Cleco®

17BP…B…

LIVEWIRE™

EN Cordless EC tool

17	B	P	…	…	B	…	Q

Series
17

Power
B – Akku

Tool style
P – Pistol

Feature 1 (Data transmission)
– IrDA
R – RF868 MHz
F – RF915MHz
W – WLAN: WEP, WPA
X – WLAN: WEP, WPA/WPA2, 802.1x

Attachment
Q – Quick change 1/4"

Max. Torque
05 – 5 Nm
07 – 7 Nm
09 – 9 Nm
13 – 13 Nm

Akku
B – 26 V

Feature 2 (Scanner)
S – Barcode Scanner
– None

Retain for future reference!

For additional product information visit our website at http://www.cooperpowertools.com

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For this Instruction Manual

This Instruction Manual is intended for all persons who work with this tool but do not do any programming work.

The Instruction Manual

- provides important notes for safe and effective use.
- describes the function and operation of the cordless EC angle nutrunner.
- serves as a reference work for technical data, service intervals and spare part orders.
- provides information on options.

For more information on the operation of the 17BP with the control electronics see

- programming manual controller TMEB-200, no. P1895E
- programming manual TMEB-COM, no. P1898E for PC application

In the text:

17BP represents all models of the *cordless EC angle nutrunner* as described here.

➔ refers to required actions.

• refers to lists.

Identification text:

17BP	represents all models of the cordless EC tool as described here.
➔	refers to required actions.
•	refers to lists.
kursiv	refers menu items, i. e.: *Diagnostics*
<…>	refers elements, that have to be selected or deselected, such as buttons or control boxes, i. e.: <F5>
`Courier`	refers names of paths and files are written in Courier font i.e.: **`setup.exe`**
\	refers selection of an item from the menu i. e.: *file* \ *print*

Identification graphic:

⟵	refers a movement in one direction.
⇩	refers function and force.

Copyright protection

Contents

1 Safety

1.1 Warnings and notes

Warning notes are identified by a signal word and a pictogram:

- The signal word describes the severity and the probability of the impending danger.
- The pictogram describes the type of danger.

WARNING!

Indicates a potentially **hazardous** situation
which, if not avoided, could result in death or serious injury.

CAUTION!

Indicates a potentially **hazardous** situation which, if not avoided, may result in minor or moderate injury or property and environmental damage. If this warning is not observed, injuries, property or environmental damage may occur.

Class 2 laser product
Class 2 laser scanners use a laser diode that produces a low-power visible light beam that is comparable to a very bright source of light, such as the sun.
Do not look into the laser beam when the laser is on.
Doing so can cause damage to the eyes.

NOTE

General notes
include application tips and useful information but no hazard warnings.

1.2 Basic requirements for safe working practices

You should read all instructions.
Nonobservance of the instructions below may result in electrical shock, burns and serious injuries.

CAUTION! Work area

- ➔ Ensure there is enough space in the work area.
- ➔ Keep the work area clean.

Electrical safety

- ➔ Protect the17BP from rain and moisture.
- ➔ Follow the safety instructions printed on the battery and charger.

Safety of persons

- ➔ Ensure a secure standing position. Maintain balance.
- ➔ Make sure that the battery is securely installed before operating the 17BP.
- ➔ Hold the17BP tightly in the hand –
  be prepared for high short-term reaction torques.
- ➔ Do not carry the17BP with the finger on the start button –
  prevent accidental operation.
- ➔ Do not open the battery. Contact with acid will cause injury.
- ➔ Do not look into the laser beam of tools with built-in barcode scanners.
- ➔ Follow generally valid and local safety and accident prevention rules.

Safe working with and around fastening tools

- ➔ Inspect bits for visible damage and cracks.
  Replace damaged bits immediately.
- ➔ Dissconnect the 17BP from the battery before replacing the bits.
- ➔ Only use bits for machine-controlled fastening tools.
- ➔ Make sure that the bits are securely inserted.

1.3 Operator training

All operators must be trained and experienced before operating the 17BP.
The 17BP may be repaired by authorized technicians only.

1.4 Personal protective equipment

When working

- Wear the protective goggles to protect against spurting metal splinters.

Danger of injury by being wrapped up in and caught by machinery

- Wear a hairnet.
- Wear close-fitting clothing.
- Do not wear jewelry.

1.5 Designated use

The 17BP is designed exclusively for fastening and releasing threaded fasteners.

The communication with the controller TMEB-200 / TMEB-COM / TMEC is allowed only over the following interface ports:

Types	Communications
All	IrDA interface port of the tool holder, order no. 935290
17BPW... 17BPX...	WLAN standard IEEE 802.11b
17BPR…	868 MHz with base station, order no. 961300 (EU)
17BPF…	915 MHz with base station, order no. 961301 (NA)

- Do not use it in areas where there is a risk of explosion.
- Do not open it or modify it structurally.
- Only use with accessory parts which are approved by the manufacturer (see 3.3 System overview – optional accessories, page 16).
- Do not use as a hammer or for re-bending.

1.6 Codes and standards

It is mandatory that national, state and local codes and standards be followed.

1.6.1 FCC conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1.6.2 Canada conformity

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1.6.3 EMC

Industrial environment EMC limit class A.

The tool complies with the following EMC standards:

DIN EN 61000-6-4 Emitted interference

DIN EN 61000-6-2 Interference immunity

1.6.4 Data transmission

WLAN

EN 50371:2002
EN 301489-17 V1.2.1
EN 300328 V1.6.1
FCC Part 15.247 / RSS-210

868 MHz

EN 301489-3 V1.4.1
EN 50371:2002
EN 300220 V1.1.1

915 MHz

FCC Part 15.249 / RSS-210

1.6.5 Barcode scanner

- 21CFR1040.10 and 1040.11
  except for deviations in accordance with Laser Notice 50 of July 26, 2001.
- EN60825-1:1994+ A1:2002 +A2:2001
- IEC60825-1:1993+A1:1997+A2:2001

1.7 Noise and vibration

Noise level< 60 dB(A) free speed (without load) according to ISO 3744.
Vibration values < 2.5 m/s² according to ISO 5349.

2 Scope of supply, transport and storage

2.1 Items supplied

Check shipment for transit damage and ensure that all items have been supplied:

1 17BP
1 26 VDC Lithium-ion (Li-ion) interchangeable battery
1 Marking foil
1 This instruction manual
1 Declaration of Conformity
1 Factory test certificate for transducers

2.2 Transport

Transport and store the 17BP in the original packaging. The packaging is recyclable.

2.3 Storage

For short-term storage and for protection against damage.

➔ Place the 17BP in the tool holder.

For storage longer than 100 hours

➔ Disconnect battery from the 17BP.
The battery is discharged by the electronics integrated in the tool.

WARNING!

Danger of explosion from short circuit

- ➔ Protect the17BP and the battery from moisture.
- ➔ Do not bring any electrically conducting objects such as paper clips, coins, keys, nails or screws in contact with the battery contacts.
- ➔ When storing the battery outside the tool or the battery charger, cover the battery contacts.

Object	Time period	Storage temperature	Supplemental information
17BP without battery	No guideline	-25 °C to +40 °C (-13 to 104 °F)	
Rechargeable battery	Short-term	-30 °C to +45 °C (-22 to 113 °F)	
	Long-term, from 1 year	-30 °C to +30 °C (-22 to 86 °F)	30% – 50% store charged. Recharge after 1 year to prevent deep discharging (< 17.5 V).

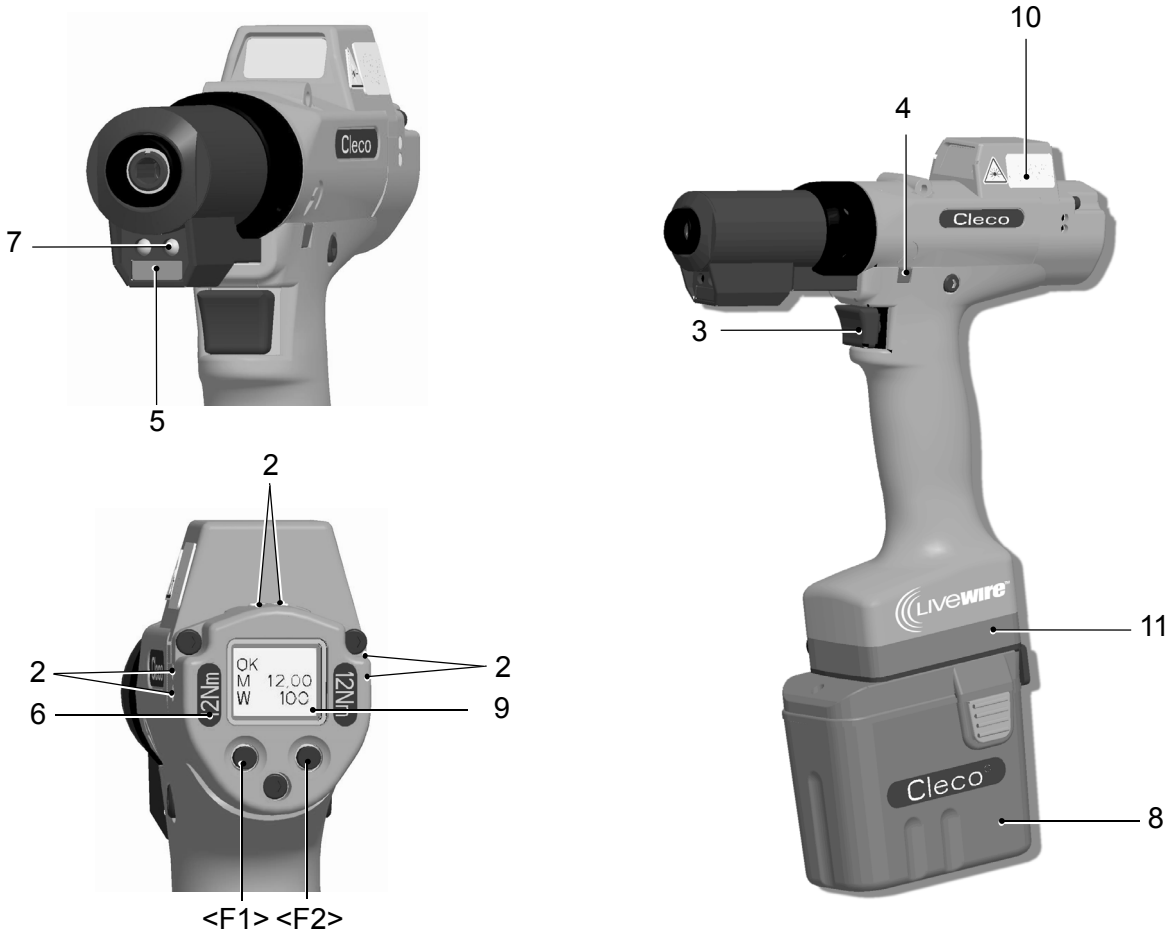
3 Product description

3.1 General description

- Sturdy, brushless motor with resolver.
  Shutoff is torque/angle-controlled.
- LCD display with information on status, torque and angle.
- Green OK and red NOK LED display provides information on the current fastening result.
- LED lighting makes it possible to find the screw point quickly.
- Clockwise/counterclockwise rotation
- Low vibration level
- Servo and fastening electronics are integrated in the 17BP.
- Fastening parameters are set with the TMEB-200 / TMEC controller or a PC.
- Data is transmitted between the controller and tool via infrared (IrDA) or, optionally, via WLAN (IEEE 802.11b), 868 MHz or 915 MHz.
  - Types with wireless transmission:
    Parameters and rundown results are transmitted wirelessly.
  - Types without wireless transmission:
    Parameters and rundown results are transmitted to the TMEB-200 / TMEC control or to a computer simply by placing the 47BA in the tool holder.
- Optionally, the tools are equipped with a 1D Linear barcode scanner.
- Built-in acoustic signal. The signal is activated after barcodes are scanned. It can also be activated after NOK rundowns for a programmable time.

3.2 Operation and functional elements

This chapter describes operational and functional elements and their tasks in the order of their respective item nos.



Item	Designation
<F1>, <F2>	Function keys
2	LED display
3	Start button
4	Reverse switch
5	IrDA (infrared interface port)
6	Set torque – stick-on marking foil
7	LED lights for fast location of the fastening position
8	Rechargeable battery
9	LCD display with information on torque, angle and status
10	Barcode scanner
11	Wireless module

3.2.1 Function keys

Left function key <F1>

- Confirm error message

➔ Press once.

Programmable: Depending on how the key is programmed, actions can be carried out by pressing it briefly.

- Exit menu

➔ Press for two seconds.

Right function key <F1>

- Activate menu

➔ Press until the display shows the *Main menu* (for additional information, refer to 6.3 Operating menu, page 24).

- Select functions, if menu is activated

➔ Press for two seconds. Alternatively, the start button can be pressed.

3.2.2 LED display

The LED display shows the respective operating status and the result of the last fastening sequence (see 5.2 Operating status, page 19):

LEDs	Operating status	Result after screwing cycle
Steady light Green	Active	OK
Steady light Red	Active	NOK
Flashing light Green – low frequency	Energy saver mode	
Off	Sleep	

If Linking is selected on TMEB-200 / TMEC:

Flashing light Green – high frequency	Active / Settings: Linking	Linking OK
Flashing light Red	Active / Settings: Linking	Linking NOK

Software update

During *Software Update*, the actual programming process is indicated by rapid flashing alternating at irregular intervals between red and green.

NOTE

Do not interrupt programming by removing the battery during this phase.

3.2.3 Start button

The start button has 3 functions (Standard for TMEB-200 / TMEC):

- It activates the LED lighting.
  ➔ Press the start button halfway down and hold it.
- It starts the motor, the LED light goes out.
  ➔ Press the start button all the way down.
- It activates the barcode scanner—only for types of the 17BP...S series.

➔ Press the start button all the way down.

3.2.4 Reverse switch

The reverse switch changes the rotation direction of the 17BP:

Clockwise rotation – for screwing in screws
Press reverse switch as far as it will go.
When the start button is pressed *Active* appears on the LCD display.

Counterclockwise rotation – for loosening or screwing out screws
Press reverse switch as far as it will go.
When the start button is pressed *Left* appears on the LCD display.

3.2.5 IrDA interface port

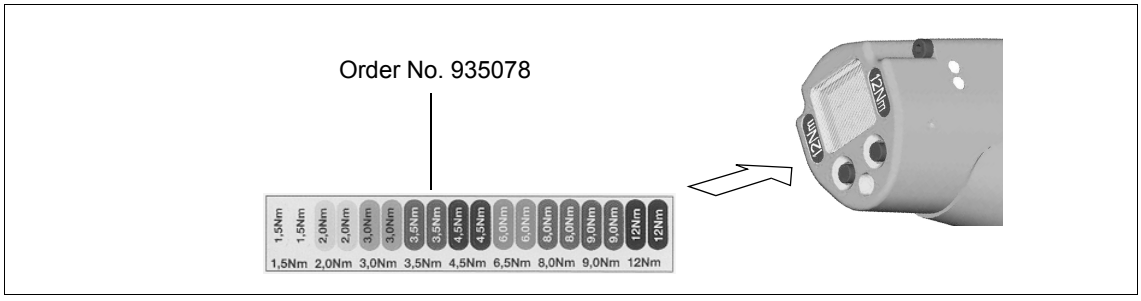
The 17BP communicates with the TMEB-200 / TMEC controller or a PC (TMEB-COM) via the IrDA interface port. For secure data transmission and for programming the 17BP, place the 17BP in the tool holder with IrDA interface port, Order no. 935144. Data transmission is possible in the *Active*, *Energy saver mode* and *Standby* operating modes, but not possible in *Sleep* (see 5.2 Operating status, page 19).

NOTE

If the data transmission has been interrupted, the 17BP reports *Synch error* on the LCD display. 17BP in the tool holder. The complete data transmission is acknowledged on the display with *Remain 512*.

3.2.6 Identification – set torque

To identify the set torque on the 17BP, glue the corresponding marking foil to the right and the left of the LCD display.



3.2.7 LED lighting

LED lighting make it possible to quickly find the screw point.
3 different activation methods are possible. Define the method by programming the TMEB-200 / TMEB-COM / TMEC correspondingly:

- Activation by pressing the start button halfway down (3.2.3 Start button, page 13).
- Time-controlled beginning at start
- You also have the option of disabling it.

The lighting distance is up to 19.7" (500 mm).

3.2.8 Rechargeable battery

For information on the battery, see
4.3 Charging the battery, page 17
4.4 Replacing the battery, page 18
10.4.1 Battery power supply, page 58.

3.2.9 LCD display

See 6 LCD display, page 21

3.2.10 Barcode scanner

For tools of the 17BP...S series, the built-in barcode scanner is a class 2 laser scanner with a wavelength of 650 nm.

CAUTION!

Eye injury from class 2 laser beam

- ➔ Do not look into the laser beam window when the laser is on.
- ➔ Repair any damage immediately.
  Damage of the optical components can cause laser radiation.
- ➔ Modifications to the barcode scanner and procedures not outlined in these operating instructions are strictly prohibited.
- ➔ Take defective devices out of operation immediately.

The barcode scanner reads one-dimensional linear barcodes:

Scanning operation	Acoustic signal
• Successful	50 ms long
• Faulty • Not within 3 seconds • *Canceled* by pressing the start button	3 times in rapid succession

Depending on how the TMEB-200 / TMEB-COM / TMEC is programmed, there are two different operating modes:

Barcode as release for further rundowns

- ➔ Press the start button on the tool; this activates the barcode scanner.
  The successful scan is acknowledged by an acoustic signal.
- ➔ Press the start button on the tool again; this starts the rundown.

If is necessary to read another barcode, proceed as follows.

Barcode not necessary as release for further rundowns

- ➔ From the *Scanner* tool menu, select *Read barcode*.
- ➔ Press the start button on the tool; this activates the barcode scanner. The successful scan is acknowledged by an acoustic signal.
- ➔ Press the start button on the tool again; this starts the rundown.

Alternative: Assign the *Read barcode* function to the left function key <F1> on the tool.

- ➔ Press the left function key <F1> on the tool once.
- ➔ Press the start button on the tool again; this activates the barcode scanner.

Programming the barcode scanner is described in the programming manual of the TMEB-200 / TMEB-COM / TMEC.

3.2.11 WLAN interface port

Tools of type 17BPW…/17BPX… are equipped with an IEEE 802.11b standard WLAN interface port in addition to the IrDA interface port. The tool uses this WLAN interface port for continuous communication with the controller. This interface port is used to transmit both the parameters and the rundown results. Data transmission is possible in the *Active*, *Energy saver mode* and *Standby* operating modes, but not possible in *Sleep* (see 5.2 Operating status, page 19). Programming and setting up the WLAN interface port are described in the programming manual of the TMEB-200 / TMEB-COM / TMEC controller.

As the counterpart, an access point that complies with the IEEE 802.11b/g standard is required.

NOTE

After the tool is switched on, it can take up to 25 seconds until the communication via WLAN is active.

3.2.12 868 MHz interface port (EU)

Tools of the type 17BPR… have an 868 MHz interface port in addition to the IrDA interface port. The tool uses this 868 MHz interface port for continuous communication with the controller. This interface port is used to transmit both the parameters and the rundown results. Data transmission is possible in the *Active*, *Energy saver mode* and *Standby* operating modes, but not possible in *Sleep* (see 5.2 Operating status, page 19). Programming and setting up the 868 MHz interface port are described in the programming manual of the TMEB-200 / TMEB-COM / TMEC controller.

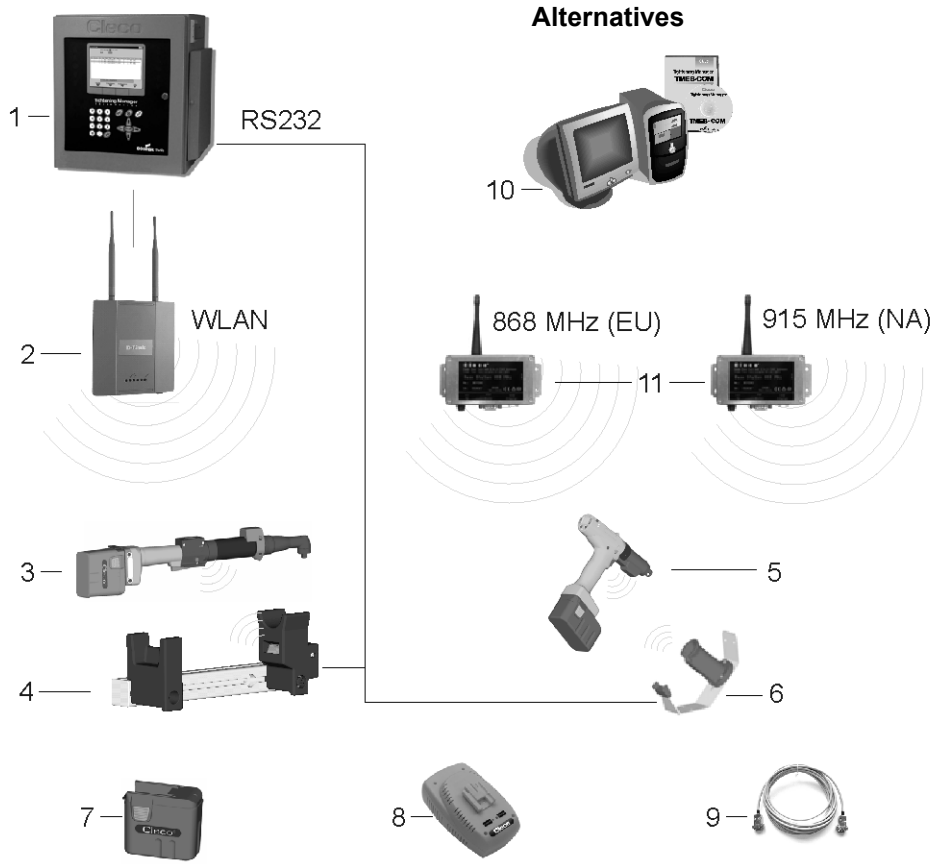
The base station, Order no. 961300, is required as the remote station.

3.2.13 915 MHz interface port (NA)

Tools of the type 17BPF… have an 915 MHz interface port in addition to the IrDA interface port. The tool uses this 915 MHz interface port for continuous communication with the controller. This interface port is used to transmit both the parameters and the rundown results. Data transmission is possible in the *Active*, *Energy saver mode* and *Standby* operating modes, but not possible in *Sleep* (see 5.2 Operating status, page 19). Programming and setting up the 915 MHz interface port are described in the programming manual of the TMEB-200 / TMEB-COM / TMEC controller.

The base station 961301 is required as the remote station.

3.3 System overview – optional accessories



Item	Designation
1	TMEB-200 / TMEC – Controller for electric nutrunner
2	Access point – Order no. 543995 (NA) Order no. 961323 (EU)
3	Tool series 47BA
4	Tool holder Order no. 935290 – with IrDA interface, RS232 connection cable Order no. 935395 – without IrDA interface, RS232 connection cable
5	Tool series 17BP
6	Tool holder Order no. 935144 – with IrDA interface, RS232 connection cable Order no. 935396 – without IrDA interface, RS232 connection cable
7	Interchangeable battery, Li-ion, 26 V – Order no. 935377
8	Battery charger, Li-ion, 26 V (110 – 230 VAC) – Order no. 935391
9	RS232 extension cable (IrDA) Order no. 935154 – 9.84" (3 m) Order no. 935155 – 19.7" (6 m) Order no. 935157 – 32.8" (10 m)
10	TMEB-COM – Computer with PC software
11	Base station Order no. 961301 – 915 MHz (NA) Order no. 961300 – 868 MHz (EU)

Overview EC tool_optional equipment

4 Before initial operation

The 17BP has been configured by Cooper Power Tools. A setting for your specific screw joint needs must only be made with the TMEB-200 / TMEC controller or a PC by a qualified person. For more information, refer to the TMEB-200 / TMEB-COM / TMEC programming manual.

4.1 Setting up tool holder

➔ Mount the tool holder on a stable base.

For tool holder with IrDA interface port:

➔ Select the location in such a way that no outside light shines onto the tool holder. This can inhibit data transmission.

➔ Lay the connection cable in such a way that there is no danger that persons can trip.

4.2 Ambient conditions

Ambient temperature	0 °C (32 °F) to maximum +40° C (+104° F)
Humidity	0 to 80 %, not with dew
Working height	up to 1000 m above sea level

4.3 Charging the battery

Charge fully before first use.

Battery is only partly charged when delivered.

➔ Fully charge before first use.

WARNING!

Electrical shock, overheating or leakage of corrosive liquid from the battery can occur when using incorrect chargers or batteries.

➔ Use only original CLECO batteries and chargers. They are designed for use together.

NOTE

With proper use, the battery can be charged at least 800 (60% capacity) times. Here, the following is important:

➔ Battery charging temperature: 5 °C to +45 °C (+41 °F to +113 °F)

➔ Follow the safety instructions printed on the battery and charger.

➔ Fully charge new batteries or those not used for a long time.

➔ Do not totally discharge the battery (< 17.5 V).

➔ Protect the battery from impact.

➔ Keep the charger and battery contacts clean and dry.

➔ Protect the battery from moisture.

➔ The battery can remain in the charger when not in use: the self-discharging is very low.

➔ Replace used batteries and recycle them (see 12 Disposal, page 62.)

4.4 Replacing the battery

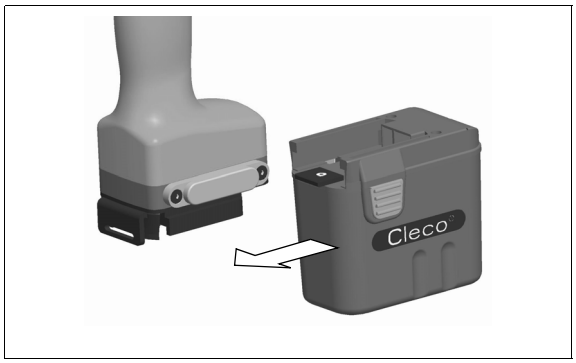


Fig. 4-1:

Inserting the battery

➔ Insert the battery into the tool guide until the catches securely engage.

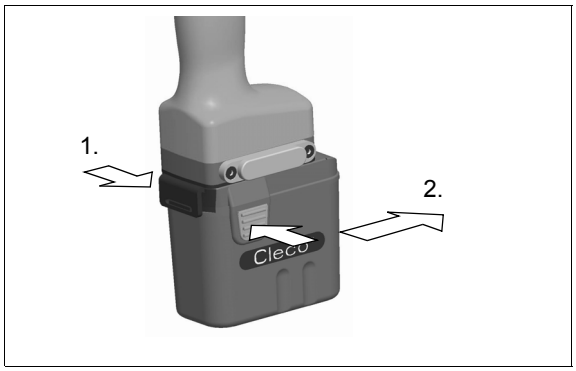


Fig. 4-2:

Removing the battery

➔ Press the catches together and pull the battery out of the handle.

4.5 Changing the screw inserts

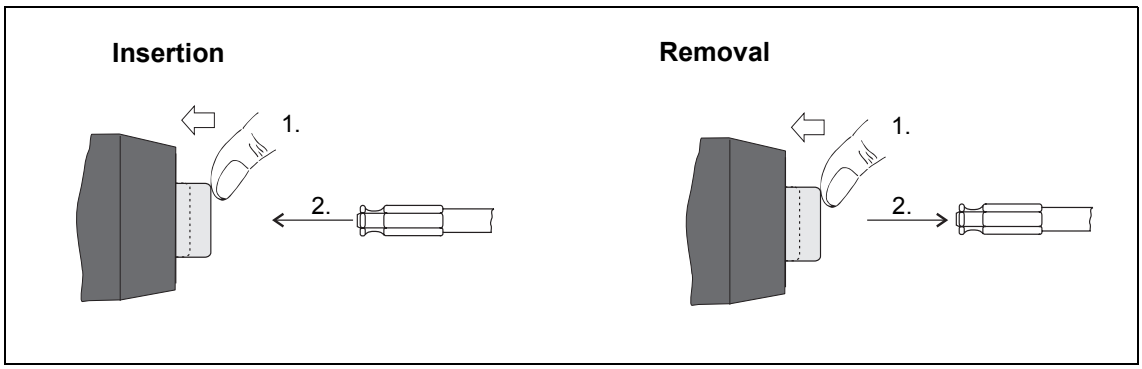


Fig. 4-3

Screw bits (GETA / APEX recommended):
Connection in accordance with DIN 3126, form E 6,3 (¼" shank).

5 First Operation

5.1 Carrying out the rundown

Make sure that the battery is securely installed before operating the 17BP. The 17BP is now ready for use. After you press and release the start button, the LCD display reads *Ready*.

Types with wireless transmission continuously communicate with the controller. The tool automatically receives the parameters and, when the rundown is complete, automatically sends the rundown results to the control system. Programming and setting up the wireless interface port are described in the programming manual of the TMEB-200 / TMEB-COM / TMEC controller.

Types without wireless transmission must be placed in the tool holder when the rundown is complete. The rundown results are transmitted and shown under the *Run screen* menu item.

5.2 Operating status

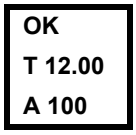
The operating modes change in the following order.
The following functions are available depending on the display:

Operating status	**LED display**	**LCD display**	**Function**
Active	Steady light: Red – Rundown NOK Green – Rundown OK	On	Screws Data transmission
Automatic switch to the following after 1 minute idle time:			
Energy saver mode	Flashing light Green	Off	Data transmission
Automatic switch to the following after further 10 minutes:			
Sleep	Off	Off	Data transmission not possible
Manual switch from *Sleep* to *Active*: Press down start button and hold down for approx. 1 second. To switch off the 47BA manually, pull out the battery.			

6 LCD display

The LCD display on the tool is divided into the result display, status display, operating menu and system error messages.

6.1 Result display



The LCD display consists of a three lines, each with 6 characters, to display the status, torque and angle. The result display is updated after the rundown ends.

First line – result:

OK	Result is OK
NOK	Result is not OK
OFF	Torque transducer offset error
CAL	Torque transducer calibration error
ENC	Angle encoder error
IP	Current overload in output section
IIT	Requested motor output is too high
TMAX	Maximum fastening time exceeded
RC	Rundown canceled by disabled start signal
TS	Depth sensor signal was enabled at start or was subsequently disabled during the rundown (only for 17BP series)
Tq<	Torque too low
Tq>	Torque too high
A<	Angle too low
A>	Angle too high
Error	Error occurred

The status is displayed in alternation with the Application being used.

Second line – Shut-off torque in Nm:

T	Final torque

Third line – Shut-off angle in degrees:

A	Final angle

For types with wireless transmission, an interrupted data connection to the TMEB-200 / TMEB-COM / TMEC is indicated by the ⚿ symbol at the top right of the LCD display.

6.2 Status display

The status display is divided into the "Standard" and "Linking" modes. "Standard" is selected if "Linking" is not enabled on the TMEB-200 / TMEB-COM / TMEC (see **`Advanced Application Builder\Linking`**). The application is selected at the Run Screen or via the App. selection inputs.

Ready	No other status messages take priority. The tool is ready.
Remain 512	Number of remaining rundowns that can still be carried out until the rundown data memory is full and the rundown data have to be transmitted to the TMEB-200 / TMEB-COM / TMEC.
Emerge Strate	*Emergency strategy* active. Is displayed if emergency strategy is currently active and with that no communication with TMEB-200/TMEB-COM/TMEC is necessary. On Tool are the latest 512 rundown results stored.
Job comple Sync	All fastening sequences have been completed. ➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC.
No Job Sync	No fastening sequences have been initialized. ➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC.
Parame not set	No fastening sequence parameters have been set. ➔ Check the Application and Tightening group selected on the TMEB-200 / TMEB-COM / TMEC to determine whether the tool settings and process programming have been carried out.
App locked Sync	Application locked. ➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC.
Reject Releas Sync	Reject Release active. The tool has been programmed in **`Advanced Application Builder\Reject Release`**. ➔ Depending on the programming, unlock the tool via the external input *NOK release* or Release on Backoff. To unlock via the external input *NOK release*, set the external input and synchronize it with the TMEB-200 / TMEB-COM / TMEC.

Sync Error

Error in last data synchronization with the TMEB-200 / TMEB-COM / TMEC.

➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC again.

Tool not Init

Tool has not yet been synchronized with a TMEB-200 / TMEB-COM / TMEC.

➔ Carry out initial synchronization of the tool with the TMEB-200 / TMEB-COM / TMEC.

Input Enable Missin

The *Tool Enable* input is missing.

➔ Set the *Tool Enable* input.

➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC.

This message can appear only if **`External Tool Enable`** has been activated in **`Advanced Application Builder\System settings`**.

Need Part ID

Tool disabled since no valid barcode data has been set.

➔ Send the barcode to the TMEB-200 / TMEB-COM / TMEC.

➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC once again.

Additional messages in "Linking" mode

N.Pos1 of 3 Rpl 0

First line: The next position to be fastened.
Second line: Number of positions.
Third line: Number of repetitions at this position in case of an NOK rundown.

Linkin No Result

Linking has been cancelled without a batch result.
Not all of the positions in the tightening group have been programmed.

➔ Check the Application and Tightening group selected on the TMEB-200 / TMEB-COM / TMEC to determine whether the tool settings and process programming have been carried out.

Linkin OK

Linking result OK.

Linkin NOK

Linking result NOK.

Linkin locked Sync

Linking disabled.

➔ Synchronize the tool with the TMEB-200 / TMEB-COM / TMEC.

6.3 Operating menu

6.3.1 General

The operating menu on the tool is divided into a main menu and submenus. You can navigate through the menus using the two function keys below the LCD display. In the following description, <F1> is used for the left function key and <F2> is used for the right function key. The menu is activated by pressing the right function key, <F2>. The menus can be disabled by configuring appropriate parameter in the controller.

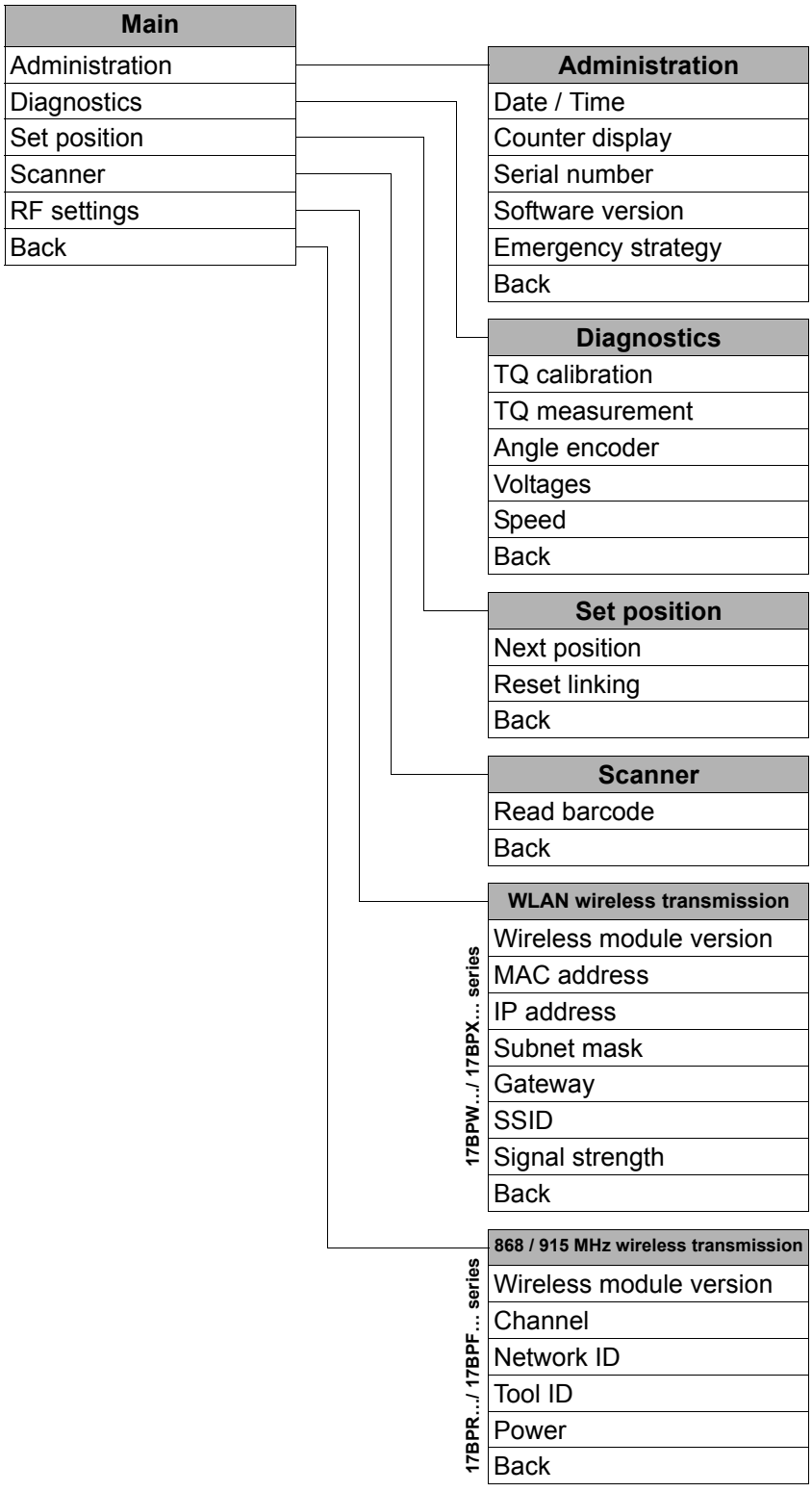
Basic functions:

- ➔ <F2>: Activate main menu.
- ➔ <F1>: Go to previous menu item.
- ➔ <F2>: Go to next menu item.
- ➔ Press <F1> longer than 2 seconds
  to go to the next higher menu level. If the main menu is activated, the system goes into production mode.
- ➔ Press the start button or <F2> longer than 2 seconds
  to activated the highlighted item or execute the highlighted action. Actions that start the tool can be carried out only by pressing the start button.
- ➔ If the menu is enabled, no rundowns are possible.
- ➔ Each submenu has an entry for *Back*.

Back

Enables the main menu.

6.3.2 Structure



6.3.3 Main menu

>Main Admini strati

Administration – General items such as Date/Time, Counter display, etc.

>Main Diag- nostic

Diagnostics – Diagnostic functions for the tool.

>Main Posi- tion

Position – Selects the position to be used next.

>Main Scan- ner

Scanner – Deletes a previously read barcode and activates a new read cycle.

>Main RF-SET

RF settings – Displays the settings used for wireless transmission.

6.3.4 Administration submenu

Time 07:47 30.09

Date/Time
Displays the tool system time.
The system time can be displayed in US or European format.

➔ Refer to "Setting the system time on the TMEB-200 / TMEB-COM / TMEC under **`Administration\Date\Time`**.

Counte 99 999999

Counter display
The tool counter display is incremented after each rundown throughout the service life of the tool.

➔ Refer to "Counter display on the TMEB-200 / TMEB-COM / TMEC under **`Diagnostics\Tool\Tool Memory`**.

S/N 000000 245

Serial number
Displays the tool serial number.

➔ Refer to "Serial number on the TMEB-200 / TMEB-COM / TMEC under **`Tool`** or **`Diagnostics\Tool\Tool Memory`**.

Vers. V1.00. 00

Software version on controller board
Displays the installed software version.

Servo V:T108 N00015

Software version on servo
Displays the installed software version.Displays the installed software version.

NOTE

The emergency strategy can activated only if *Emergency Strategy* has been enabled on the TMEB-200 / TMEB-COM / TMEC under **`Advanced Application Builder\System settings`**.

Emerge Strate locked

Emergency strategy disabled.

➔ Enable the emergency strategy on the TMEB-200 / TMEB-COM / TMEC under **`Advanced Application Builder\System settings\Enable emergency strategy`**.

Emerge Strate Off

Emergency strategy off.
If it has been enabled on the TMEB-200 / TMEB-COM / TMEC under **`Advanced Application Builder\System settings\Enable`** *emergency strategy*, you can switch the emergency strategy on and off using the tool start button or by pressing <F2> for 2 seconds. The Emergency strategy is disabled automatically when the tool links to the TMEB-200 / TMEB-COM / TMEC

Emerge Strate On

Emergency strategy on.
If the emergency strategy is enabled and *Linking* is disabled, the fastening parameters of the last selected Application are used. For *Linking* operating mode, all steps are used with the corresponding parameters of the last selected Tightening Group.
The memory of the tool stores data from up to 512 rundowns. If more rundowns than this are executed while the Emergency strategy is active, the oldest results are always discarded once 512 rundowns have been recorded.

Emerge Active

Emergency strategy active. Is displayed during fastening.

6.3.5 Diagnostics submenu

Cal OK
K 1.11
O 0.00

TQ calibration
This test function cyclically recalibrates the system with the values used immediately before the start of a rundown. For this, the tool must not be tensioned!
First line: Calibration test and status.
Second line: TQ calibration voltage.
Third line: Offset voltage. If a value lies outside the tolerance range, the corresponding error is displayed.

Value	Rated value	Tolerance
Calibration offset	0 V	± 45 mV
TQ calibration voltage:	1.122 V	± 32 mV

Torque
T 5.57
T 8.23

TQ measurement
In this test function, after the start button is pressed, the same calibration is carried out as immediately before the start of a rundown. For this, the tool must not be tensioned!
Then, the tool starts with speed "0". The torque is continuously measured and displayed until the start button is released.
Second line: Current torque.
Third line: Peak value, highest value since the start button was pressed.

Angle
A 360
OK

Angle encoder
The start button starts the tool at 30% of the maximum speed. After one revolution of the output shaft (nominal angle 360°), measured with the resolver, the tool is stopped. During a fixed dwell time of 200 ms, any further angle pulses occurring are traced. The total result is shown as Actual Angle. If the test run is not terminated by a monitoring criterion and the batch result is greater than or equal to 360 degrees, it is evaluated and displayed as OK. Monitoring criteria are the torque and a monitoring time.

If the torque exceeds 15 % of the calibration value (even during the dwell time), or if the monitoring time of 4 seconds expires, the test run is terminated with a *TQ>* or *TMAX* result. However, you specifically need to check whether the output shaft has actually turned by the value indicated (e. g. by placing a mark on the spindle). If the angle reached by the output shaft does not agree with the value displayed, either the angle factor has been entered incorrectly or the resolver is defective.

Voltage
V26.00
L18.00

Voltages
Second line: Current battery voltage. To ensure high utilization potential, this voltage is monitored continuously during fastening operation. If the voltage drops below limit, a warning output on the tool.
Third line: Programmed value. This can be changed using the TMEB-200 / TMEB-COM / TMEC under **`Tool`**.

Speed Rpm466 T 0.02

Speed
The start button starts the tool at the maximum speed.
Second line: Current output shaft speed.
Third line: Current torque.
Rotational speed measurement is based on the angle information of the resolver. If you release the start button, the tool stops. As a safety function the torque is monitored by the tool transducer. If it exceeds 15 % of its calibrated value, the speed measurement is terminated.

6.3.6 Set position submenu – only with Linking enabled

<Posit Change Positi

Selects the position to be used next.

Select Positi 2/6

You can skip the position.
You can select the position to be used next using the function keys:

- → <F1>: Activate the previous position.
- → <F2>: Activate the next position.
- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

>Posit Reset Positi

Reset linking to position 1. The operator could terminate linking.

6.3.7 Scanner submenu – only for types of the 17BP...S series

<Scann Activa Scanne

Scanner – Deletes a previously read barcode and activates a new read cycle.

- → Press the start button or <F2> longer than 2 seconds.

6.3.8 WLAN wireless transmission submenu – only for types of the 17BPW… / 17BPX… series

The WLAN RF settings submenu shows the settings being used.
If no actions are carried out, the menu is automatically exited after 60 seconds.

Programming the RF settings for WLAN data transmission is described in the programming manual of the TMEB-200 / TMEB-COM / TMEC.

Versio **#27173** **Dec 1**

Displays the installed software version of the wireless module.

MAC **00302e** **e162f8**

MAC address display

IP 010 **.122.0** **77.110**

IP address display

Sub255 **.255.2** **40.0**

Subnet display

Gat010 **122.0** **61.001**

Gateway display

SSID **CPT**

SSID display. Only the first 12 characters are displayed.

N: 34 **S: -60** **L: -94**

When the start button is pressed, the current wireless signals are displayed.

17BPW… / 47BAW…:
N = Ratio of signal strength to ambient noise (dB)
S = Signal strength (dBm)
L = Ambient noise (dBm)

17BPX… / 47BAX…:
N = Signal strength (%)
S = Signal strength (dBm)

6.3.9 868/915 MHz wireless transmission submenu – only for types of the 17BPR…, 17BPF… series

The 868/915 MHz RF settings submenu shows the settings being used. If no actions are carried out, the menu is automatically exited after 60 seconds.

Programming the RF settings is described in the TMEB-200 / TMEB-COM / TMEC programming manual.

Versio B868 MC-tin

Displays the installed software version of the wireless module.

Chan- nel 1/3

Displays the radio channel being used and allows you to configure settings.
With 868 MHz, you can select channel 1 – 3.
With 915 MHz, you can select channel 1 – 8.

- → <F1>: Activate a lower channel.
- → <F2>: Activate a higher channel.
- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

NOTE

The channel must match the set channel of the base station.

Networ ID 1/16

Defines the network identification. You can operate no more than 4 tools per network ID.

- → <F1>: Activate a lower network ID.
- → <F2>: Activate a higher network ID.
- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

NOTE

The network ID must match the set network ID of the base station.

Tool ID 1/4

Displays the tool ID and allows you to configure settings.
You can select a tool ID from 1 – 4.

- → <F1>: Activate a lower network ID.
- → <F2>: Activate a higher network ID.
- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

NOTE

Each tool can be used only once for each base station.

Power 25 mW

Displays the transmission power and allows you to configure settings.

- → <F1>: Activate a lower transmission power.
- → <F2>: Activate a higher transmission power.
- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

For 868 MHz, the maximum transmission power depends on the selected channel. If channel 1 is selected, you can choose between 1, 5, 10, and 25 mW for the transmission power. If channel 2 or 3 is selected, you can choose either 1 or 5 mW for the transmission power. For 915 MHz, you can choose between 1, 5, 10, and 25 mW.

- → Press the start button or <F2> longer than 2 seconds to accept the select and display the next menu item.
- → Press <F1> longer than 2 seconds to delete the selection and exit the menu.

6.4 System error messages

NOTE

If a error is displayed, fastening is disabled until the error is acknowledged with the left-hand button on the tool. In the event of serious hardware errors, the tool is not enabled again even after the error is acknowledged, and must be returned to the manufacturer for repair.

Servo Error Init

Initialization error in tool servo.

- → Remove the battery and then re-insert it. If this does not help:
- → Return tool to manufacturer for repair.

Servo Error PWM

Speed specification from the measuring board to the servo is faulty.

- ➔ Remove the battery and then re-insert it. If this does not help:
- ➔ Return tool to manufacturer for repair.

Servo Error IIT

Too much power is being demanded from the tool.

- ➔ Switch the tool off for a time so that it can cool down.
- ➔ Increase the cycle time, reduce the fastening time or the torque.

Servo Error IOFF

The servo's current sensor is detecting a current offset error.

- ➔ Return tool to manufacturer for repair.

Servo Error Other

Collective servo error caused by hardware.

- ➔ Return tool to manufacturer for repair.

Servo Error IP

The current setpoint has been exceeded.
There may be a short circuit.

- ➔ Return tool to manufacturer for repair.

Servo Error Temp >

The servo has overheated.

- ➔ Switch the tool off for a time so that it can cool down.
- ➔ Increase the cycle time, reduce the fastening time or the torque.

Servo Error TempM>

The tool motor has overheated.

- ➔ Switch the tool off for a time so that the motor can cool down.
- ➔ Increase the cycle time, reduce the fastening time or the torque.

Servo Error Voltag

Operating voltage is outside the admissible range.

- ➔ Change the battery. If this does not help:
- ➔ Return tool to manufacturer for repair.

Servo Error Curr>

Current at servo output stage is too high.
There may be a short circuit.

- ➔ Return tool to manufacturer for repair.

Servo Error Angle

Tool angle encoder is sending incorrect signals to the servo amplifier.

- ➔ Return tool to manufacturer for repair.

Low voltag warnin	Warns that battery is running low. ➔ Recharge battery or replace it with one that is already charged.
Tool Error Counte	The rundown counter could not be read or written to. ➔ Return tool to manufacturer for repair.
Tool Error Ident	Tool memory could not be read. ➔ Return tool to manufacturer for repair.
Tool Error Start	Two-stage start button defective. ➔ Return tool to manufacturer for repair.
Transd Ref.V. Error	Transducer reference voltage error. ➔ Return tool to manufacturer for repair.
Trans CAL Error	Transducer calibration voltage error. Tool was not discharged at time of calibration. ➔ Allow tool to discharge and try again. If this does not help: ➔ Return tool to manufacturer for repair.
Trans Off Error	Transducer offset voltage error. Tool was not discharged at time of calibration. ➔ Allow tool to discharge and try again. If this does not help: ➔ Return tool to manufacturer for repair.
Unknow Error	General collective error. ➔ Return tool to manufacturer for repair.

7 Maintenance

7.1 Cleaning instructions

For tools with a built-in barcode scanner, the window must be free of dirt.

➔ Clean it regularly—or immediately, if it becomes dirty—using a damp cloth and a conventional window cleaner. Do not use acetone for cleaning. A dirty window may make it impossible to read barcodes.

7.2 Service schedule

Regular maintenance reduces operating faults, repair costs and downtime. In addition to the following service schedule, implement a safety-related maintenance program that takes the local regulations for repair and maintenance for all operating phases of the tool into account.

CAUTION!

Danger of injury due to unintentional activation
– before service - disconnect the 17BP from the battery.

After … fastening cycles[1)]	Actions
100.000	➔ Check to ensure the battery adapter, scanner and radio adapter are seated securely. ➔ Check the tool and battery for damage. ➔ Check to ensure scanner window is transparent. ➔ Check to ensure battery contacts are clean. ➔ Check to ensure battery charger is clean. ➔ Check the gearing for leaks
500,000	➔ Use grease-dissolving agent to clean the gearing components and then regrease, see 9.4 Gear, page 50. ➔ Check the gearing components for wear and replace if necessary. ➔ Check battery guide, locking mechanism and contacts for wear and replace if necessary.
1 million	➔ Use grease-dissolving agent to clean the gearing components and then regrease, see 9.4 Gear, page 50. ➔ Check the gearing components for wear and replace if necessary. ➔ Check battery guide, locking mechanism and contacts for wear and replace if necessary. ➔ Recommendation: Recalibrate tool, see 11.1 Recalibration, page 71.
2.5 million	➔ General overhaul. Send it to Cooper Power Tools.

1) For the number of fastening cycles, refer to the counter display in 6.3.4 Administration submenu, page 26

7.3 Lubricants

For smooth function and a long service life, use of the correct grease type is essential.

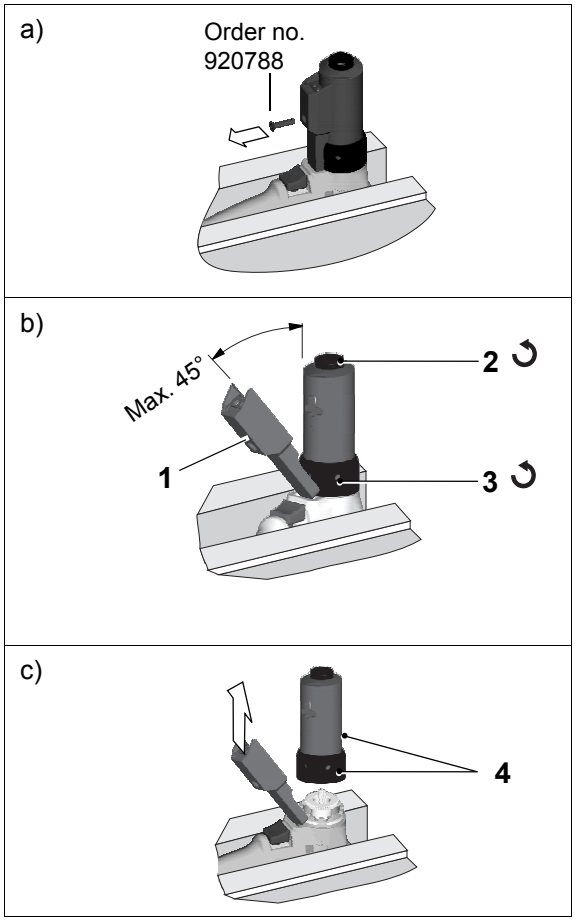
Grease lubricants according to DIN51502 /ISO3498

Order no.	Packing unit [kg]	DIN 51502	ARAL	BP	elf	Mobil	KLÜBER LUBRICATION	SHELL	Nye Lubricants, Inc.	Dow Corning
912554	15	G-POH	Aralub FD00	Energrease HTO	GA 0 EP Expa 0	Mobilplex 44	–	Special Gear H	–	
933027	1	KP1K	–	–	–	–	Microlube GL 261	–	–	
912724	1	K-F2K	–	–	elf Multi MoS_2	–	UNIMOLY GL 82	–		Molykote BR 2
541444	0.8	–	–	–	–	–	–	–	Rheolube 363AX-1	

7.4 Disassembling gear

Notes

If the 17BP is opened, the warranty is voided. Only specialized technicians should be allowed to open the gear for maintenance reasons.



- ➔ Carefully clamp the 17BP on the pistol grip in a vice with plastic jaws.
- ➔ Remove the countersunk screw, order no. 920788. Size 2.5 (internal hexagon).
- ➔ After the maintenance of the drive, tighten the countersunk screw: 1.6 – 1.9 Nm.
- ➔ Fold back **1** as shown.

Note!

Do not open it beyond the prescribed angle, as otherwise the internal, flexible board will be damaged.

- ➔ Unscrew **2** counterclockwise, size 28.
- ➔ Unscrew **3** counterclockwise. ø 42.5; Order no. 933336
- ➔ Completely remove **4**.

8 Troubleshooting

Problem	Possible cause	Action
General – Tool		
Tool does not start if reverse switch is active.	Backoff speed parameter is set to 0 rpm.	➢ Adjust the backoff speed value in the *Standard Application Builder* screen of the controller.
Tool light not active.	Deactivated by parameter setting.	➢ Adjust the parameter for *Tool light* in the *Advanced Application Builder/System Settings* screen of the controller.
Operating menu of tool not, or only partly, enabled.	Disabled by parameter setting.	➢ Activate the *Enable Tool menu* parameter in the *Advanced Application Builder/System Settings* screen of the controller.
Free speed parameter value is not reached.	Battery voltage is too low.	➢ Use a fully charged battery.
Could not reach the expected number of rundowns with one battery charge.	Battery is not fully charged.	➢ Use only fully charged batteries.
	Low voltage warning is not set to minimum value.	➢ In the *Tool Setup* screen of the controller, set the value for L*ow Level* to 17.5 Volts.
	During tightening sequence, high torque is required, for example with coated screws.	➢ If high torque is required for a longer period of time, e.g. for several turns, then the number of rundowns with one battery charge is significantly reduced.
	Battery has already cycled too often.	➢ After 500 charge cycles the capacity is reduced to about 80%.

Problem	Possible cause	Action
Infrared data communication between controller and tool		
No infrared data communication between controller and tool.	Wrong port is selected for connection with the controller.	➢ Check the port settings for infrared (IRDA) communication in the *Communication/Tool* screen of the controller. **Note:** If the settings are changed, it is necessary to press *Accept* <F1> in order to apply the settings.
		➢ Check that the tool holder is connected to selected port.
	Selected port is used for serial data transmission.	➢ In the *Communication/Data Transmission* screen of the controller, check whether serial data transmission is enabled (the protocol is set to anything except NONE), and whether the same port is being used. If so, select a different port or disable serial data transmission. Check all available tools as necessary. The same port cannot be used for serial data transmission and infrared data communication with the tool.

Problem	Possible cause	Action
WLAN data communication between controller and tool		
No WLAN communication between controller and tool.	IP address of tool is not entered correctly on the controller.	➢ Check in the *Communication/Tool* screen of the controller that the IP address of the tool is entered in the *RF Tool IP* field. The IP address of the tool is displayed on the tool in the *WLAN RF settings* submenu. **Note:** If the settings are changed, it is necessary to press *Accept* <F1> in order to apply the settings.
	Tool is not configured with correct WLAN parameter values.	➢ Configure the WLAN settings of the tool in the *Communication/Tool* screen of the controller via infrared communication.
	WLAN network settings of the controller and the access point differ.	➢ In the *Communication/Tool* screen of the controller, check that the settings of the access point match the wireless network settings (Network name, Security, Network key).
	MAC address filter of the access point is active.	➢ Add the MAC address of the tool to the address list of the access point. The MAC address of the tool is displayed on the corresponding label above the battery, and in the *WLAN RF settings* submenu.
	A firewall blocks port 4001.	➢ Reconfigure the firewall so that the specific IP/MAC address of the tool can use port 4001.
	The RF channel at the access point is out of the tool-supported range.	➢ Change the channel setting of the access point to a channel between 1 and 11.
	Tool is already assigned to a different controller.	➢ Check whether any other controller has already established a connection to this tool. That means another controller use same IP address.
WLAN communication partly interrupted.	Distance between access point and tool is too great.	➢ Check the signal strength in the *WLAN RF settings* submenu of the tool. For stable communication, the first value (N) should be greater than 15. If the value is less than 15, move the access point closer to the tool.
	Tool is also assigned to a different controller.	➢ Check whether this tool (IP address) is assigned to any other controller. If so, delete the assignment on the other controller. A tool can only be assigned to one controller.
	Too much traffic on the wireless network.	➢ Reduce traffic on the wireless network. Deactivate torque plot data transmission.

Problem	Possible cause	Action
868 MHz data communication between controller and tool		
No serial communication is possible between the controller and the base station. (Error displayed after *Accept* <F1> is pressed in *Communication/ Tool*.)	Wrong serial cable is used.	➢ Use a null modem cable (crossed).
	Wrong port is selected for connection with the controller.	➢ In the *Communication/Tool* screen of the controller, check the port settings for *RF Serial*. **Note:** If the settings are changed, it is necessary to press Accept <F1> in order to apply the settings.
		➢ Check that the serial cable is connected to the selected port.
	Selected port is used for serial data transmission.	➢ In the *Communication/Data Transmission* screen of the controller, check whether serial data transmission is enabled (the protocol is set to anything except NONE), and whether the same port is being used. ➢ If so, select a different port or disable serial data transmission. ➢ Check all available tools as necessary. The same port cannot be used for serial data transmission and data communication with base station tool.
	Power outlet not active.	➢ Check the voltage at the outlet socket where the base station is plugged in for power supply.

Problem	Possible cause	Action
868 MHz data communication between controller and tool		
No Ethernet communication is possible between the controller and the base station. (Error displayed after *Accept* <F1>) is pressed in *Communication/Tool*.)	Wrong Ethernet cable is used.	➢ A crossover cable is required if the base station is directly connected to the controller. If the base station is connected to a switch, a standard patch cable is required.
	IP address of the base station is not entered correctly on the controller.	➢ In the *Communication/Tool* screen of the controller, check that the IP address of the base station is entered in the *RF Base station* field. If the IP address of the base station is unknown use the *Network Enabler Administrator* program, which is included with each base station. **Note:** If the settings are changed, it is necessary to press *Accept* <F1> in order to apply the settings.
	IP address and subnet mask are not in the same range.	Without network administration, it is necessary for the IP address and subnet mask of the controller to be in the same range as those of the base station. ➢ Enter the same subnet mask for both IP addresses and use the same first three numbers for the IP addresses on both the controller and base station. E.g.: IP address controller: 192.168.1.xxx IP address base station: 192.168.1.xxx Subnet mask: 255.255.255.000
	A firewall blocks port 4001.	➢ Reconfigure the firewall so that the specific IP/MAC address of the tool can use port 4001.
	Base station is already connected to a different controller.	➢ Check whether any other controller has already used the same IP address for RF communication (*RF Base station*).
	Power outlet not active.	➢ Check the voltage at the outlet socket where the base station is plugged in for power supply.
No 868 MHz data communication is possible between controller and tool.	Settings are not configured correctly.	➢ In the *Communication/Tool* screen of the controller, check that *RF settings of the base station* correspond to the settings of the tool, which are displayed in the *868MHz RF settings* submenu of the tool. The settings for *Channel, Network ID* and *Tool ID* must match.
	Distance between base station and tool is too great.	If channel 1 is selected, the distance can be up to 98.4 ft (30 m). If channel 2 or 3 is selected, the distance can be up to 32.8 ft (10 m). ➢ Increase output power on base station and on the tool, or move the base station closer to the tool.

Problem	Possible cause	Action
868 MHz data communication between controller and tool		
RF communication is partly interrupted.	Distance between base station and tool is too great.	If channel 1 is selected, the distance can be up to 30 m. If channel 2 or 3 is selected, the distance can be up to 10 m. ➢ Move the tool close to the base station to check whether communication is successful. If so, increase output power on base station and on the tool, or move the base station closer to the tool.
	Output power is too low.	➢ Increase the output power of the base station and of the tool. If channel 1 is selected, you can choose up to 25 mW for the output power. If channel 2 or 3 is selected, you can choose 1 mW for the output power of the base station and 5 mW for the output power of the tool.
	Too much traffic on the same channel.	➢ Reduce traffic on the wireless network. Deactivate torque plot data transmission.
	Too many tools on the same channel.	➢ Use different channels for different base stations.
	Other 868 MHz devices on the same frequency.	➢ Use a different channel.
Distance for RF communication is too short	Antenna of the base station is not tightened securely.	➢ Manually tighten the base station antenna.
	Output power is too low.	➢ Increase the output power of both the base station and the tool.If channel 1 is selected, you can choose up to 25 mW for the output power. If channel 2 or 3 is selected, you can choose 1 mW for the output power of base station and 5 mW for the output power of the tool.
	Location of the base station bad.	➢ Move the base station to a location where there is an unobstructed line of view between the base station and the tool.

Problem	Possible cause	Action
Barcode scanner on tool		
Barcode scanner does not activate when the start switch is pressed.	Parameter for Part-ID is not set to Enable Interlocked.	➢ In the *Communication/Part-ID* screen of the controller, check that the Enable parameter is set to Enable Interlocked.
	Barcode has already been read.	➢ Activate a further read cycle in the scanner submenu.
		➢ Press the left function key on the tool in order to activate another read cycle. **Note:** Only available if the parameter for <F1> button on Tool is set to Read barcode in the *Advanced Application Builder / System Settings* screen of the controller.

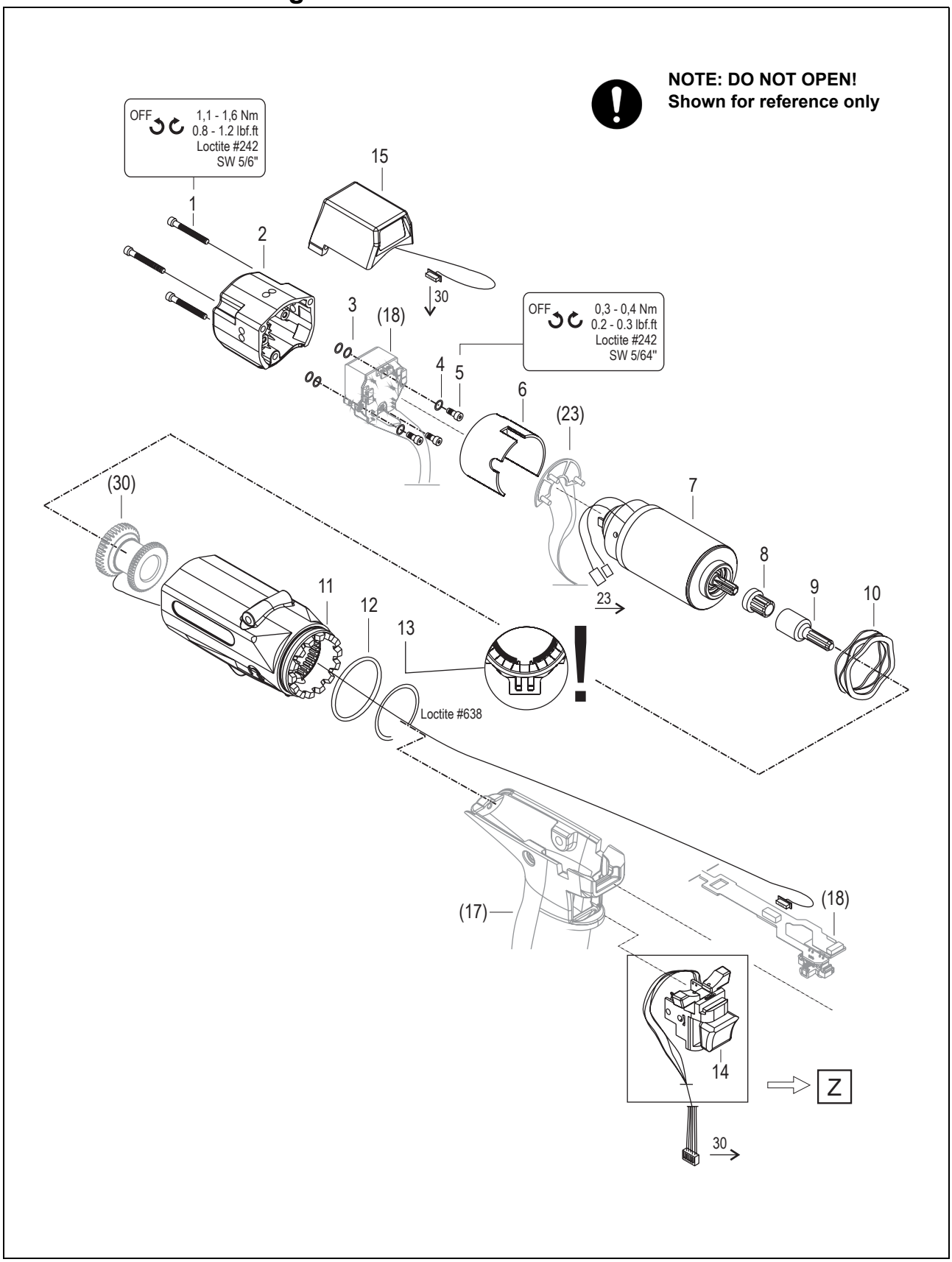
Problem	Possible cause	Action
Barcode scanner on tool		
Barcode is not read.	Barcode scanner window is not clean.	➢ Clean the window by using a damp cloth and a conventional window cleaner.
	Barcode type is disabled by parameter setting.	➢ In the *Communication/Part-ID* screen, check that parameter Barcode Type is set to the appropriate barcode type.

9 Spare parts

Note

Use only original CLECO spare parts. Failure to comply can result in reduced power and increased service requirements. If spare parts not manufactured by us are installed, the tool manufacturer is entitled to deny any warranty claims.

9.1 Motor housing

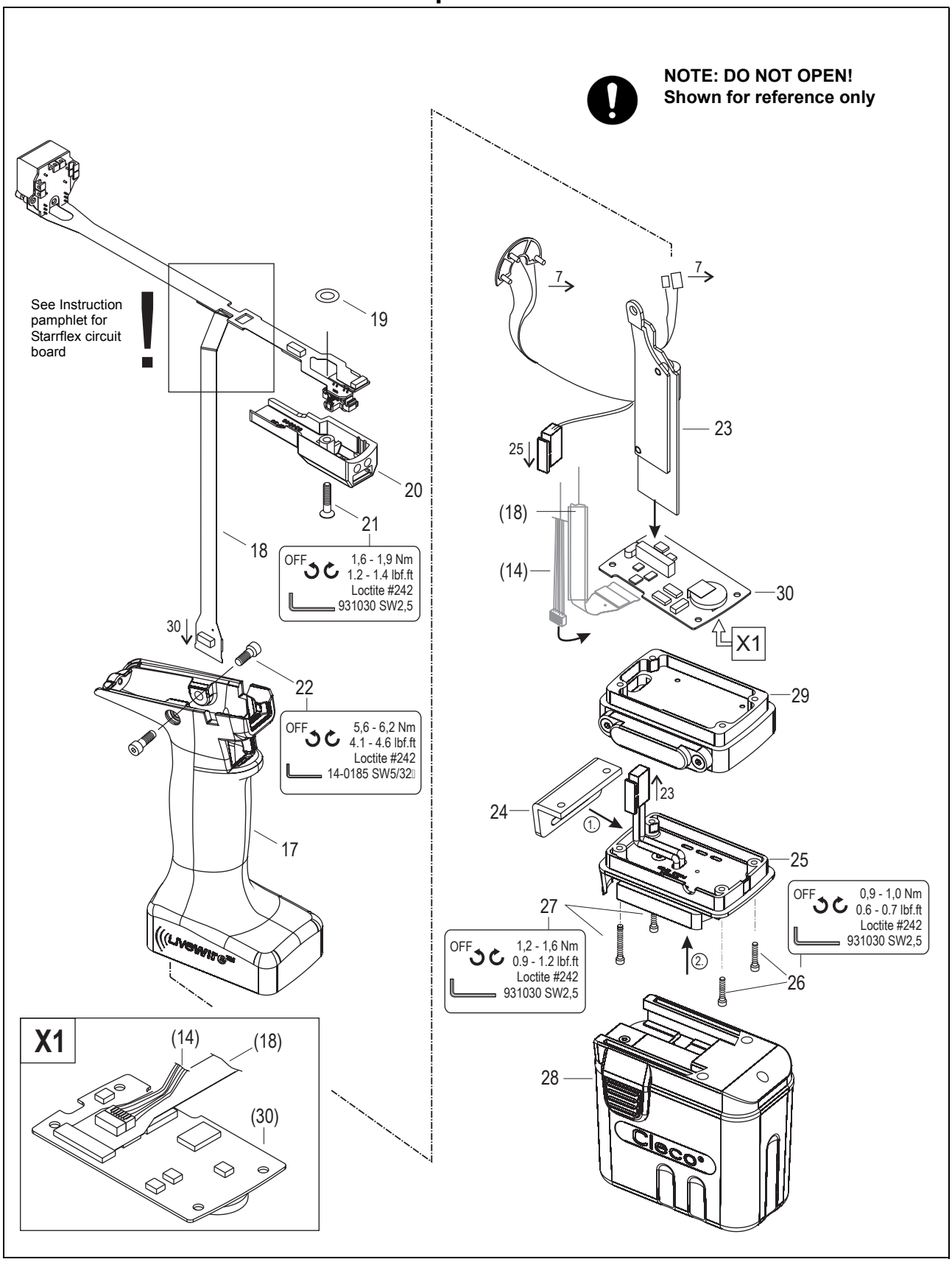


For information only. These parts are not user serviceable.
Refer to Section 11 Service.

Index	2)	Description
1	3	cap screw
2	1	cover asm.
3	4	o-ring
4	2	washer
5	3	cap screw
6	1	tension sleeve
7	1	electric motor
8	1	pinion gear
9	1	adapter shaft
10	1	spring washer
11	1	motor housing asm.
12	1	o-ring
13	1	circlip
14	1	switch asm.
15	1	scanner asm.

2) Quantity

9.2 Handle & electronic components

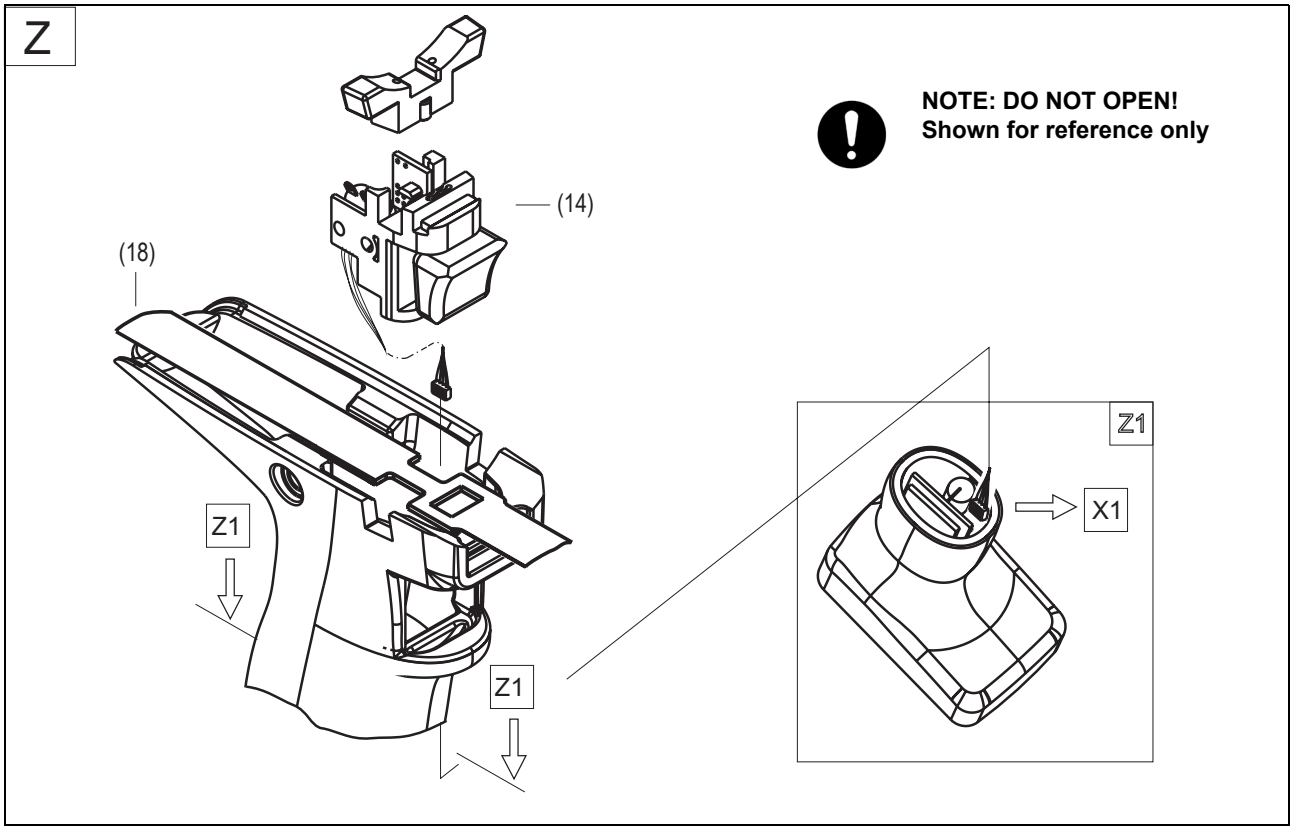


For information only. These parts are not user serviceable.
Refer to Section 11 Service.

Index	2)	Description
17	1	handle
18	1	platine asm.
19	1	o-ring
20	1	housing asm.
21	1	countersunk screw
22	2	cap screw
23	1	servo bar actuator
24	1	holding angle
25	1	accu adapter asm.
26	2	cap screw
27	2	cap screw
28	1	accupack
29	1	adapter asm.
30	1	measuring system asm.

2) Quantity

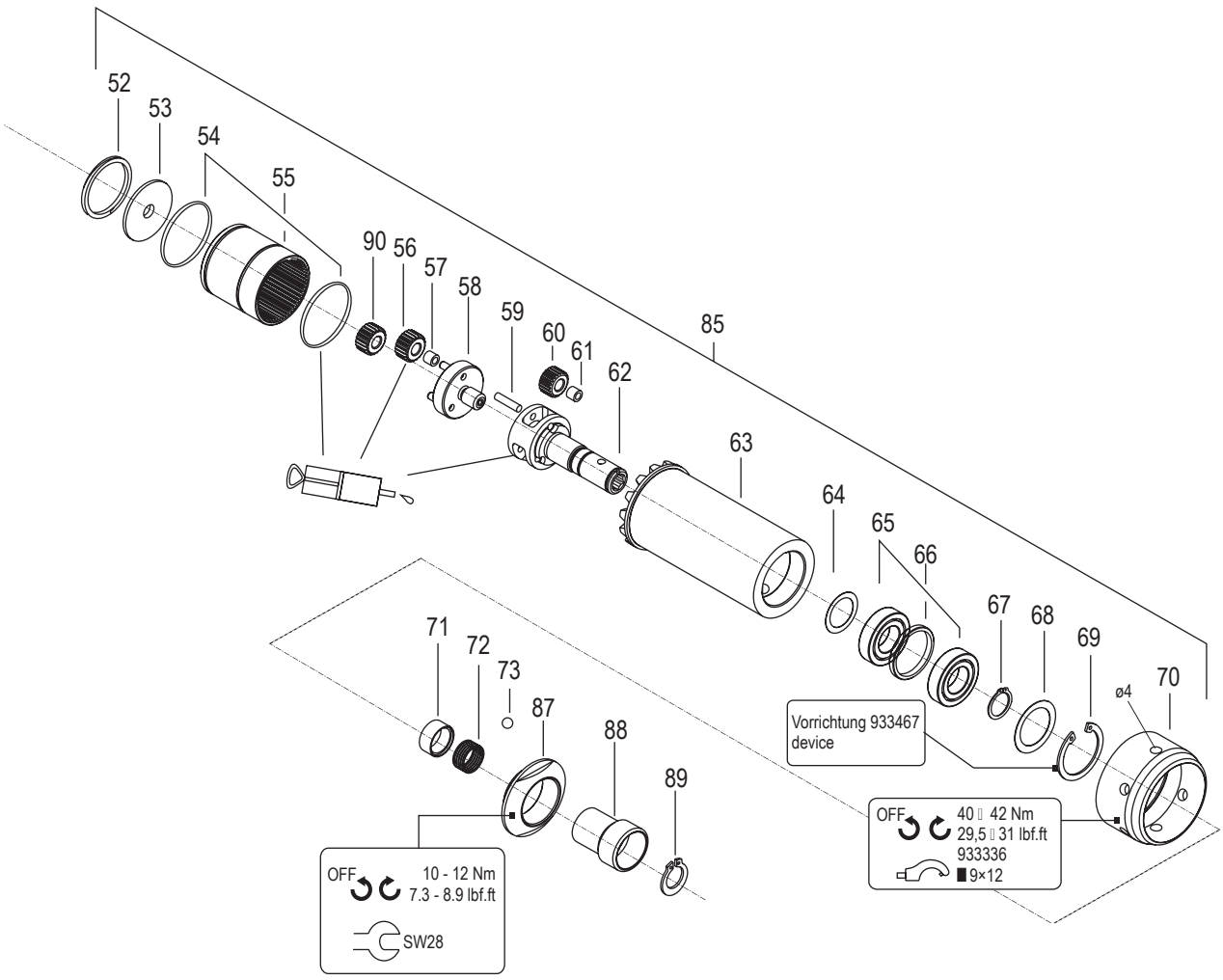
9.3 Switch



9.4 Gear

*

Typ	85	56 (3×)	58	60 (3×)	62	90
17BP…B05Q	935101	541894	542230	541894	935599	541899
17BP…B07Q	935102		542233	541897	935598	
17BP…B09Q	935103	541893	542231	541894	935599	–
17BP…B13Q	935104		542232	541897	935598	

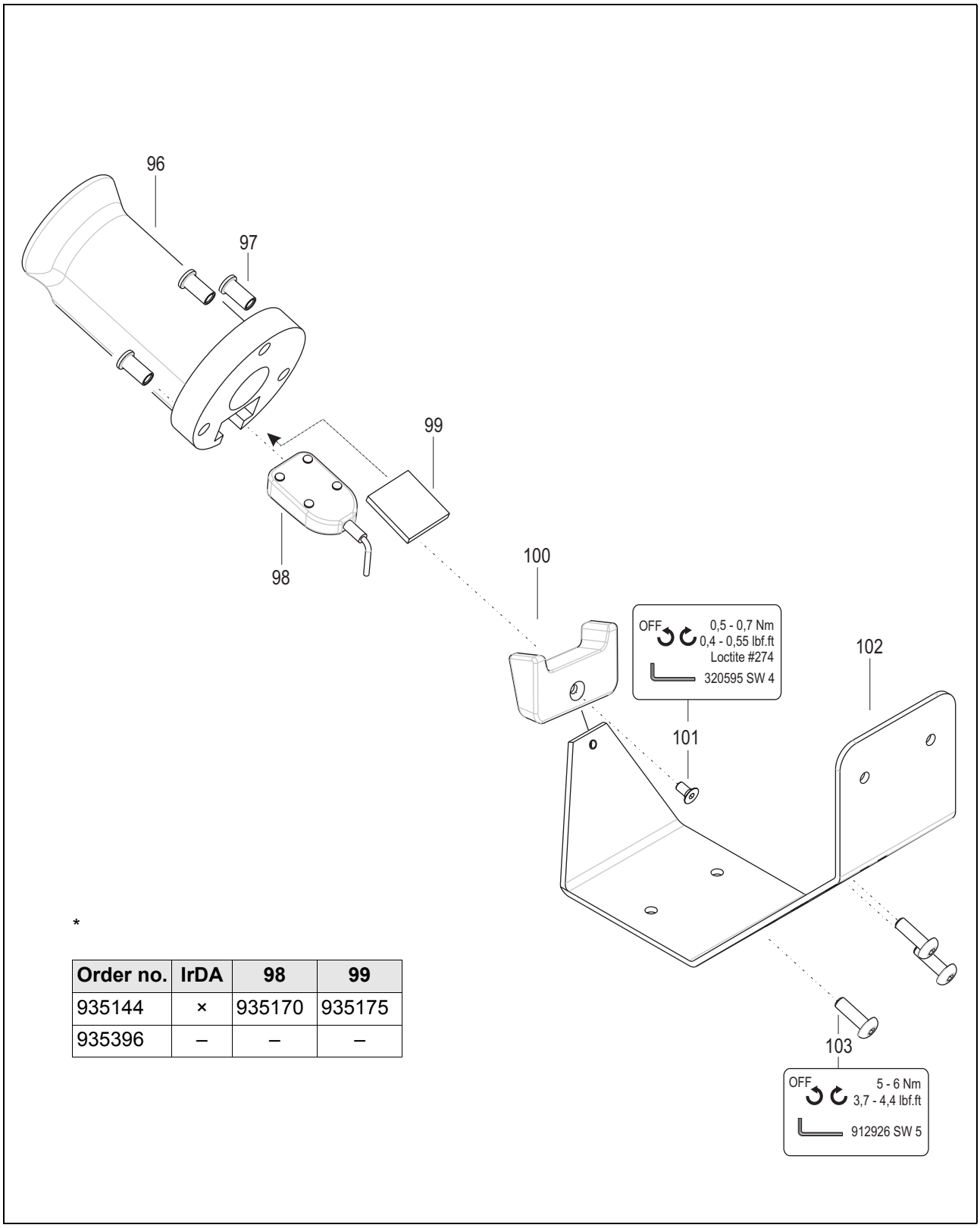


7.3 Lubricants, page 37

Index	1)	2)	•	Description	3)
52	800116	1	1	circlip	25,98X0,94 IR
53	541887	1		washer	
54	542724	2		o-ring	28,24X 0,78
55	542722	1		gear ring	
56	*	3	6	idler gear	
57	923095	3	6	needle bearing	3,X5,X 7,
58	*	1		planet carrier	
59	541888	3	6	cylinder pin	
60	*	3	6	idler gear	
61	923095	3	6	needle bearing	
62	*	1		planet carrier	
63	934841	1		gear case	
64	1019356	1		equalizing washer	13,49X 18,64X 0,23
65	542089	2	4	ball bearing	
66	541775	1		spacer ring	
67	902180	1	1	circlip	12X1, AR
68	922361	1		equalizing washer	17,3X23,8X0,25
69	901602	1	1	circlip	24,X1,2IR
70	541904	1		union nut	
71	935597	1		sleeve	
72	540842	1		compression spring	
73	844265	1		ball	1/8"
87	935080	1		threaded ring	
88	935079	1		sleeve	
89	800135	1	1	circlip	10,03X0,64 AR
90	*	1	1	pinion gear	

1) Order no.
2) Quantity
3) Dimensions
• Recommended spare part for every five (5) tools
* See table, page 50

9.5 Tool holder 935144 with IrDA interface port / 935396 without IrDA interface port



*

Order no.	IrDA	98	99
935144	×	935170	935175
935396	–	–	–

Index	1)	2)	Description	3)
96	935172	1	holster rubber	
97	935174	3	plug	
98	*	1	IrDA-Serial Adapter	57,6KBIT/S
99	*	1	mounting plate	
100	935173	1	screwdriver support	
101	918688	1	countersunk screw	M 6X 12
102	935171	1	screw-on bracket	
103	S902967	3	half round screw	M 8X 25

1) Order no.
2) Quantity
3) Dimensions
* See table, page 52

9.6 Fixture order list

Order no.		Description
933467		Assembly circlip <67>
	933468	Base
	933469	Awl
	933470	Sleeve
933336		Hook wrench Assembly union nut <70>

10 Technical data

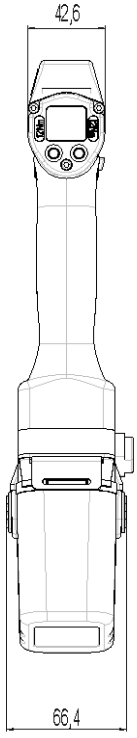
10.1 Dimensions

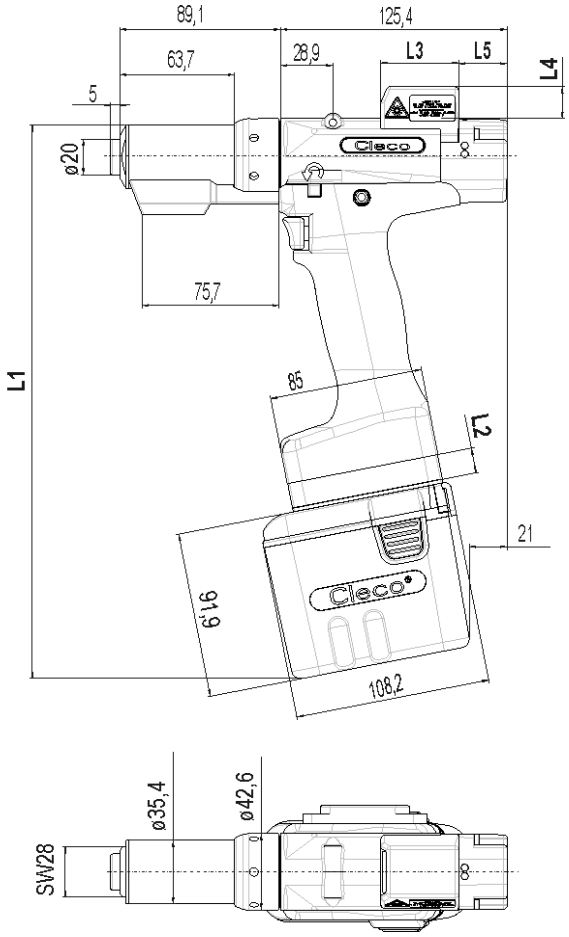
Without scanner

Type	L1	L2	L3	L4	L5
17BPB05Q	294	–	–	–	26.9
17BPB07Q					
17BPB09Q					
17BPB13Q					
17BPWB05Q	308	14.2			
17BPWB07Q					
17BPWB09Q					
17BPWB13Q					
17BPXB05Q					
17BPXB07Q					
17BPXB09Q					
17BPXB13Q					
17BPRB05Q					
17BPRB07Q					
17BPRB09Q					
17BPRB13Q					
17BPFB05Q					
17BPFB07Q					
17BPFB09Q					
17BPFB13Q					

With scanner

Type	L1	L2	L3	L4	L5
17BPWSB05Q	308	14.2	43	17.7	26.9
17BPWSB07Q					
17BPWSB09Q					
17BPWSB13Q					
17BPXSB05Q					
17BPXSB07Q					
17BPXSB09Q					
17BPXSB13Q					
17BPRSB05Q					
17BPRSB07Q					
17BPRSB09Q					
17BPRSB13Q					
17BPFSB05Q					
17BPFSB07Q					
17BPFSB09Q					
17BPFSB13Q					





10.2 Dimensions of tool holder (Optional)

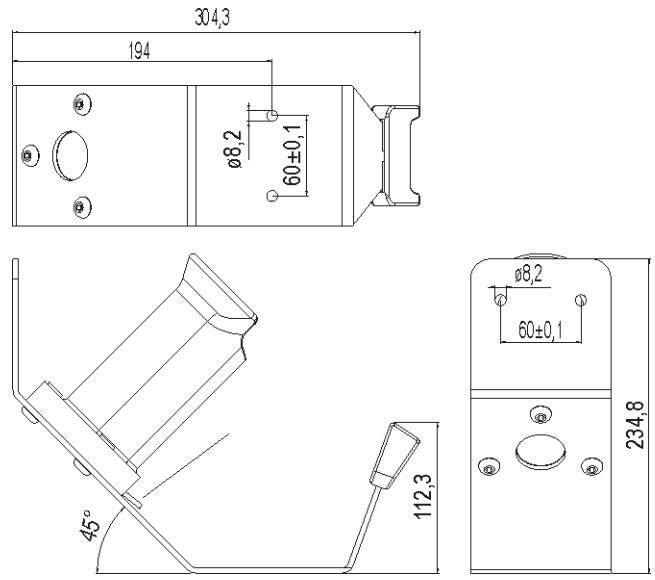


Fig. 10-1: Dimensions of tool holder (mm)

10.3 Performance Data

Type	Recommended torque range		Idling speed	Screw size 8.8	Weight		Calibration data	
					without Rechargeable battery	with Rechargeable battery	Torque (nominal)	Angle pulses (Resolver)
	Nm max.	Nm min.	rpm	mm	kg		Nm	1/ degrees
17BPB05Q	5	3	1639	M4	1.29	1.76	6.41	0.7322
17BPWB05Q					1.39	1.86		
17BPXB05Q								
17BPRB05Q								
17BPFB05Q								
17BPWSB05Q					1.44	1.91		
17BPXSB05Q								
17BPRSB05Q								
17BPFSB05Q								
17BPB07Q	7	3	1161	M5	1.29	1.76	12.57	1.0332
17BPWB07Q					1.39	1.86		
17BPXB07Q								
17BPRB07Q								
17BPFB07Q								
17BPWSB07Q					1.44	1.91		
17BPWXB07Q								
17BPRSB07Q								
17BPFSB07Q								
17BPB09Q	9	3	887	M5	1.29	1.76	12.43	1.3529
17BPWB09Q					1.39	1.86		
17BPXB09Q								
17BPRB09Q								
17BPFB09Q								
17BPWSB09Q					1.44	1.91		
17BPWXB09Q								
17BPRSB09Q								
17BPFSB09Q								
17BPB13Q	13	3	629	M6	1.29	1.76	17.43	1.9091
17BPWB13Q					1.39	1.86		
17BPXB13Q								
17BPRB13Q								
17BPFB13Q								
17BPWSB13Q					1.44	1.91		
17BPXSB13Q								
17BPRSB13Q								
17BPFSB13Q								

10.4 Electrical data

Tool

Protection class III as per DIN EN 61140 (VDE 0140-1)
Degree of protection IP40 as per DIN EN 60529 (IEC 60529)

Tool holder

Protection class III as per DIN EN 61140 (VDE 0140-1)
Degree of protection IP40 as per DIN EN 60529 (IEC 60529)

10.4.1 Battery power supply

Features	Data
Battery type	Lithium ion (Li-ion)
Nominal capacity	1,600 mAh
Rated voltage	26 V
Battery self-discharge	approx. 0.3 mA

10.4.2 Output stage servo electronics

Features	Data
Nominal motor phase current	8 A peak value, sine
Rated output	150 VA
Maximum power	500 VA

10.4.3 Control electronics

Features	Data
Rated voltage	26 V
Nominal current in *Active* operating mode	105 mA
Nominal current in *Standby* operating mode	95 mA
Nominal current in *Power-saving* operating mode	55 mA
Nominal current in *Sleep* operating mode	< 1 mA

10.4.4 IrDA interface port

Features	Data
Supply voltage	5.0 V (4.8 to 5.5 V)
Power consumption	0.30 VA
Maximum current	11 mA
Transmission rate	57.6 Kbps
Parity Bit	None
Data Bit	8 bit
Stop Bit	1 bit
Error check	CRC

10.4.5 Scanner

Features	Data
Scan rate	104 scans/sec. ±12 (bidirectional)
Scan angle	47° ±3 standard / 35° ±3 reduced
Crash resistance	2000 G
Ambient light	107,640 lux
Decode zone (typical)	4 mil 2.54 – 13.97 cm 5 mil 3.18 – 20.32 cm 7.5 mil 3.81 – 33.66 cm 10 mil 3.81 – 44.45 cm 100% 3.81 – 59.69 cm 15 mil 3.81 – 74.93 cm 20 mil 4.45 – 90.17 cm 40 mil 1) – 101.60 cm 55 mil 1) – 139.70 cm
Laser safety	IEC 60825
EMI/RFI	FCC Part 15 Class B EN 55024/CISPR 22 AS 3548 VCCI

1) Depending on the width of the barcode

10.4.6 WLAN data transmission

The WLAN data transmission functions may vary depending on the tool configuration.

Series 17BPW…

Features	Data
Standard	IEEE 802.11b
Safety	WEP64, WEP128, WPA
Range	Typically up to 50 m (164’ 0.5”)
Channels	1 – 11 (2.412 – 2.462 GHz)
Transmission rate	15 dBm typical
Sensitivity	-93 dBm (typ. @ 1 Mbps) -84 dBm (typ. @ 11 Mbps)
Modulation	DSSS/CCK
Standards	EN 300328 EN 60950/2000 EN 301489-1/-17 FCC Part 15

Series 17BPX…

Features	Data
Standard	IEEE 802.11b
Safety	WEP • 64/128 bit encryption WPA/WPA2/802.11 • 128 bit TKIP/CCMP encryption • 8021.x EAP authentication (LEAP, PEAP, TTLS, GTC, MD5, OTP, PAP, CHAP, MSCHAP, MSCHAPv2, TTLS MSCHAPv2)· • Pre-shared key mode (PSK)
Range	Typically up to 50 m (164’ 0.5”)
Channels	1 – 11 (2.412 – 2.462 GHz)
Transmission rate:	16 dBm typical
Sensitivity	-92 dBm (typ. @ 1 Mbps) -82 dBm (typ. @ 11 Mbps)
Modulation	CCK/DQPSK/DBPSK
Standards	EN 300328 EN 60950 EN 301489-3 FCC Part 15

10.4.7 868 MHz data transmission

Features	Data
Frequency	868 – 870 MHz
Channels	Band 1i (869.4 MHz – 869.65 MHz): 1 Band 1k (869.7 MHz – 870.0 MHz): 2
Modulation	GFSK
Output power	Band 1i (869.4 MHz – 869.65 MHz): 1, 5, 10, 25 mW Band 1k (869.7 MHz – 870.0 MHz): 1, 5 mW
Sensitivity (BER < 10-3)	-100 dBm
Wireless transmission rate	38.4 kbps
Range	Band 1i (869.4 MHz – 869.65 MHz): up to 30 m (98.4”) Band 1k (869.7 MHz – 870.0 MHz): up to 10 m (32.8”)

10.4.8 915 MHz data transmission

Features	Data
Frequency	902 – 928 MHz
Channels	8
Modulation	GFSK
Output power	1 – 25 mW 3 – 14 dBm
Sensitivity (BER < 10-3)	-98 dBm
Wireless transmission rate	38.4 kbps
Range	up to 30 m (98.4”)

10.4.9 Torque transducer

Torque is measured by a reaction transducer with expandable measurement strips. The reaction transducer is positioned between the motor and the gears in the handle housing.

Features	Data
Nominal calibration	see 10.3 Performance Data, page 57
Sensitivity	2mV/V
Bridge ohms	1000 Ohm
Precision class	0.5% of final value
Linearity error	+0.25% of final value
Measurement range	-125% to +125% of final value

11 Service

NOTE

If repair is required, send the complete 17BP to Cooper Power Tools. A repair is only permitted by Cooper Power Tools authorized personnel. If the tool is opened, the warranty is voided.

11.1 Recalibration

The type-specific calibration data is saved on the integrated screw electronic system in the delivery state of the CLECO tool. If service is required to change the torque transducer, the screw electronic system or if a recalibration is required, please send the CLECO tool to Cooper Power Tools. This will ensure that after the service work, any required calibration data update is carried out properly.

12 Disposal

CAUTION!

Injuries and environmental damage from improper disposal.
Components and auxiliary materials of the tool pose risks to the health and the environment.

- ➔ Catch auxiliary materials (oils, greases) when drained and dispose of them properly.
- ➔ Separate the components of the packing and dispose of them by segregating them clearly.
- ➔ Follow the locally applicable regulations.

Observe generally valid disposal guidelines such as, in Germany, the Electrical and Electronic Equipment Act (ElektroG) and Battery Ordinance (BattV):

- ➔ Return the tool and defective/used batteries to your company collection facility or to Cooper Power Tools.
- ➔ Do not throw the batteries in household refuse, fire or water.

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Grand Prairie, TX 75050
Phone: (972) 641-9563
Fax: (972) 641-9674

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4121 North Atlantic Blvd.
Auburn Hills, MI 48326
Phone: (248) 391-3700
Fax: (248) 391-6295

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6550 West Sam Houston
Parkway North, Suite 200
Houston, TX 77041
Phone: (713) 849-2364
Fax: (713) 849-2047

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Cooper Power Tools
Sales & Service
3990 East Market Street,
York, PA. 17402
Phone: (717) 755-2933
ext.2600
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Lexington, SC 29072
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