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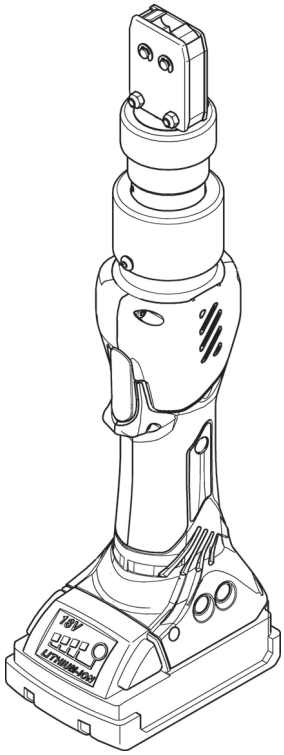

Cordless clamp pincer

CP 10 / CP 20 / CC 20

Instruction manual

Original instruction manual

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OETIKER Schweiz AG

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1 Information about this manual

1.1 Symbols and means of depiction

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

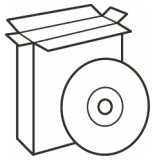
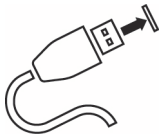
- Always read and observe these safety notices.
- Observe all notices that are flagged with a safety alert symbol and text.

The following symbols are used in this instruction manual:

Symbol	Meaning
⚠ **WARNING**	Hazardous situation. Failure to observe this notice may lead to death or serious injury.
⚠ **CAUTION**	Hazardous situation. Failure to observe this notice may lead to minor injury.
NOTICE	Information on the avoidance of property damage.
INFO	Information relating to the understanding or optimization of working practices.
▶	One-step instruction
1. ... 2. ... 3. ...	Multi-step instruction ▶ Carry out the steps in the order shown.
✓	Requirement Necessary or labor-saving steps for the successful execution of an action

1.2 Icons

Icons are used in this manual to facilitate orientation. The icons refer to the present document chapter. The following icons are used in this instruction manual:

Icon	Chapter
	PC software & firmware
	Setting up clamp pincer
	Working with clamp pincer CP 10 / CP 20 / CC 20
	Documenting process data
	Maintenance and repair

1.3 Scope

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

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 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 Proper use

The unit may only be used for the intended purpose and under technically safe and fault-free conditions.

Clamp pincer CP 10 / CP 20 / CC 20 is only intended for use to close genuine OETIKER clamp models. No other use is permissible.

Correct usage also covers observance of this instruction manual and compliance with the technical data.

Any use not in accordance with the prescribed usage shall be regarded as incorrect usage.

Unintended use

Clamp pincer CP 10 / CP 20 / CC 20 employs state-of-the-art safety features 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 clamp pincer CP 10 / CP 20 / CC 20. In such cases the operating company is solely responsible.

2.3 General safety information

- 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 clamp pincer CP 10 / CP 20 / CC 20, review and be aware of surroundings. 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 only be carried out by qualified specialists.
- Clamp pincer CP 10 / CP 20 / CC 20
  - may only be used by persons who are familiar with its use and have been informed of the risks.
  - may only be used in working areas where the lighting intensity is at least 400 Lux or where daylight prevails.
  - may only be operated by a single user.

  - may only be used 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 fixturing device.
  - may be opened or serviced only by the manufacturer.
  - may be used only with the original equipment battery packs.
  - must not be used in atmosphere where there is risk of explosive gases.
  - may not be used in presence of rain, moisture, or under water.
- If during operation clamp pincer CP 10 / CP 20 / CC 20 poses a safety-risk to people or to the device, 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 clamp pincer CP 10 / CP 20 / CC20.
- 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 clamp pincer CP 10 / CP 20 / CC 20 for visible damage before each use and starting production. Use only when in proper operating condition.
- ▶ Immediately report any damage or wear to a supervisor. Clamp pincer CP 10 / CP 20 / CC 20 must not be used if it is damaged or worn.

2.5 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 damaged, OETIKER will not accept any claims under warranty. In particular, repairs of any kind, with exception of the pincer head, are prohibited.
- Use only Original spare parts and accessories.
- Do not dismantle any safety equipment or features.

2.6 User qualification

Only authorized and qualified personnel are permitted to use this machine, subject to compliance with the technical data and the following safety rules and regulations. 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.

2.7 Maintenance work

The inspection and maintenance intervals specified in the instruction manual must be complied with. The maintenance and repair manual must be observed (see chapter 6.2, p. 6-32).

2.8 Storage and transport

To protect 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 clamp pincer CP 10 / CP 20 / CC 20 for this purpose.

2.9 Instructions for use of the battery and battery charger

- The battery is supplied partly charged and must be fully charged before first use.
- 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.
- Do not charge the battery in the vicinity of easily flammable substances or gases.
- Protect the battery and battery charger against moisture, contamination and foreign bodies.
- Do not disassemble the battery and battery charger.
- Caution: If the battery is kept in storage for an extended period, the level of charge must be checked regularly. The optimum level of charge is between 50 % and 80 %. Batteries should be recharged a maximum of every 12 months so as to avoid deep discharging which can permanently damage the battery.
- Charge the battery only in battery chargers recommended by OETIKER. The use of other battery chargers can lead to injuries and the risk of fire.
- Use only the battery intended for use in clamp pincer CP 10 / CP 20 / CC 20. The use of other batteries can lead to injuries and the risk of fire.
- If the battery is misused, fluid can leak from it. Avoid contact with escaping battery fluid. It can lead to skin irritation or burns. If you do come into contact with the battery fluid, wash the affected area with water. If battery fluid gets into the eyes, seek medical assistance immediately.

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 40,000 closures).

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

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

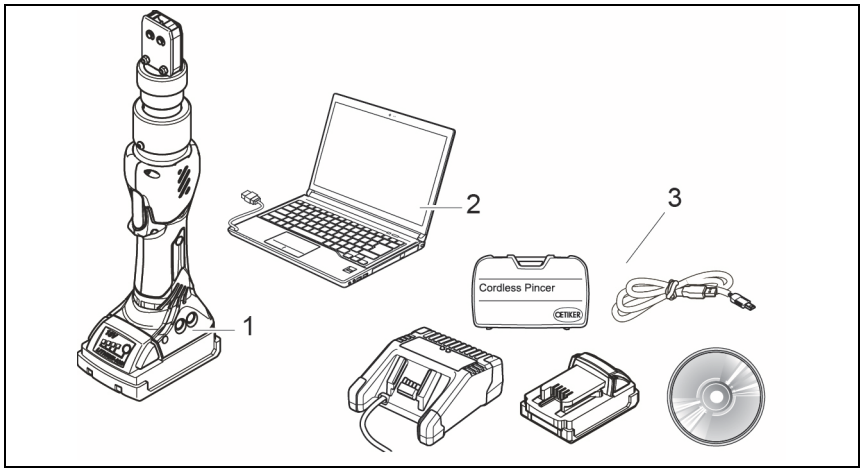


Fig. 1: Structure of entire system CP 10 / CP 20 / CC 20

3.2 Clamp pincer CP 10 / CP 20 / CC 20

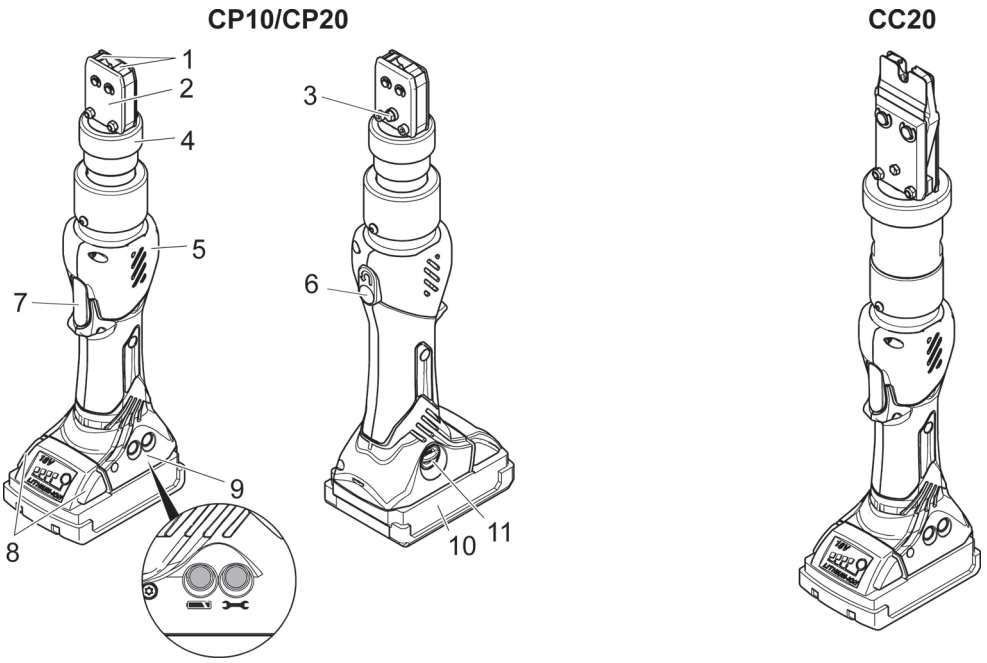
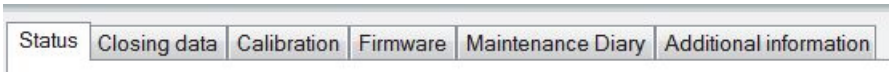


Fig. 2: Clamp pincer CP 10 / CP 20 / CC 20

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 pack
11 USB port

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 closing data set
- Calibration: Activation of pincer calibration
- Firmware: Upload of new operating software for the clamp pincer
- Service log: Entry of desired or executed service measures
- Additional information: Operation manual and contact information

3.4 Accessories

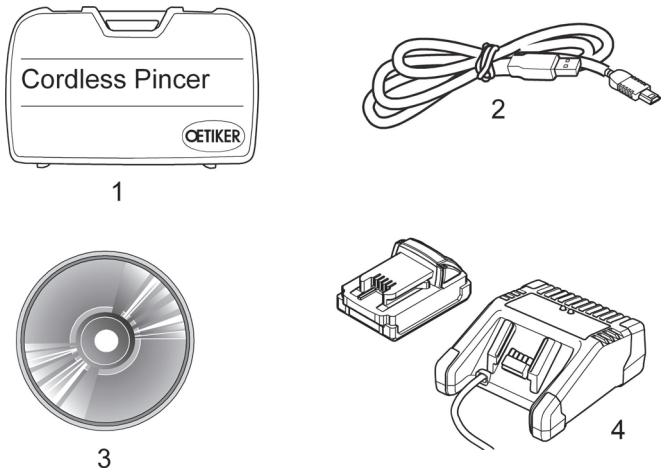


Fig. 3: Accessories

1 Pincer case
2 USB 2.0 Connecting cable
3 CD-ROM with PC software and technical description
4 Battery and battery charger

There are additional accessories available for clamp pincer CP 10 / CP 20 / CC 20, e.g.:

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

4 PC software & firmware

4.1 System requirements

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

- Computer: Pentium 4 processor or equivalent – CPU at least 1.7 MHz
- Graphics: Screen resolution min. 1024 x 768 pixels or higher, 65535 or more colors
- Main memory: 512 MB RAM or more (1 GB recommended)
- Hard drive: 200 MB free disk space (1 GB recommended)
- Screen resolution: 1024×768 or higher, 65535 colors or more
- Operating system: Windows Vista®, Windows 7® and Windows 8®
- Other: CD-ROM drive, USB 2.0

Installation notes

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

Plug & Play

After the PC software supplied has been installed and clamp pincer CP 10 / CP 20 / CC 20 is 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. Upon recognition the PC software can be used.

4.2 Installing the PC software

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

4.2.1 Automatically installing PC software

1. Close all open applications.
2. Place the CD in the CD-ROM drive.

   After a few seconds the installation instructions will be displayed on the screen.
3. Follow the instructions on the screen.

4.2.2 Manually installing PC software

If the PC configuration does not support automatic installation the PC software can be installed manually.

- Start installation by double clicking on the setup.exe file on the installation CD.

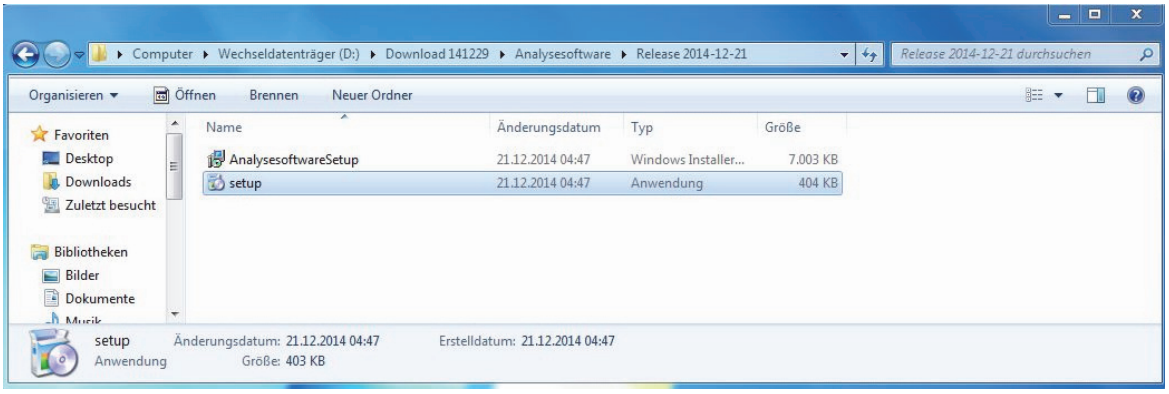


Fig. 4: Manual installation of the PC software

- Follow the instructions of the Setup wizard.

4.3 Starting PC software

1. Double click on the software icon 

for the PC software.

   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.

4.4 Updating firmware

This function allows new firmware to be loaded to the device.

NOTICE
Risk of 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. For example: Only load firmware for CP 10 for clamp pincer CP 10.

INFO
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.
2. Remove battery (Fig. 5/1) from clamp pincer.

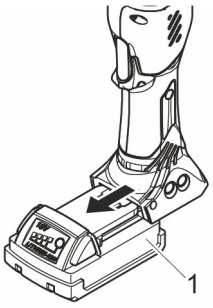


Fig. 5: Removing the battery.

3. Hold down the START button (Fig. 6/2) and reinsert battery (Fig. 6/1) at the same time. The status LEDs will blink red.

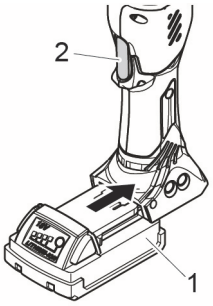


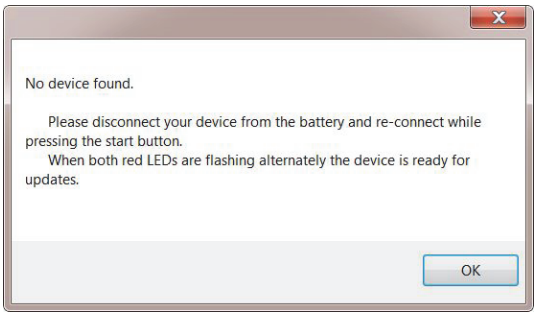
Fig. 6: Inserting the battery

4. Start the PC software and click on the "FW Update" button in the "Firmware" tab.

Fig. 7: Firmware update button

INFO

If the “FW update” button is pressed before the device has switched to transfer mode, the “No device found” advice 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.

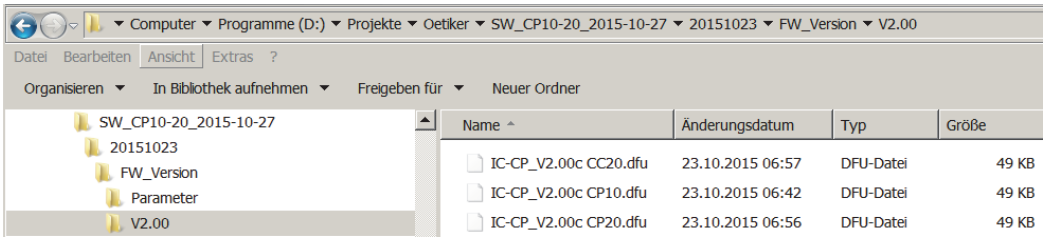


Fig. 8: Confirming firmware selection

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

INFO

The status of the firmware update can be read off from the progress bar for data transmission (Fig. 30/5). 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 clamp pincer

5.1.1 Manually entering and managing closing data parameters

CAUTION

Possible damage to clamp pincer!

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

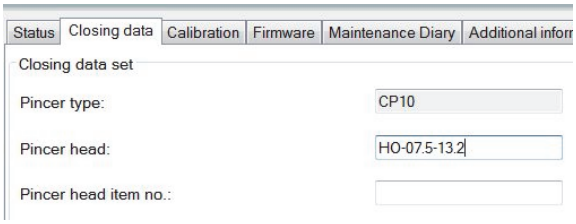
- Always enter the correct values for the clamp pincer and pincer head. Observe the specifications and technical data given by OETIKER.

Requirement:

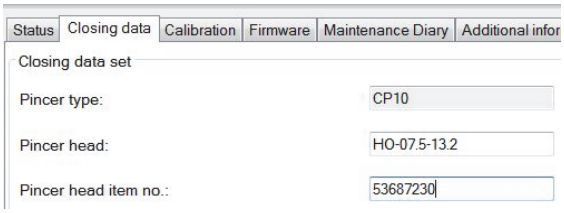
- ✓ Battery is charged.
- ✓ The clamp pincer must be connected to the PC via the USB cable.

NOTICE

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



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



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

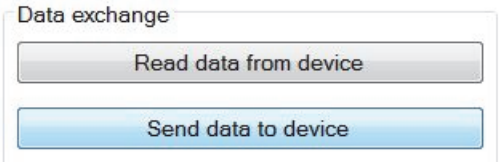
3. Enter the value of the target closing force in the "Closing force [N]" field.

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 "Closing 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.



INFO

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

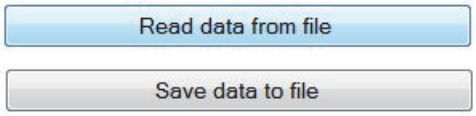
Requirement:

✓ Battery is charged.

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

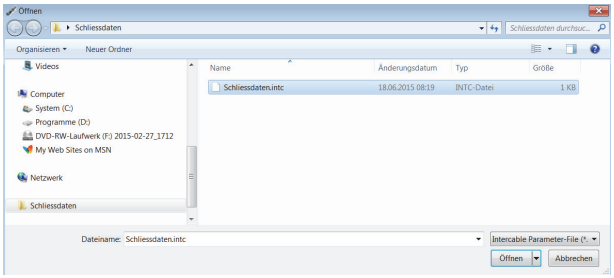
✓ The closing data set is available on the PC or data carrier in file format **(.intc)**.

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

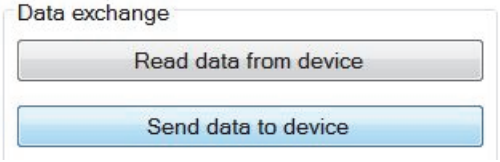


The folder overview of your PC opens.

2. Select closing data set 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.

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

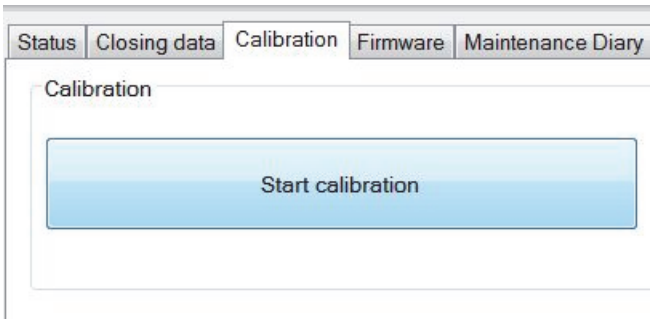
5.1.3 Calibrating clamp pincer

NOTICE
Possible damage to the clamp pincer and faulty clamp closures! To ensure uniform and reproducible process quality calibration must be executed at least once per shift or once per day. Calibration is also necessary if any 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.

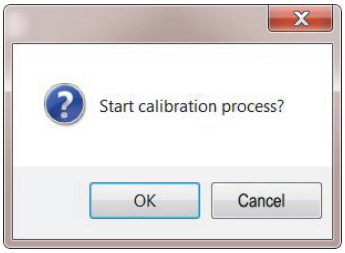
Calibration prerequisites:

- ✓ The clamp pincer must be connected to the PC via the USB cable.
- ✓ The calibration gauge is fitted with appropriate gauge 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 the “Start calibration” button in the Calibration menu.



2. In the pop-up menu, click on OK to confirm.

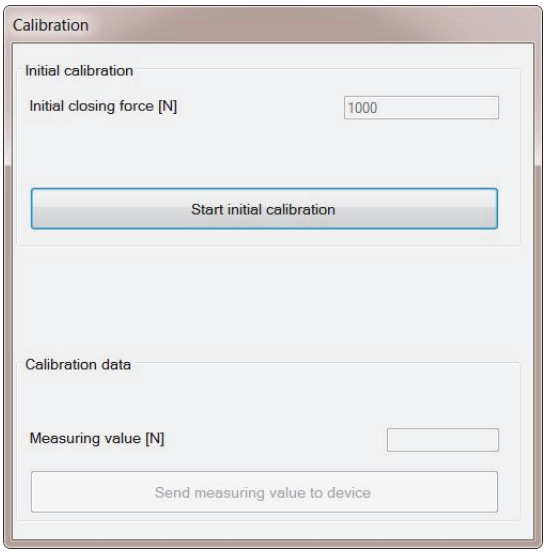


Initial calibration

The “Calibration/Initial-calibration” window now opens.

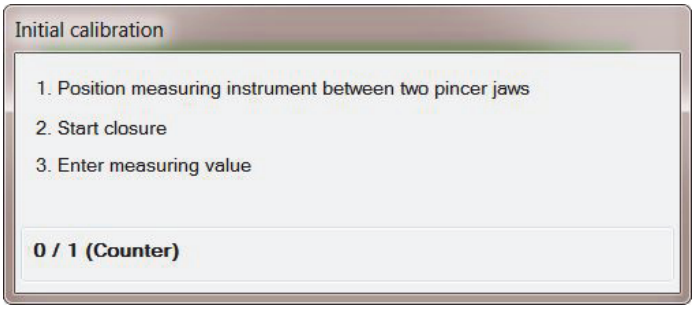
The initial closing force has already been input and doesn’t need to be re-entered.

3. Click on the “Start initial calibration” button.



The “Initial calibration” information window opens. This describes the next steps and contains a counter showing the number of measurement closures.

Once the measurement closure has been performed the “Initial calibration” window closes automatically.

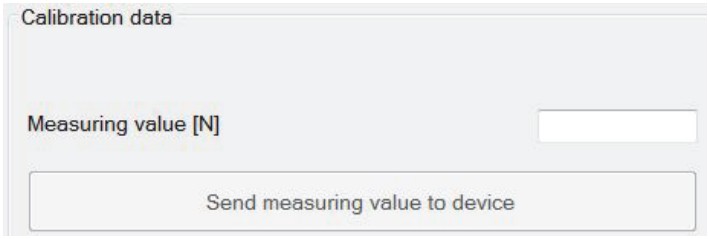


4. Input the measured value into the “Measuring value [N]” field.

   The “Send measuring value to device” button lights up green.

5. Click on the “Send measuring value to device” button.

   The measuring value is acknowledged and sent to the device.

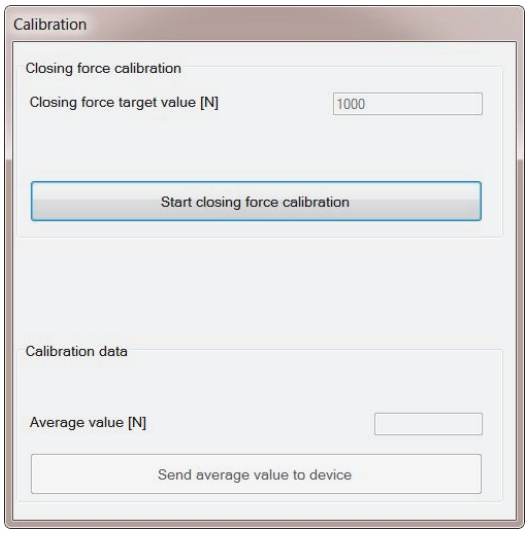


Closing force calibration

INFO
▶ Reset the measuring instrument before starting the closing force calibration. ▶ If the CAL01 is being used, select the "Average" setting.

After the measured value for the initial calibration has been sent, the “Calibration / closing force-calibration“ window will open.

The closing force target value will already be entered and doesn’t need to be re-entered.

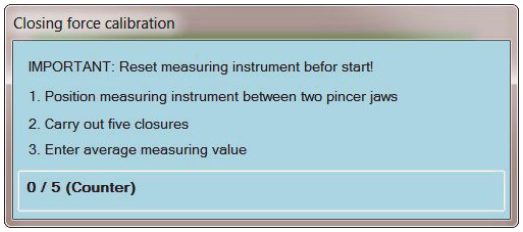


NOTICE

The target closing force is carried over from the "Closing force [N]" input field of the "Closing data" tab (see chapter 7.3, p. 7-40):

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.



   Once the 5 closures required for calculating the average have been performed, the “Closing force-calibration” indicator closes automatically.

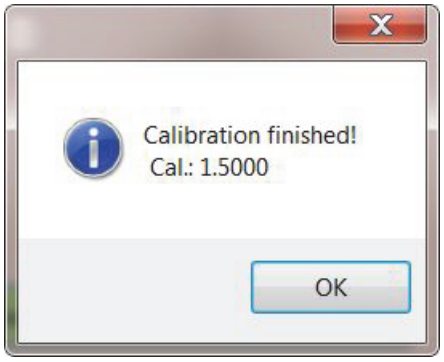
2. Enter the average of the measuring values (e.g. from CAL01) into the “Average value [N]” field in the “Calibration values” area.

   The “Send average value to device” button lights up green.

3. Press the “Send average value to device” button.

   The measured value is acknowledged and sent to the device.

The “Calibration finished” window now opens. This displays the calculated correlation factor (Cal.) (ratio between the thrust force of the plunger to 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. In such event, the calibration must be repeated.

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, p. 7-38.

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

5.2.1 Battery charge level display

The battery charge level is displayed on the battery charger LED (see also chapter 8.3, p. 8-46).
It can also be read directly off the battery.

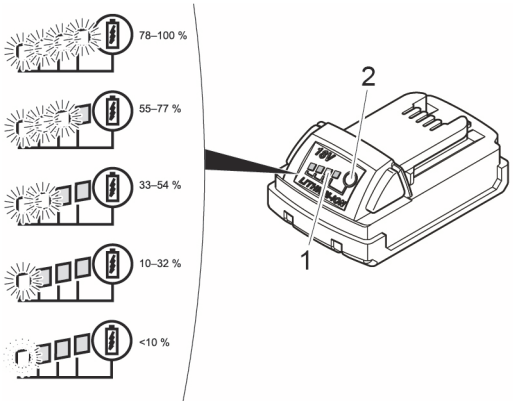


Fig. 9: Checking the battery charge level

▶ Press button(Fig. 9/2).

The number of illuminated LEDs (Fig. 9/1) shows the level of charge. 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 level of charge remaining.
- The battery can stay in clamp pincer CP 10 / CP 20 / CC 20 to test the level of charge. In order to avoid uncertainty about the accuracy of the reading, however, clamp pincer CP 10 / CP 20 / CC 20 must be switched off for at least 1 minute prior to the test.

5.2.2 Charging battery

INFO

Further information about the battery charger can be found in the supplied operating instructions from Techtronic Industries GmbH.

1. Connect charger (Fig. 10/2) to power supply.
2. Attach battery (Fig. 10/1) to battery charger.
3. Remove battery (Fig. 10/1) from the battery charger as soon as it has reached the desired level of charge.
4. After charging, disconnect the battery charger (Fig. 10/2) from the power supply.

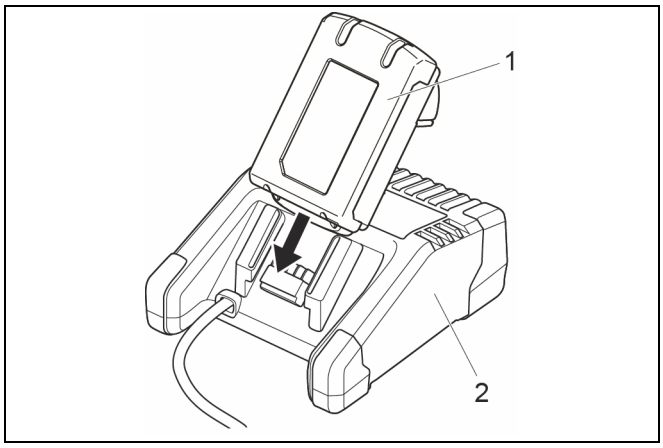


Fig. 10: Charging the battery

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 energized. If the START button is pressed (even accidentally) the pincer jaws will close!

▶ Ensure the START button is not pressed accidentally.

- Slide battery (Fig. 11/2) into clamp pincer CP 10 / CP 20 / CC 20 (Fig. 11/1) until the safety catch locks.

The battery is inserted when the buttons (Fig. 11/3) move and a click noise is audible.

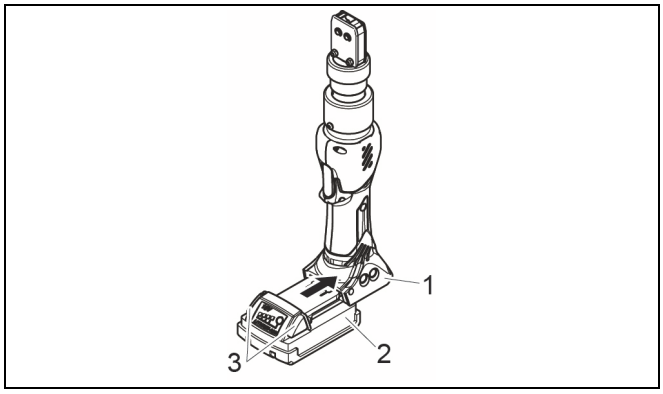


Fig. 11: Inserting the battery

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 get crushed if clamp pincer CP 10 / CP 20 / CC 20 is misused.

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

1. Press Reset button (Fig. 12/1).

   The pincer is now de-energized.

2. Grip pincer head in area 2 (Fig. 13/2) and rotate into the desired position.

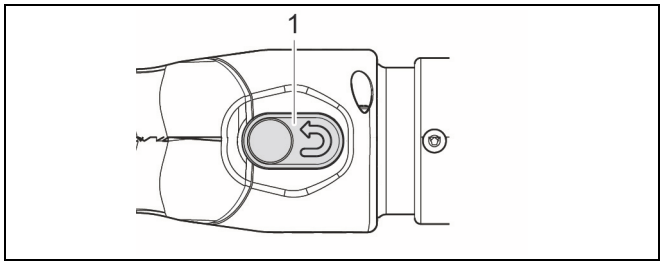


Fig. 12: Press Reset button

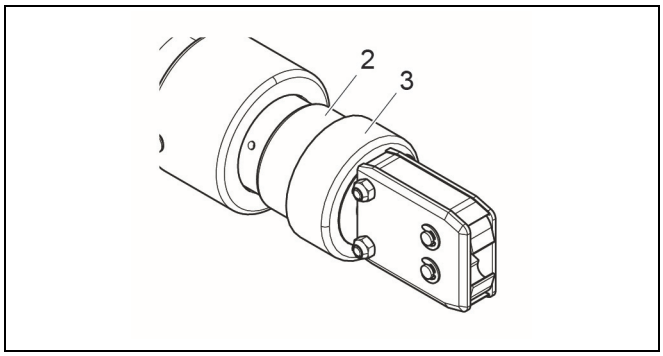


Fig. 13: Rotate pincer head

NOTICE

- During operation, ensure that the union nut is tightened at all times (Fig. 13/3).

Otherwise the pincer head could come loose. This can lead to defective closures.

5.2.5 Performing closure

⚠ WARNING

Risk of injury

Body parts could get crushed if clamp pincer CP 10 / CP 20 / CC 20 is misused.

- 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 process quality calibration must be executed at least once per shift or once per day. Calibration is also necessary if any 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.

INFO

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 local OETIKER representative.

✓ Prerequisites:

– 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.

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

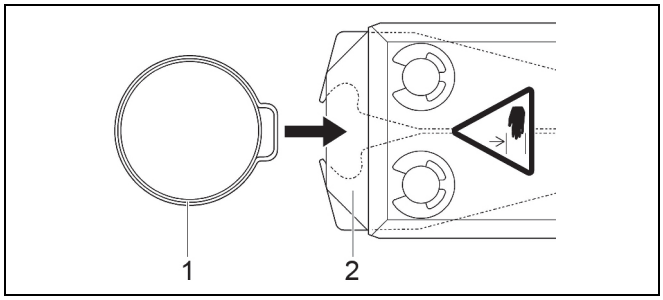


Fig. 14: Inserting a clamp

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

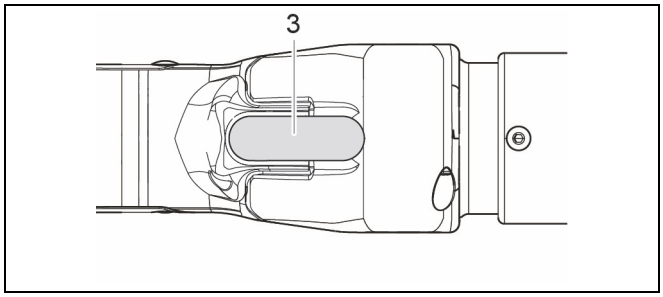


Fig. 15: Start closure

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

On reaching predefined parameter values the pincer jaws are opened.

3. Release the START button.

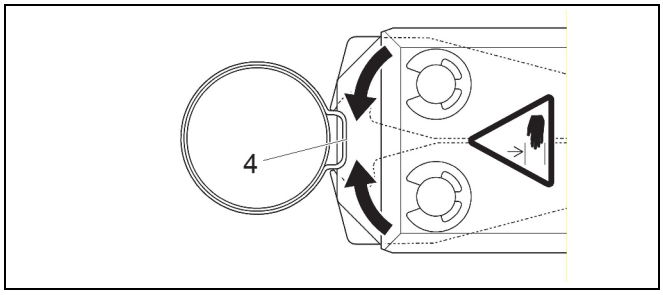


Fig. 16: The clamp is closed

INFO
Closure is performed using the closing data parameters uploaded by the PC software.

Additional closures can now be performed.

Canceling the closure process

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

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

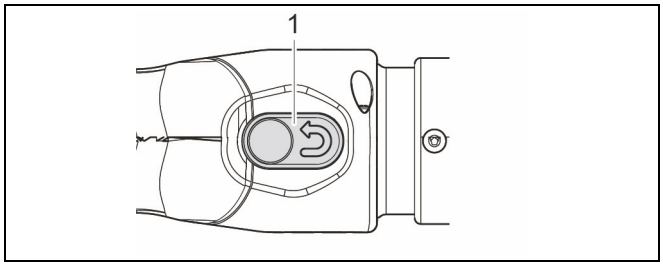


Fig. 17: Reset button

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

- Press buttons (Fig. 18/3) and pull battery (Fig. 18/2) out of 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.

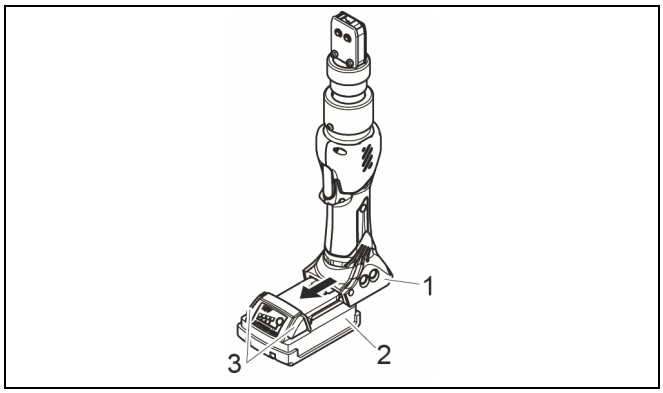


Fig. 18: Removing battery

5.3 Output of closing data parameters

INFO

✓ Prerequisites:

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

– The status tab must be active (see Fig. 30, S. 7-37).

5.3.1 Creating single closure report

1. Select the desired day in the calendar in the status tab.
2. Select the desired counter reading number in the “Counter” list.
3. Click on the “Single report” button.

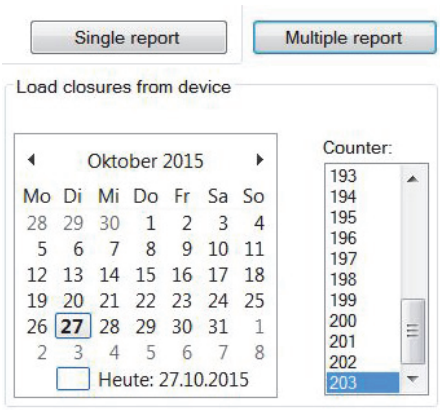


Fig. 19: Counter

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

Printing single report

▶ Click on the  icon in the menu bar.

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

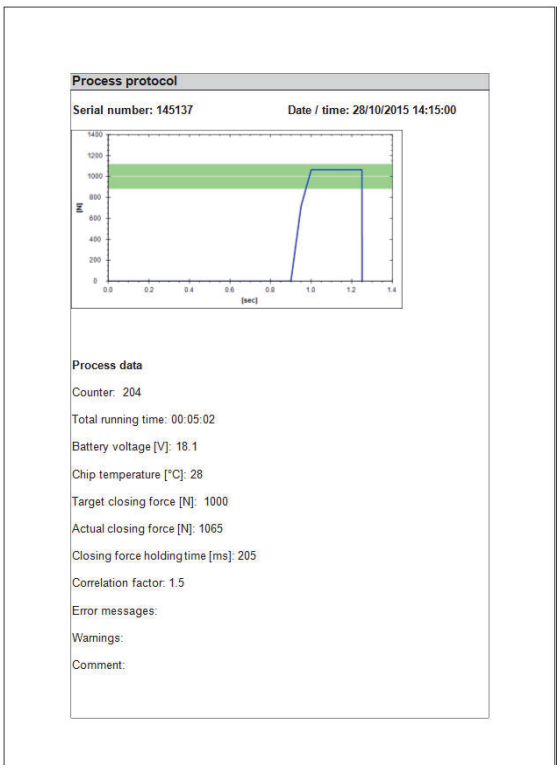


Fig. 20: Single report

5.3.2 Creating multiple closure report

1. Click on the “Multiple report” button in the Status 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 desired, press the “Select all” button to select all the closure operations on the selected day.
6. When the selection is complete, click on the "OK" button.

The selected closure operations are displayed with the process data, warning messages and error messages, and the closing force graphics are shown in the “Page view” window.

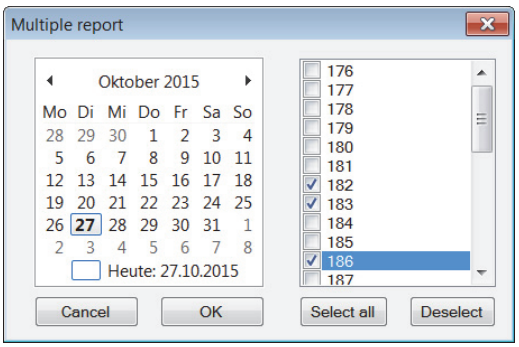


Fig. 21: Calendar and Counter

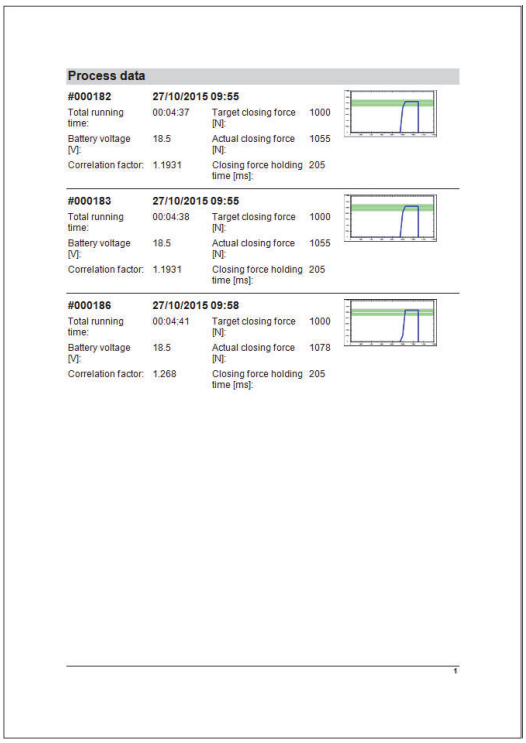


Fig. 22: Multiple report

Printing multiple report

▶ Click on the  icon in the menu bar.

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

6 Maintenance and repair

If you have questions about maintenance and repair, please contact your OETIKER representative.

Alternatively use the following help desk numbers:

- Americas: T+1 -989-635-3621
- Europe, Middle East, Africa: T+49 7642 684-0
- Far East: T+86 2226971183
- India & Asian: T+91 7721055544

OETIKER spare parts

In order to ensure the fast and accurate delivery of spare parts, a clear purchase order is essential. It must include the following information:

- Product name, software version (see chapter 7.1, S. 7-37)
- Type designation and article number (see technical data sheet)
- Serial number (engraved on the 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 closure frequency of two closures per minute. After 40,000 closures, scheduled service must be performed. Otherwise the warranty lapses. 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, only use 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.
- When the service led illuminates, clamp pincer CP 10 / CP 20 / CC 20 must be sent to OETIKER. There is no service work that the customer can or should perform on the clamp pincer. Any attempt at service work will void 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 starting 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 completion of maintenance work

- Check all screw connections.
- Reattach all safety equipment immediately.
- Check all functions of clamp pincer CP 10 / CP 20 / CC 20.
- Calibrate clamp pincer CP 10 / CP 20 / CC 20.

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:

Description	Type	Manufacturer
Grease	RENOLIT LX EP 2 (RENOLIT DURAPLEX EP 2)	FUCHS PETROLUB AG Friesenheimer Str. 17 D-68169 Mannheim Telephone No. +49 (621) 38 02-00 Fax +49 (621) 38 02-1 90 www.fuchs-oil.de

Tab. 1: Recommended lubricant

1. Remove the battery.
2. Grease pincer head (Fig. 23/1) on grease nipple (Fig. 23/3) using a grease gun with special lubricant RENOLIT LX-EP 2 (RENOLIT Duraplex EP 2).
3. Check pincer jaws (Fig. 23/2) for wear and breaks at the clamping points, exchange if necessary (see tool catalog for part no.).
4. Check the clamp pincer for mechanical damage.
5. Replace defective parts.

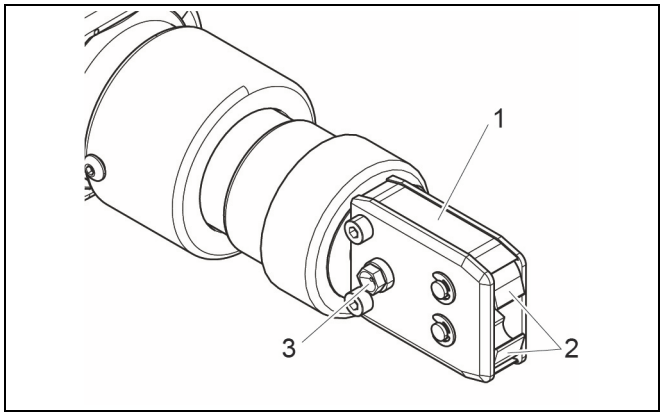


Fig. 23: Lubricating the pincer head

6.2.4 Preventative maintenance work

For preventative maintenance, OETIKER recommends sending the pincer to OETIKER once a year or when prompted by the pincer maintenance counter, whichever comes first.

6.3 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 repair work, remove the battery of clamp pincer CP 10 / CP 20 / CC 20.

6.3.1 Pincer jaw replacement

INFO

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.

Corresponding technical details can be found in the tools catalog.

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. You can find more detailed information on OETIKER products from your OETIKER contact person.

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.

1. Remove the battery.
2. Unscrew union nut (Fig. 24/2).

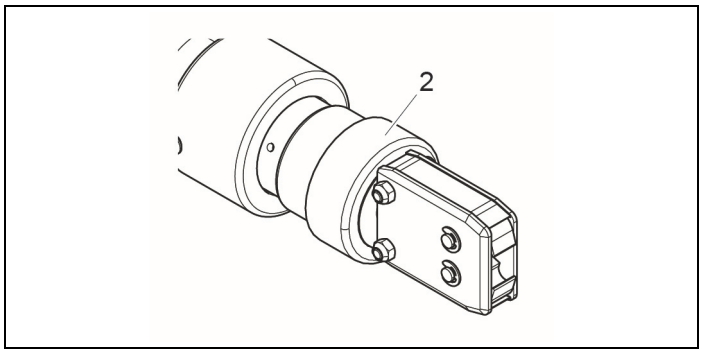


Fig. 24: Unfastening the pincer head

3. Disconnect pincer head (Fig. 25/3) from the clamp pincer (Fig. 25/4).

   The plunger (Fig. 25/2) stays in the clamp pincer (Fig. 25/4).

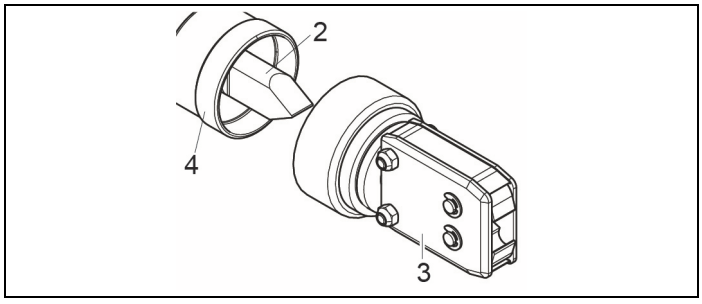


Fig. 25: Disconnecting the pincer head from the clamp pincer

4. Remove two lock washers (Fig. 26/6) on pincer head (Fig. 25/3).

   Do not push back pin (Fig. 26/7)!

5. Unscrew two hexagon nuts (Fig. 26/8) from the hexagon bolts (Fig. 26/5).

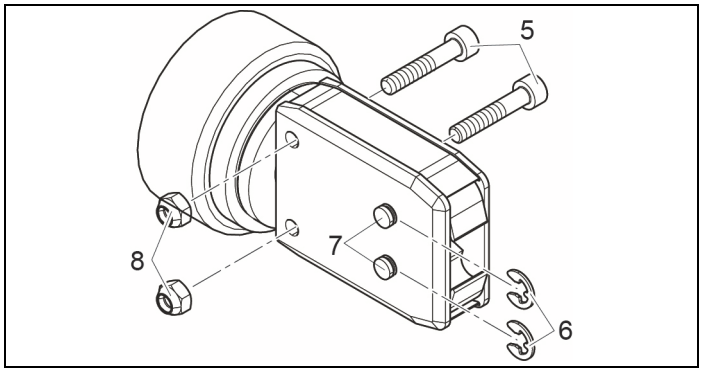


Fig. 26: Dismantling the pincer head

6. Remove side plate (Fig. 27/9).

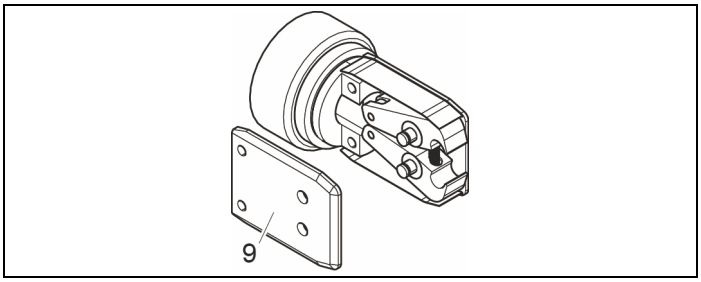


Fig. 27: Removing the side plate

7. Remove compression spring (Fig. 28/11), cover plate(Fig. 28/12) and pincer jaws (Fig. 28/10).
8. Grease and assemble replacement pincer jaws (Fig. 28/10) and compressions spring (Fig. 28/11) from the pincer jaw replacement kit and pin (Fig. 28/14) with special lubricant RENOLIT LX-EP 2 (RENOLIT Duraplex EP 2).
9. Reassemble in reverse order using new lock washers (Fig. 26/6).
10. Check mobility of pincer jaws (Fig. 28/10).
11. Screw the pincer head on to the clamp pincer and, holding the adapter, tighten the union nut.

    The plunger (Fig. 25/2) must lie between the two pincer jaws (Fig. 28/10).

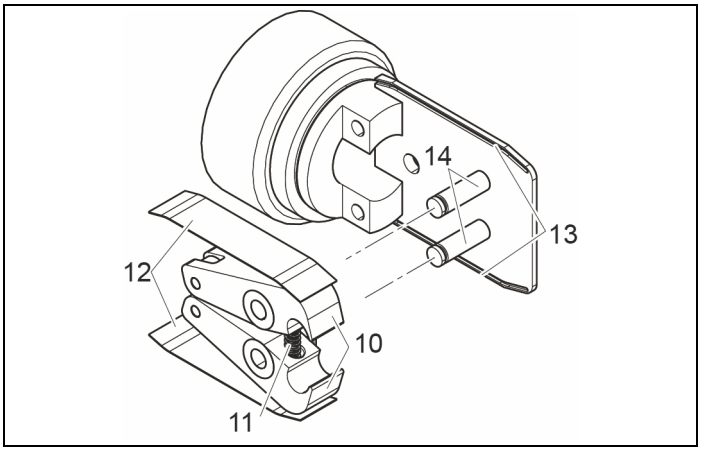


Fig. 28: Fitting the pincer jaws

6.3.2 Pincer head replacement

INFO

- Each type of clamp pincer can accept various different pincer heads. The type designations can be found in the tools catalog.
- The pincer heads CP 10 / CP 20 / CC 20 can not be exchanged between models.

Scope of delivery of a pincer head set

- Spacer (Fig. 29/1)
- Plunger (Fig. 29/2)
- Pincer head (Fig. 29/3)

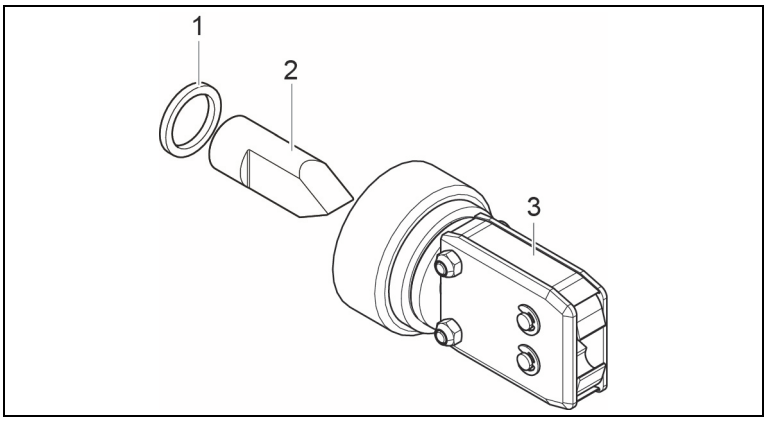


Fig. 29: Pincer head set

Installing pincer head set

1. Remove the battery.
2. Installing pincer head (see chapter 6.3.1, p. 6-33).

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.

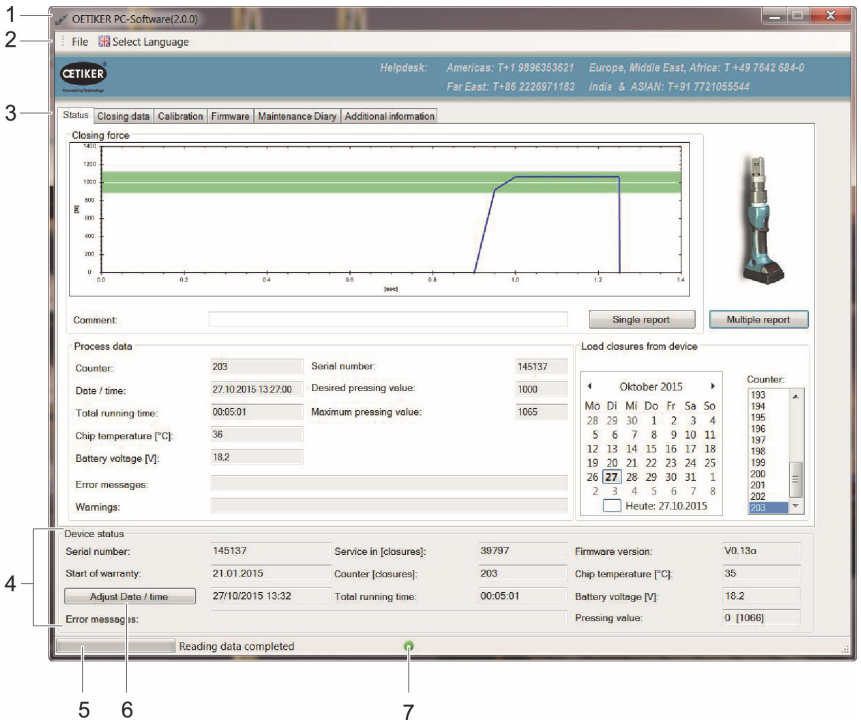


Fig. 30: Structure of the PC software

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, p. 7-38 to chapter 7.7, p. 7-45.
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

Tab. 2: Structure of the PC software

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.

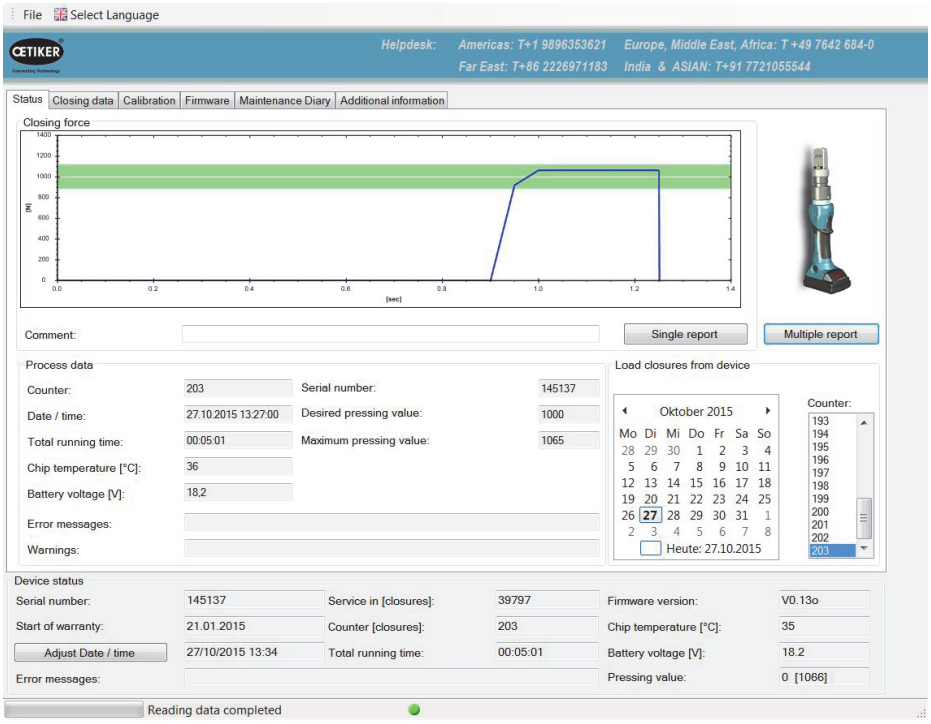


Fig. 31: Status menu

Input field/Display field/Option field	Description
Closing force	The graphic displays the progression of the closing force over time for the selected closure operation. When closure has been performed correctly, the summit of the curve must lie within the green shaded area. If this is not the case, contact your service partner without delay.
Comment	For input of user-defined texts (maximum 10 lines). The comments refer to the selected closure 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 graphics for a closure operation, together with other process data, can be called up by pressing the buttons “Single report” (documentation of an individual closure operation) or “Multiple report” (collective documentation of several closure operations). (See chapter 5.3, p. 5-29).
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. 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.

Tab. 3: Status menu

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.

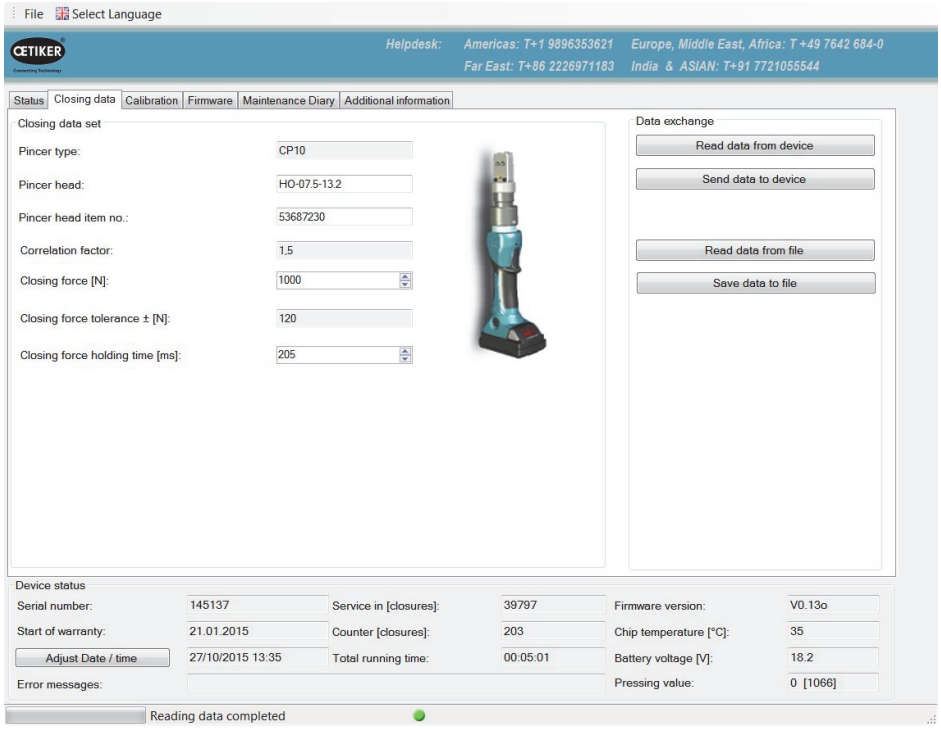


Fig. 32: Closing data menu

Input field/Display field/Option field	Description
Closing data set	Entry of the target values for the closing force and closing force holding time
• Pincer type	Displays the designation of the pincer actually connected
• Pincer head	Entry of the designation of the pincer head (max. 18 characters)
• Pincer head item no.	Enter the pincer head article number
• Correlation factor:	The correlation factor (ratio between the thrust force of the plunger to the closing force of the pincer jaws) is automatically calculated and displayed here during the calibration procedure.

Input field/Display field/Option field	Description
• 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.
• Closing force tolerance ± [N]	Factory target values for the closing force tolerance are selected and displayed according to the specified closing force.
• Closing force holding time [ms]	The closing force holding time can be freely selected within the range min. 200 ms to max. 2000 ms. The pincer jaws open at expiry of the specified holding time. **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)
• Read 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.
• Send 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 target value for the closing force is loaded, a new calibration is indicated automatically. Perform calibration see chapter 5.1.3, p. 5-20.
• Read data from file	A previously saved closing data set is loaded from a file in the “closing data set” area into the PC software.
• Save data to file	The closing data in the “closing data set” area of the PC software are saved into a file.

Tab. 4: Closing data menu

7.4 Calibration menu

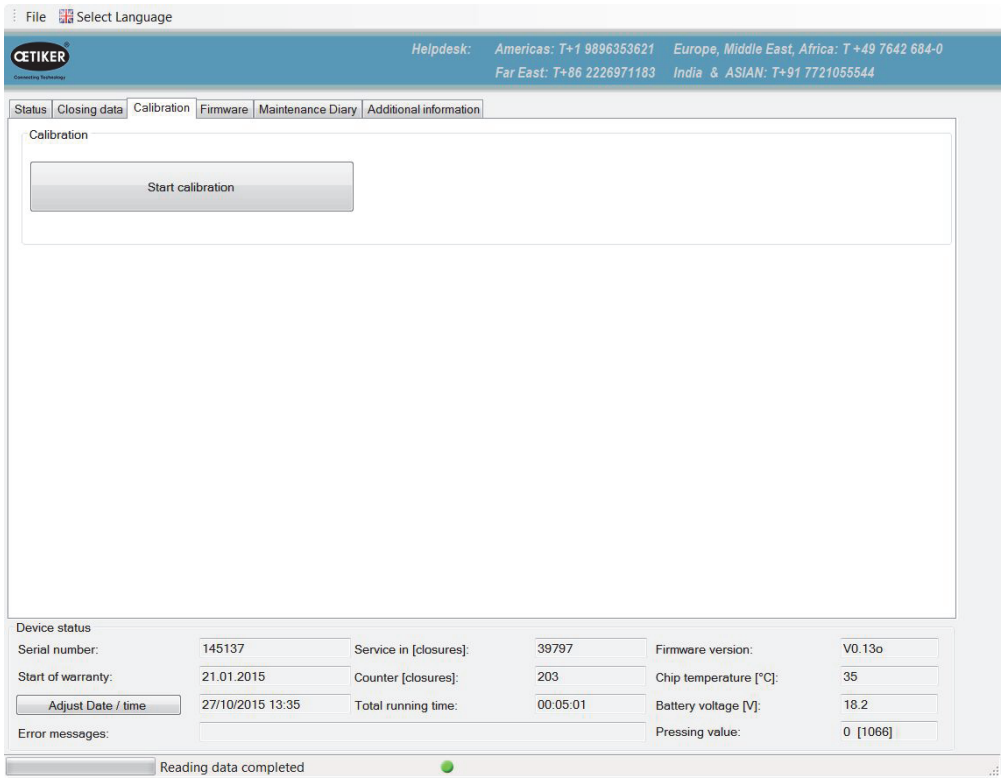


Fig. 33: Calibration menu

Calibration of clamp pincer CP 10 / CP 20 / CC 20 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 process quality calibration must be executed at least once per shift or once per day. Calibration is also necessary if any 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 performed in partial processes Initial calibration and Closing force calibration (see also chapter 5.1.3, p. 5-20).

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
- CC 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 is calculated from the results of these five measured closures, and this is loaded to the device.

7.5 Firmware menu

New firmware is loaded on the device with the Firmware menu (see chapter 4.4 Updating firmware, p. 4-15).

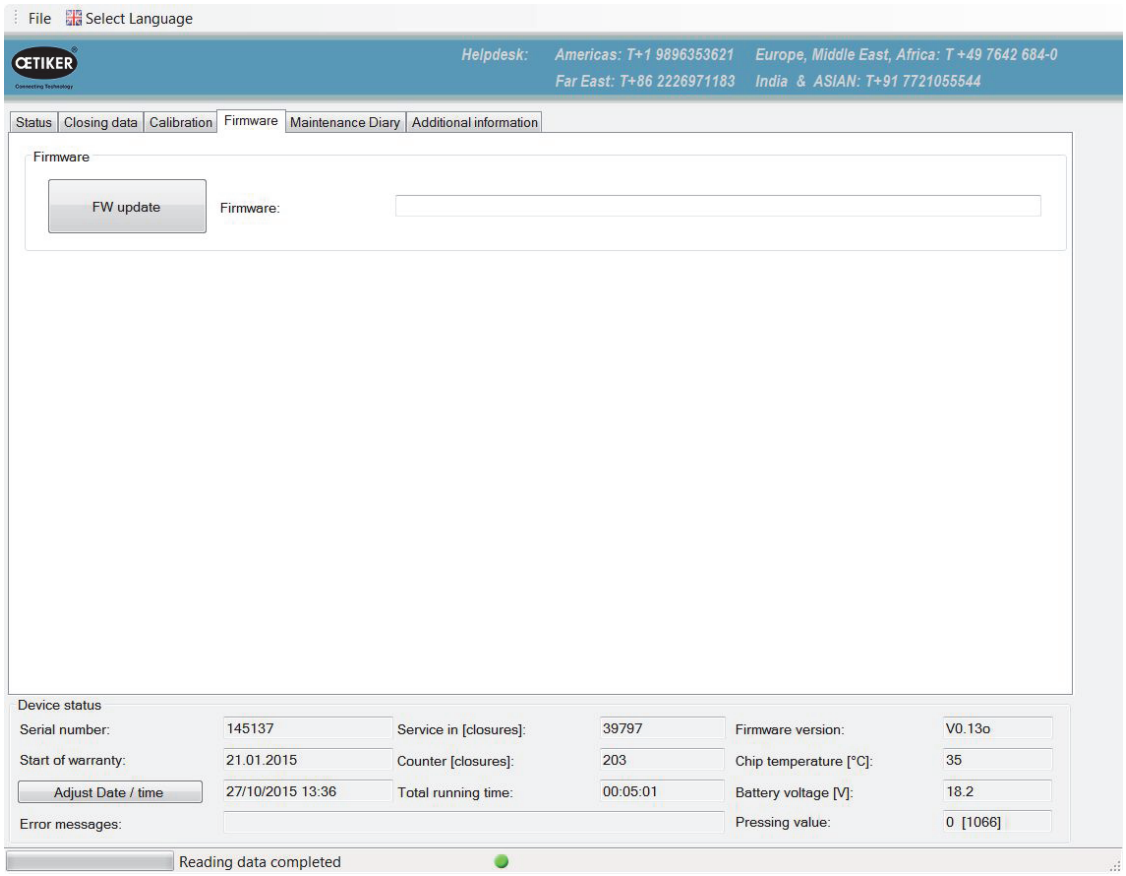


Fig. 34: Firmware menu

7.6 Service log menu

Above the “Write” button there is a window into which text can be input. Pressing the “Write” button then loads the text to the pincer. Communication between the user and service staff is facilitated because the communication content is inseparable from the pincer.

INFO
Changes and deletions can be performed at any time.

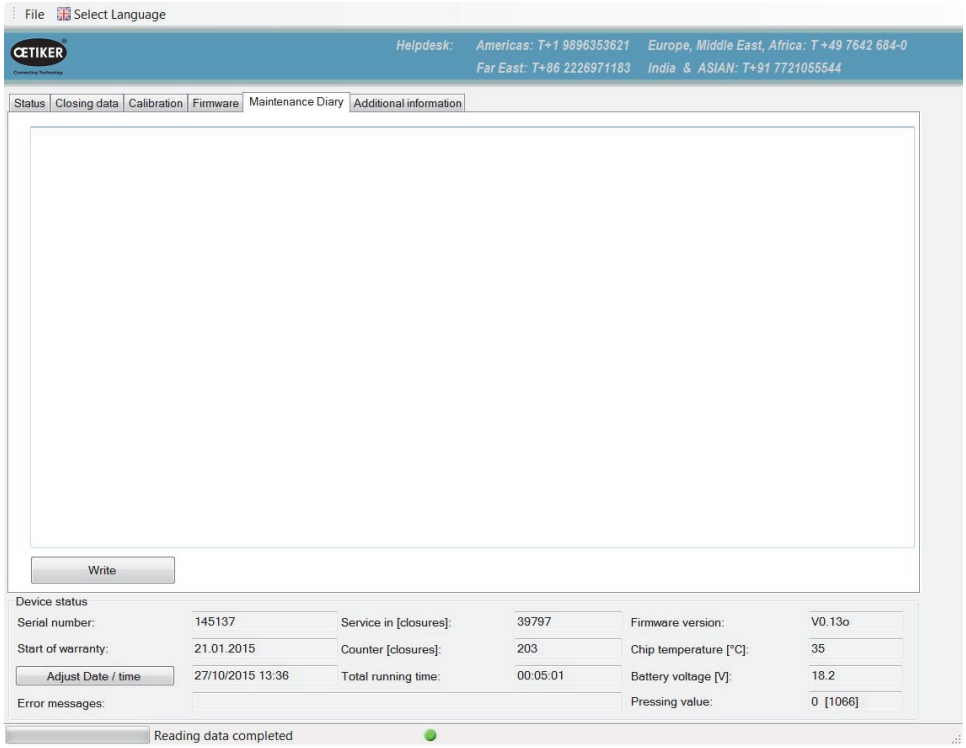


Fig. 35: Maintenance log menu

7.7 Additional information menu

The Additional information menu allows information to be called up from the headings that are listed.

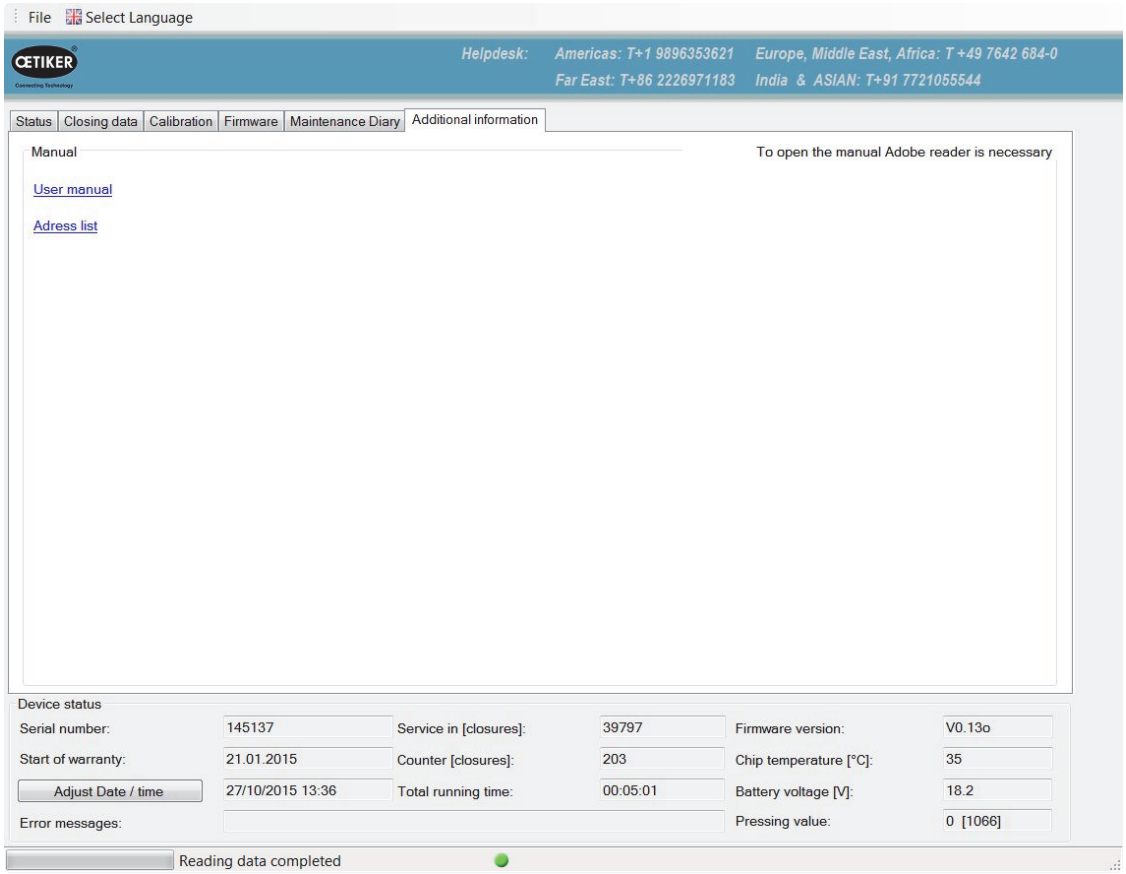


Fig. 36: Additional information menu

8 Attachment

8.1 General information in event of faults

If the closure 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 Clearing faults

If a fault occurs, the clamp pincer will be blocked. The service LED lights 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

INFO
Closing-relevant error messages can be read out with PC software (individual or multiple report). ▶ Please send the respective reports to your OETIKER contact person.

Service LED

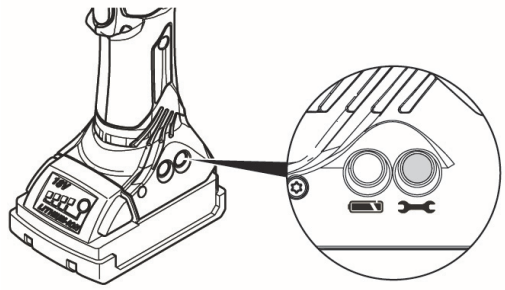


Fig. 37: Service LED

Display after the pressing operation		Cause / remedy
	lights up green	Closing force OK.
	flashes green/red	Closing force OK, service interval exceeded. ▶ Have the device serviced.
	lights up red	Closing force **incorrect** or hardware error ▶ Recalibrate the device. Repeat the joint. Contact Service Center if necessary.

Display after the pressing operation		Cause / remedy
———	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.

Tab. 5: Error messages via the service LED

Battery LED

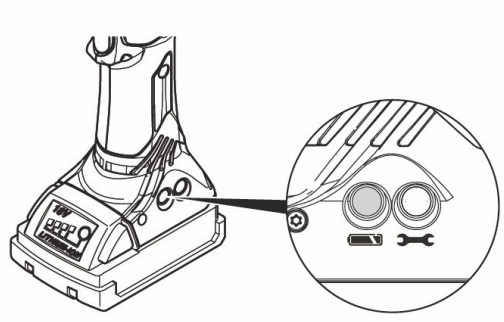


Fig. 38: Battery LED

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.

Tab. 6: Error messages via the battery LED

8.4 Decommissioning and storage

If 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 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.

8.5 Recommissioning

- Perform commissioning (see chapter 4, p. 4-14 and chapter 5.2, p. 5-23).

8.6 Disposal

The product must be disposed of in accordance with the EC Directive 2002/96/EC:

▶ 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

INFO
• The USB port is used exclusively for data transfer with the PC. • 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. Installation is automatic. 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 Clamp pincer CP 10 / CP 20 / CC 20

External dimensions

Max. 310 × 70 × 80 mm (without battery and 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 Accuracy 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
CC 20	±250 N

Tab. 7: 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

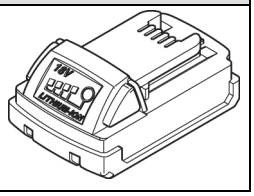
Clamp pincer CP 10	max. 7.3 kN
Clamp pincer CP 20	max. 23.2 kN
Clamp pincer CC 20	max. 23.2 kN

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:

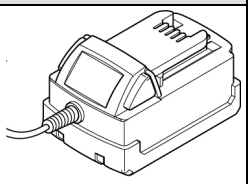
Article number	Capacity	
14002340	2.0 Ah	
14002346	4.0 Ah	

Tab. 8: Batteries

8.7.8 AC power adaptor

(not included in standard scope of supply)

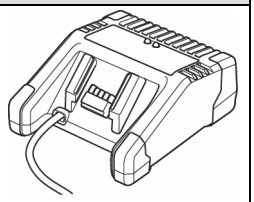
Only the following AC power adaptors may be used:

Article number	Power supply	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	

Tab. 9: AC power adaptors

8.7.9 Battery charger

Only the following battery chargers may be used:

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

Tab. 10: Battery chargers

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

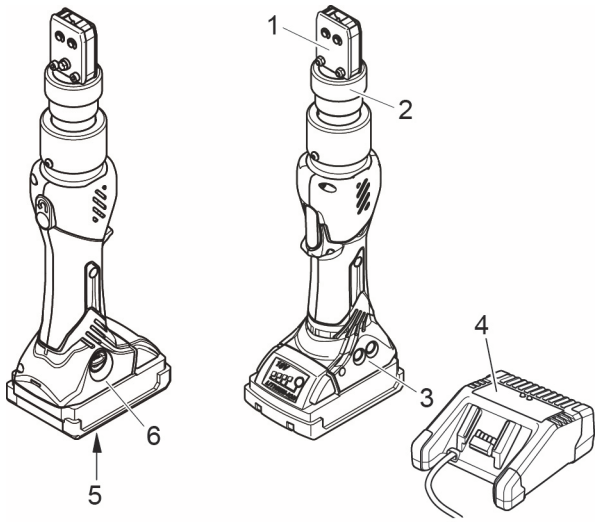


Fig. 39: Labels and warnings on the CP 10 / CP 20 / CC 20

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

8.8 Warranty and guarantee

8.8.1 Warranty

The legal warranty applies. The guarantee is based on the number of closure cycle as defined below.

8.8.2 Guarantee

Guarantee period for wear parts: Until reaching the first maintenance interval at 40,000 closures.

8.8.3 Warranty conditions

- The clamp pincer must have been commissioned as specified in the instruction manual.
- The clamp pincer housing must not have been opened.
- Perform maintenance as specified (see chapter 6, p. 6-31).
- The clamp pincer must have been used solely for the intended purpose.

Return

We recommend returning the components in their original packaging.

If that is not possible, the components should be packed in equivalent protective packaging. If the component is damaged due to inadequate packaging, the customer shall bear the costs, notwithstanding any justified guarantee and warranty claims.

Complaint report

A description of the problem is an essential part of any complaint.

8.8.4 Consequential damages

We accept no liability for consequential damage arising indirectly or directly from the use of our clamp pincers.

8.8.5 Costs

Where a warranty claim is justified, we will bear the costs subject to return in the correct manner and submission of a completed complaint report.

If there are no grounds for a complaint, the customer will be billed for the costs incurred.

8.9 Declaration of Conformity

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

8.10 Index

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