages via the service LED

Battery LED

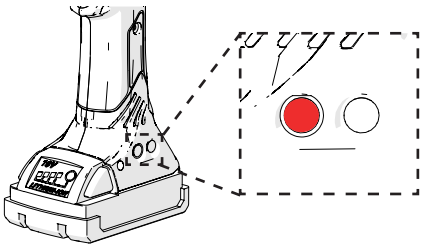


Fig. 47: *Battery LED*

Display after the pressing operation		Cause / remedy
	none	No fault
– – – – – – –	flashes red	Battery has only approx. 10 % capacity remaining ► Charge the battery or change it.
———	lights up red	Battery flat ► Charge the battery or change it.

Display after plugging in the battery		Cause / remedy
———	lights up green	No fault
———	lights up red	► Charge the battery or change it.

Error messages via the battery LED

8.4 Decommissioning and storage

If the cordless clamp pincer CP 10 / CP 20 / CC 20 is to remain out of service for an extended period, it must be decommissioned.

- Remove the battery from the clamp pincer.
- Replace any defective parts.
- Clean clamp pincer CP 10 / CP 20 / CC 20 before storing.
- Store clamp pincer CP 10 / CP 20 / CC 20 in the case in a clean, dry place and so it is protected from dust.
- Please note the discharge of the button cell (*see Section 6.2.4*)

8.5 Recommissioning

- Proceed as for commissioning (see *chapter 4* and *chapter 5.2*).

8.6 Disposal

The product must be disposed of in accordance with EC Directive 2012/19/EU:

► Dispose of packaging materials in accordance with local regulations.

The individual components of the device must be disposed of separately.

► Drain the oil and dispose of it at a special disposal point.

► Dispose of the battery separately in accordance with the battery disposal regulations.

The device, all spare parts and in particular the consumable fluids used and other environmentally polluting substances must be disposed of by specialist firms in accordance with applicable statutory regulations.

If necessary, please seek advice from OETIKER.

8.7 Technical data

8.7.1 USB interface

NOTICE

- The USB port is used exclusively for data transfer with the PC (no continuous data exchange).
- Before the USB connection from the PC to clamp pincer CP 10 / CP 20 / CC 20 is first established, a driver must be loaded on to the PC and installed. This installation takes place automatically.
- If automatic installation fails, the necessary driver is located in the installation directory of the PC and can be installed manually.
- Once the USB connection has been plugged in, program CP 10 / CP 20 / CC 20 may need to be reopened in order to locate the driver

8.7.2 Physical sizes CP 10 / CP 20 / CC 20

External dimensions

Max. 310 × 70 × 80 mm (without battery and without pincer head)

Weight

(including 2 Ah battery and standard pincer head)

- CP 10: max. 2.5 kg
- CP 20: max. 3.1 kg
- CC 20: max. 3.3 kg

Color

Blue, black

8.7.3 Capability within the working temperature range

Closing force tolerances in working temperature range with standard pincer heads.

Machine capability cmk > 1.33.

	Force priority closure
CP 10	±150 N
CP 20	±150 N
	Force-controlled closing
CC 20	±150 N

Accuracy within the working temperature range

8.7.4 Temperature

Storage temperature	-10 °C …+40 °C
Working temperature	0 °C - +40 °C

8.7.5 Noise

Sound pressure level	< 70 dB (A)
Noise level	> 85 dB (A) may occur during operation

8.7.6 Thrust force

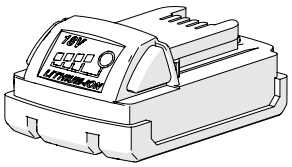
Clamp pincer CP 10	max. 7.3 kN
Clamp pincer CP 20	max. 23.2 kN
Clamp pincer CC 20	max. 23.2 kN

The mechanical system safety valve is adjusted so that the following maximum thrust forces cannot be exceeded for safety reasons.

Clamp pincer CP 10	max. 8.4 kN
Clamp pincer CP 20	max. 26.7 kN
Clamp pincer CC 20	max. 26.7 kN

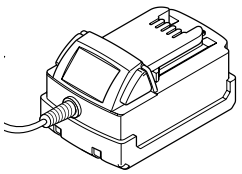
8.7.7 Battery

Only the following batteries may be used:

Item number	Capacity	
14002340	2.0 Ah	
14002346	4.0 Ah	

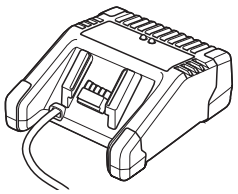
8.7.8 AC mains adapter (not included in the standard scope of delivery)

Only the following AC power adaptors may be used:

Item number	AC adapter	Region	
14002341	230 V/50 Hz-18 V	EU	
14002341 + 06001709 (adapter)	230 V/50 Hz-18 V	UK	
14002344	120 V/60 Hz-18 V	US	
14002347	230 V/50 Hz-18 V	AUS/NZ	

8.7.9 Battery charger

Only the following battery chargers may be used:

Item number	Region	
14002339	EU	
14002339 + 06001709 (adapter)	UK	
14002342	US	
14002345	AUS/NZ	

8.7.10 Labels and warnings on the CP 10 / CP 20 / CC 20

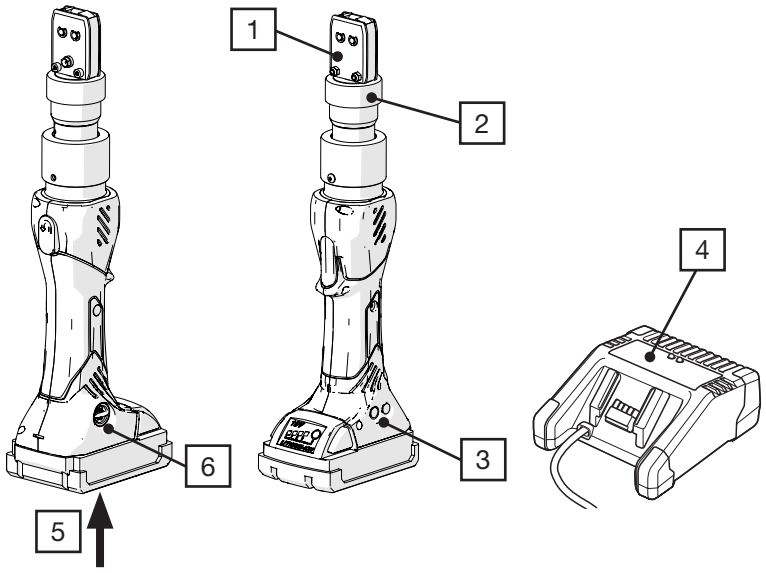


Fig. 48: *Labels and warnings on the CP 10 / CP 20 / CC 20*

1. Risk of crushing
2. Warning label
3. Rating plate
4. Rating plate, battery charger
5. Rating plate, battery
6. Rating plate

Warranty and guarantee

Warranty

8.8 Declaration of Conformity

NOTICE

The Declaration of Conformity for the clamp pincers is supplied separately.

EG-Konformitätserklärung

EU Declaration of Conformity

(Original-EG-Konformitätserklärung)

(Translation from the German original Declaration of Conformity)

Wir, *We,*	Oetiker Schweiz AG Spätzstrasse 11 CH-8810 Horgen SWITZERLAND
erklären in alleiniger Verantwortung, dass das Produkt *declare under our sole responsibility that the product* Set bestehend aus / *Set consisting of*	Kabellose Zange / Cordless Pincer CP 10, CP 20, CC 20 mit Zangenkopf, Akku und Ladegerät CP 10, CP 20, CC 20 with pincer head, battery and charger
Typ / *Type* **Material Nummer** / *Material number* **Serien Nummer** / *Serial number* **Serien Nummer Zangenkopf** / *Serial number Pincer Head*	CP 10, CP 20, CC 20 xxxxxxxx xxxxxxxx xxxx
allen grundlegenden Anforderungen der nebenstehenden Richtlinien – jeweils mit deren Änderungen – entspricht: *meets all the essential requirements of the directives listed alongside – in each case with their revisions:*	2006/42/EG – Maschinenrichtlinie *2006/42/EC – Machinery Directive* 2014/30/EU – EMV-Richtlinie *2014/30/EU – EMC Directive*

Angewandte harmonisierte Normen: *Applied harmonised standards:*	Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze – Risikobeurteilung und Risikominderung *Safety of machinery – General principles for design – Risk assessment and risk reduction*	EN ISO 12100:2010
	Fluidtechnik – Allgemeine Regeln und sicherheitstechnische Anforderungen an Hydraulikanlagen und deren Bauteile *Hydraulic fluid power – General rules and safety requirements for systems and their components*	EN ISO 4413:2010
	Elektrische motorbetriebene handgeführte Werkzeuge, transportable Werkzeuge und Rasen - und Gartenmaschinen – Sicherheit - Teil1: Allgemeine Anforderungen *Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety – Part 1: General requirements*	EN 62841-1:2015+ AC:2015 + A11:2022
	Schutzarten durch Gehäuse (IP-Code) *Degrees of protection provided by enclosures (IP Code)*	EN 60529:1991 + A1:2000 + A2:2013
	Elektromagnetische Verträglichkeit - Anforderungen an Haushaltgeräte, Elektrowerkzeuge und ähnliche Elektrogeräte – Teil 1: Störaussendung *Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*	EN IEC 55014-1:2021
	Elektromagnetische Verträglichkeit - Anforderungen an Haushaltgeräte, Elektrowerkzeuge und ähnliche Elektrogeräte - Teil 2: Störfestigkeit *Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity*	EN IEC 55014-2:2021
Angewandte sonstige technische Normen und Spezifikationen: *Other technical standards and specifications applied:*	– – –	– – –

Bevollmächtigte Person für das Zusammenstellen der technischen Unterlagen:
Authorised person for compiling the technical file:

* Oetiker Schweiz AG
Pascal Moser
Spätzstrasse 11
CH-8810 Horgen
SWITZERLAND

Unterzeichnet für und im Namen von Oetiker Schweiz AG
Signed for and on behalf of Oetiker Schweiz AG

Horgen, 4. Dezember 2024

Pascal Moser	Andreas Pulver
Head R&D CoC Automatic Assembly Tools Oetiker Group	Plant Head Switzerland

9 Contact details

If you need help or technical support, please contact your local Oetiker Service Center.

For more information, please visit www.oetiker.com.

EMEA	
E-mail	ptsc.hoe@oetiker.com
Phone	+49 7642 6 84 0

Americas	
E-mail	ptsc.oea@oetiker.com
Phone	+1 989 635 3621

China	
E-mail	ptsc.cn.tianjin@oetiker.com
Phone	+86 22 2697 1183

Japan	
E-mail	ptsc.jp.yokohama@oetiker.com
Phone	+81 45 949 3151

Republic of Korea	
E-mail	ptsc.kr.seoul@oetiker.com
Phone	+82 2 2108 1239

India	
E-mail	ptsc.in.mumbai@oetiker.com
Phone	+91 9600526454