

BATTERY OPERATED HYDRAULIC CRIMPING TOOL

B550-KV B550E-KV
B550BA-KV B550CA-KV B550KA-KV

CE



ENGLISH

OPERATION AND MAINTENANCE MANUAL




FIG. 1




1	LED WORKLIGHT
2	INSULATED HEAD
3	LED WORKLIGHT
4	OPERATING BUTTON
5	PRESSURE RELEASE BUTTON
6	BATTERY
7	BATTERY RELEASE
8	TOUCH BUTTON FOR MENU SELECTION
9	DISPLAY
10	RING FOR SHOULDER STRAP

WARNING SYMBOLS

Tool:

 <p>Before using the tool, carefully read the instructions in this manual.</p>	 <p>When operating the tool, keep hands away from the danger zone.</p>	 <p>Always wear safety gloves when operating.</p>
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Following information applies in member states of the European Union:

USER INFORMATION in accordance with "Directives 2002/95/EC and 2002/96/EC. The 'Not in the bin' symbol above when shown on equipment or packaging means that the equipment must, at the end of its life, be disposed of separately from other waste.

The separate waste collection of such equipment is organised and managed by the manufacturer.

Users wishing to dispose of such equipment must contact the manufacturer and follow the prescribed guidelines for its separate collection. Appropriate waste separation, collection, environmentally compatible treatment and disposal is intended to reduce harmful environmental effects and promote the reuse and recycling of materials contained in the equipment. Unlawful disposal of such equipment will be subject to the application of administrative sanctions provided by current legislation.

Battery:

 <p>Always recycle the batteries.</p>	 <p>Never throw batteries into fire or water.</p>	 <p>Do not discard batteries into domestic refuse or waste disposal.</p>
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1. GENERAL CHARACTERISTICS

		B550-KV	B550E-KV	B550BA-KV B550CA-KV B550KA-KV
Application range		suitable for installing electrical compression connectors on conductors up to 240 mm ² (500 MCM).		
Rated crimping force	kN (US sh. ton)	57,7 (6.48)		
Minimum crimping force	kN (US sh. ton)	54,8 (6.16)		
Minimum operating pressure	bar (psi)	570 (8,267)		
Dimensions (ref. to Fig. 3)	mm (inches)	362 x 361 x 83 (14.25 x 14.2 x 3.3)		
Weight with battery	kg (lbs)	5,3 (11.7)		
Motor	V DC	18		
Operating temperature	°C (°F)	-15 to +50 (+5 to +122)		
Recommended oil		TOTAL DIEKAN 1640 or equivalents.		
Operating speed		twin speed operation and automatic switching from a rapid advancing speed of the ram to a slower, more powerful crimping speed.		
Safety		maximum pressure valve.		
Rechargeable battery	V / Ah / Wh	18 / 4.0 / 72		
Type		CB1840L (Li-Ion)		
Weight	kg (lbs)	0,66 (1.45)		
Battery charger	type	EU	UK	USA/CAN
ASC30-36		27044000	27045000	27046000
Input	V / Hz	220 - 240 / 50 - 60		115 / 60
	W	85		
Acoustic noise ⁽¹⁾				
L _{pA}	dB (A)	73		
L _{pCPeak}	dB (C)	94.5		
L _{WA}	dB (A)	79		
Vibration ⁽²⁾	m/s ²	0.575 max.		

⁽¹⁾ Directive 2006/42/EC, annexe 1, point 1.7.4.2 letter u

L_{pA} = weighted continuous acoustic pressure level equivalent.

L_{pCPeak} = maximum value of the weighted acoustic displacement pressure at the work place.

L_{WA} = acoustic power level emitted by the machine.

⁽²⁾ Directive 2006/42/EC, annexe 1, point 2.2.1.1

Weighted root mean square in frequency of the acceleration the upper limbs are exposed to for each biodynamic reference axis. Tests carried out in compliance with the indications contained in UNI ENV 25349 and UNI EN 28662 part 1st Standards, and under operating conditions much more severe than those normally found.

WARNING



Do not use the tool for purposes other than those intended by Cembre.

The operator should concentrate on the work being performed and be careful to maintain a balanced working position.



The tool is provided with additional external coatings to protect the operator and tool against accidental brush contact with energised conductors.

Proper training techniques and practices should always be adhered to when working around energised conductors.

Always consult your company's work rules and methods to select suitable tooling, rubber insulated gloves, shrouding and other protective equipment.

Under no circumstances should operatives rely solely on the insulating properties of the tools when working around energised conductors.

Prior to use please ensure the tool and specifically the insulating protection are not damaged.



The tool is unsuitable for continuous use and should be allowed to cool down following uninterrupted, successive crimping operations; for instance, having exhausted a fully charged battery in one session, delay battery replacement for a few minutes.

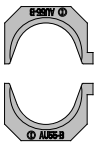


Protect the tool from rain and moisture. Water will damage the tool and battery. Electro-hydraulic tools should not be operated in pouring rain.

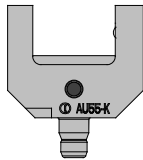
	B550-KV B550E-KV	B550BA-KV	B550CA-KV	B550KA-KV
AU55-B adaptor		√		
AU55-K adaptor		√		√
AU55-50 adaptor	√		√	
AU55-W adaptor	√			

Each tool is supplied with relevant adaptors (see table above).

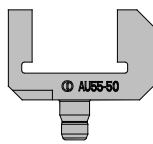
Adaptors can also be supplied separately:



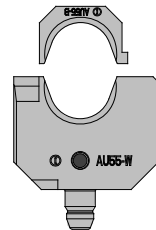
AU55-B
to be used with
"W" dies
(Burdny type).
Usable together
with the AU55-K
adaptor only.



AU55-K
to be used with
"O" dies
(Kearney type).



AU55-50
to be used with
dies common to
50 kN (6 tons)
Cembre tools.



AU55-W
to be used with
"W" dies
(Burdny type).

2. INSTRUCTIONS FOR USE



IMPORTANT: In order to avoid damaging the tool, do not operate it at maximum pressure without dies inserted in the head.

The part reference includes the following:

- ▶ Hydraulic crimping tool.
- ▶ Li-Ion rechargeable battery (2 pcs).
- ▶ Battery charger (model depends on the tool version).
- ▶ Shoulder strap.
- ▶ Plastic carrying case.
- ▶ USB cable (Ref. to § 6 page 14).
- ▶ Adaptor for specific dies (depends on the tool version).

2.1) Preparation

The tool can be easily carried using either the handle or the shoulder strap attached to ring (10) (Ref. to Fig. 1).



Before starting any work, check the battery charge (Ref. to § 2.8) and recharge if necessary, following the instructions in the battery charger user manual.

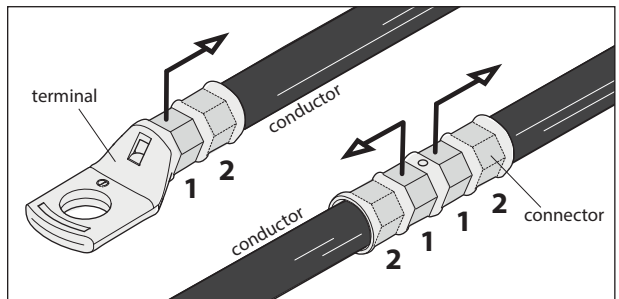
- ▶ To replace the battery, remove it by pressing the release button (7), then insert the new battery, sliding it into the guides until it locks.
Insert a charged battery from the bottom by sliding it into the guides until it locks.
- ▶ The display shows the operational parameters of the tool; to customise them proceed as described in § 2.7.
- ▶ Select the appropriate die set for the connector to be crimped and insert them into the tool head as described in § 3.



When introducing or changing dies, the battery must first be removed from the tool.

- ▶ Insert the dies into the head tool (see paragraph 3).
- ▶ Insert the conductor into the connector.
- ▶ Position the connector between the dies and ensure the correct location of the crimp.

NOTE: when more compression is required, proceed according to the sequence and direction indicated in the figure, uniformly spacing the compressions.



2.2) Die advancement

- ▶ Press operating button (4) (Ref. to Fig. 1) to activate the motor-pump and advance the lower die.
- ▶ To halt the advancement, release operating button (4) and the motor will cut out.



Make sure the dies are exactly positioned on the desired crimp point otherwise re-open dies following instructions as per § 2.4 and reposition the connector.

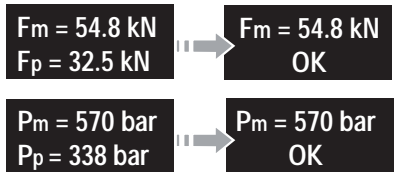
2.3) Compression

- ▶ By keeping operating button (4) pressed, the motor continues to operate: the ram will gradually move forward until the two dies touch.
- ▶ The motor will stop automatically when the set pressure has been reached.



To perform proper compression, press and hold the operating button (4) until the motor stops automatically.

NOTE: To display the momentary force or pressure during the work cycle, select the appropriate display from the menu (Ref. to § 4). When the operating button is released before the motor stops automatically, the display will show the peak force (F_p) or the peak pressure (P_p) reached at that instant.



To complete the work, press the operating button again until the motor stops automatically; the display will show the maximum force or pressure reached followed by 'OK' to confirm correct operation.



The display 'ERROR', combined with a beep and the LEDs flashing, indicates an incorrect crimping procedure caused by the work cycle being interrupted before the control parameters (force/pressure) of the tool are reached. This error appears when the pressure release button has been operated and the tool has already reached a pressure > 100 bar. In this case, repeat the compression by pressing and holding the operating button until the motor stops automatically.



2.4) Release of dies

- ▶ By operating the pressure release button (5) (Ref. to Fig. 1), the ram will retract and open the dies.

2.5) LED Worklights

Whilst the tool is in operation, the compression area is illuminated by two high luminosity LED Worklights that switch off automatically at the end of the cycle.



The LED Worklights can be disabled by following the procedure described in § 4.2.

2.6) Head rotation

For ease of operation, the tool head can rotate through 180°, allowing the operator to work in the most comfortable position.



Do not attempt to rotate the head when the hydraulic circuit is pressurised.

2.7) Capacitive touch button for menu selection

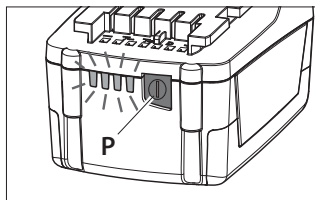
This button is located under the display and allows selection of various screens (Ref. to § 4); it only works when the display is on. Wearing gloves or using other objects may inhibit the operation of the button, therefore use a bare finger to apply only a light touch.



Do not apply pressure to or stab at the touch button, a light touch using a bare finger is sufficient. The command pulse is sent when the finger releases the button.

2.8) Battery status

- ▶ The battery is equipped with LED indicators that show the remaining battery life at any time by pressing the adjacent button (P):
 - 4 LEDs illuminated: fully charged
 - 2 LEDs illuminated: 50 % capacity
 - 1 LED flashing: minimum charge, replace the battery.
- ▶ With the battery inserted into the tool, the remaining battery life can also be checked on the display, via touch button selection (Ref. to § 4).



The screen shown alongside indicates that the battery voltage has dropped below a minimum safety threshold; under these conditions the tool will not start, and it is necessary to recharge or replace the battery. The approximate time to fully recharge a battery is about 80 minutes.



After each working cycle, and after the extraction of the battery from the tool, an integrated battery cut-off device will operate after 70 s approx.

Then the LED nearest to button (P) will flash 5 times each 14 s approx. The battery will be reactivated when it is reintroduced into the tool and the operating button is pressed.

2.9) Using the battery charger

Carefully follow the instructions in the battery charger user manual.

3. DIE AND ADAPTOR ASSEMBLES

Make sure that the ram of the tool is fully retracted.

Depending on the dies to be used, please proceed as follows:

3.1) Use of "W" dies Burndy type with AU55-B adaptor

- Insert half of the adaptor AU55-B in the upper seat of the head (1) and the second half into the adaptor AU55-K (2); the two halves of the adaptor will be held by pins (11 and 12).
- Insert the adaptor AU55-K into the seat of the ram (3) (see Fig. 2a).
- Press pins (13 and 14) and insert one "W" die into the upper adaptor AU55-B and the other into the lower adaptor AU55-B (4) (see Fig. 2b); to disassemble them it will be sufficient to press the pins and to slip them from the head.

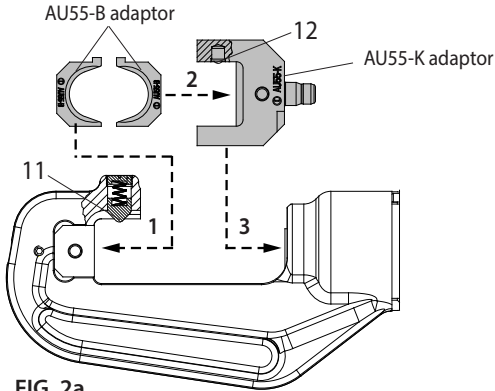


FIG. 2a

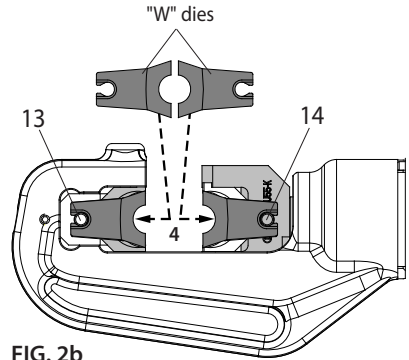


FIG. 2b

3.2) Use of "W" dies Burndy type with AU55-W adaptor (*)

- Insert the upper adaptor AU55-B in the upper seat of the head (1); it will be held by pin (11) (see Fig. 2c).
- Insert the lower adaptor AU55-W into the seat of the ram (2) (see Fig. 2c).
- Press pins (13 and 15) and insert one "W" die into the upper adaptor AU55-B and the other into the lower adaptor AU55-W (3) (see Fig. 2d); to disassemble them it will be sufficient to press the pins and to slip them from the head.

(*) The part code AU55-W includes:
1 pc - AU55-W (lower adaptor)
1 pc - AU55-B (upper adaptor)

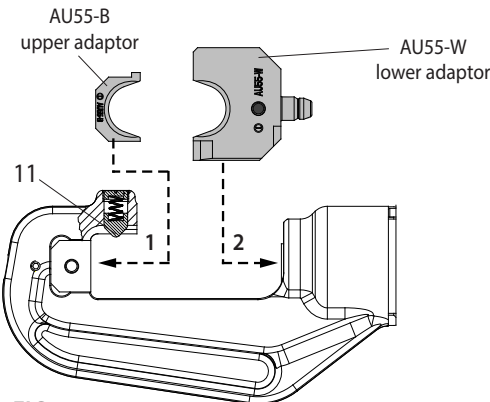


FIG. 2c

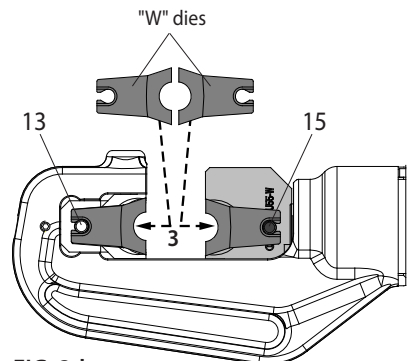


FIG. 2d

3.3) Use of "O" dies Kearney type

- Insert one "O" type die in the upper seat of the head (1) and the other die into the adaptor AU55-K (2), the two dies will be held by pins (11 and 12) (see Fig. 2e).
- Insert the adaptor AU55-K into the seat of the ram (3).
- To disassemble them it will be sufficient to slip them from the head (see Fig. 2f).

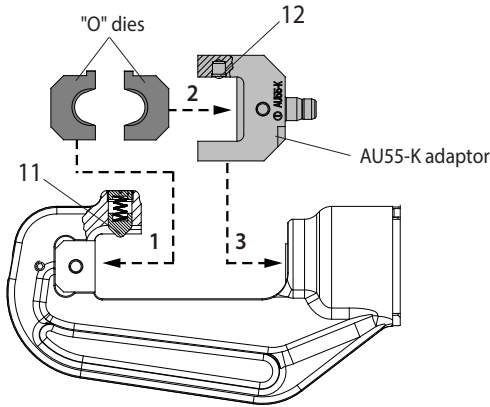


FIG. 2e

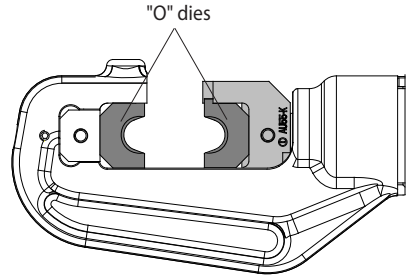


FIG. 2f

3.4) Use of dies common to 50 kN (6 tons) Cembre tools

- Insert the AU55-50 adaptor into the seat of the ram (1) (see Fig. 2g).
- Insert one M...-50 type die into the adaptor AU55-50 (2) and one into the upper part of the head (3); the two dies will be held by pins (11 and 16).
- To disassemble them it will be sufficient to slip them from the head (see Fig. 2h).

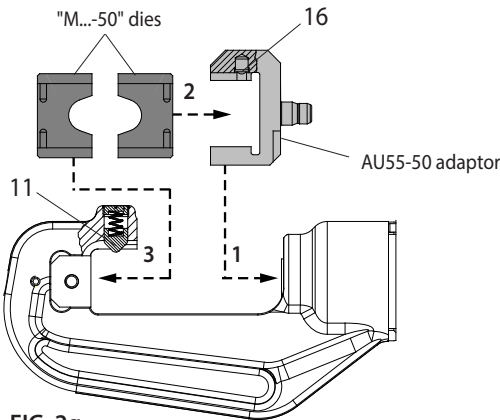


FIG. 2g

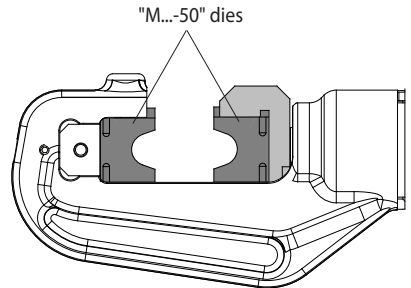


FIG. 2h

4. DISPLAY


The OLED display switches on automatically when the operating or pressure release buttons are pressed, and off after 60 seconds of non-operation.

The display shows:

- The main operational parameters of the tool processed by the circuit board, such as peak pressure or force reached.
- Information on the condition of the tool, such as the charge level, the battery temperature and maintenance requirements.
- Any operational or procedural ERRORS.


Use the touch button (8) to navigate through the menu screens to manage INFORMATION AND SELECTION:

4.1) INFORMATION SCREENS: display a pre-determined parameter which will then appear each time the tool is started and during the entire work cycle.




F_m = 54.8 kN
F_p = 32.5 kN

F_m: Minimum set force, expressed in kN.
F_p: Peak force reached, expressed in kN,
(screen as factory setting)




F_m = 6.16 ton
F_p = 3.65 ton

F_m: Minimum set force, expressed in USA sh. ton.
F_p: Peak force reached, expressed in USA sh. ton.



P_m = 570 bar
P_p = 338 bar

P_m: Minimum set pressure, expressed in bar.
P_p: Peak pressure reached, expressed in bar.



P_m = 8267 psi
P_p = 4902 psi

P_m: Minimum set pressure, expressed in psi.
P_p: Peak pressure reached, expressed in psi.



Battery charge level.



1000
-29000

No. of cycles performed.
No. of cycles before scheduled recommended maintenance.



B550
NR 15AZ541

Cembre logo, tool model.
Tool serial no



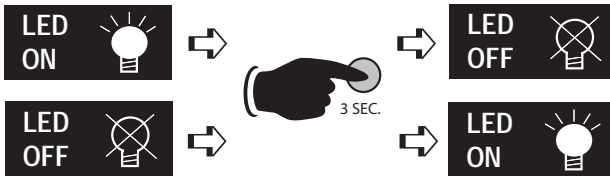
To make a selected screen operational and appear at each start-up of the tool, operate the touch button for at least 3 seconds; a continuous beep will confirm the setting.



The capacitive menu selection button may not work if touched using objects or when wearing gloves, therefore always operate it using a bare finger.

4.2) SELECTION SCREENS: control parameters that cannot be set as automatic upon start-up of the tool, can be changed by operating the touch button:

Enabling/disabling the LED Worklights (factory setting LED ON)



When the screen is displayed, touch the button for at least 3 seconds to deactivate or reactivate operation of the LED Worklights during tool use; a continuous beep will confirm the setting.

Return to original factory settings / firmware version

When the 'RESET' screen is displayed, return the tool to its factory setting by operating the touch button for at least 3 seconds; a beep will confirm the setting.



The RESET screen also shows the firmware version of the circuit board.

4.3) WARNINGS: these appear during operation and notify the operator of the status of the tool:



LOW BATTERY: replace the battery.

NOTE: when the battery Vage falls below a minimum safety threshold, the tool will not start; although it is still possible to end the work cycle in progress.



BATTERY TEMPERATURE HIGH: remove the battery and wait until it cools down.








NO. OF CYCLES TO MAINTENANCE REACHED:

the tool continues to work however, it is recommended that it is sent to Cembre for a complete overhaul (see § 7).

NOTE: this message, together with a beep, will reappear when the tool has been idle for 30 seconds.

4.4) ERRORS: these appear during operation, combined with a beep and flashing LED Worklights, to notify the operator of procedural or operational errors.

Message	Error description	Solution
	The pressure release button (5) was pressed before the control parameters were reached (Force/Pressure).	Repeat the work cycle and wait for the motor to stop automatically.
	Abnormal power consumption of the motor for more than 3 seconds. The tool stops.	Wait for the display to turn off (60 sec.) or remove and re-insert the battery, then re-start the tool. If the error occurs frequently, contact Cembre.
	Output voltage of the pressure transmitter is out of the pre-set range.	Repeat the work cycle; if the error occurs frequently, contact Cembre.
	Failure to reach the set pressure within 30 seconds of continuous operation of the machine.	Repeat the work cycle; if the error occurs frequently, contact Cembre.
	Overcharging of the battery with protection tripping. The tool stops.	Wait for the display to turn off (60 sec.) or remove and re-insert the battery, then re-start the tool. If the error occurs frequently, contact Cembre.



Errors are displayed for about 30 seconds before being reset, but will display repeatedly in the event of permanent anomalies.

5. MAINTENANCE

The tool is robust, completely sealed, and requires very little daily maintenance. Compliance with the following points, should help to maintain its optimum performance:

5.1) Thorough cleaning

Dust, sand and dirt are a danger for any hydraulic device.

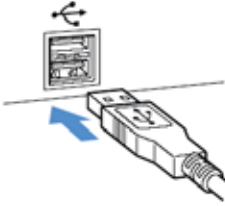
Every day, after use, the tool must be wiped with a clean cloth taking care to remove any residue, especially close to pivots and moveable parts.

Do not use hydrocarbons to clean the rubber parts.

5.2) Storage case

When not in use, the tool should be stored and transported in the plastic case, to prevent damage. The case, type VAL P40, is suitable for storing the tool and the accessories.
VAL P40: Size 520x433x127 mm (20.5x17.0x5.0 inches). Weight 3,4 kg (7.5 lbs).

6. CONNECTION TO COMPUTER

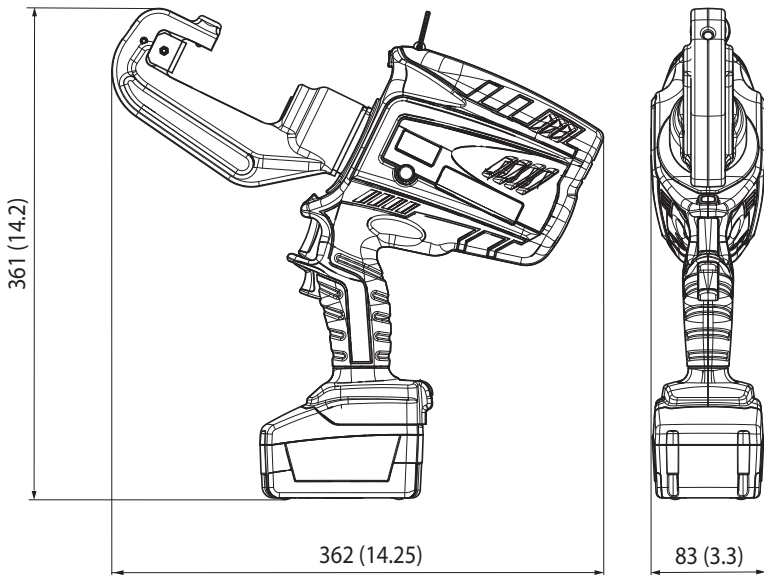


The memory card integrated in the tool records operating data from 200.000 cycles for transfer via the USB cable supplied.

To view and manage this data, go to www.cembre.com and register in the dedicated area, then download the free Cembre software **CEM_SWBT01**. Keeping the Firmware of the tool updated, via free of charge download from here, will optimise the tool's performance.

7. RETURN TO Cembre FOR OVERHAUL

In the case of a breakdown, contact your local Agent who will advise you on the problem and give you the necessary instructions on how to dispatch the tool to our nearest service Centre; if possible, attach a copy of the **Cembre** Test Certificate supplied with the tool or, if no other references are available, indicate the approximate purchase date and the tool serial number.



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