

FIG. / BILD 1



FIG. / BILD 2



FIG. / BILD 3

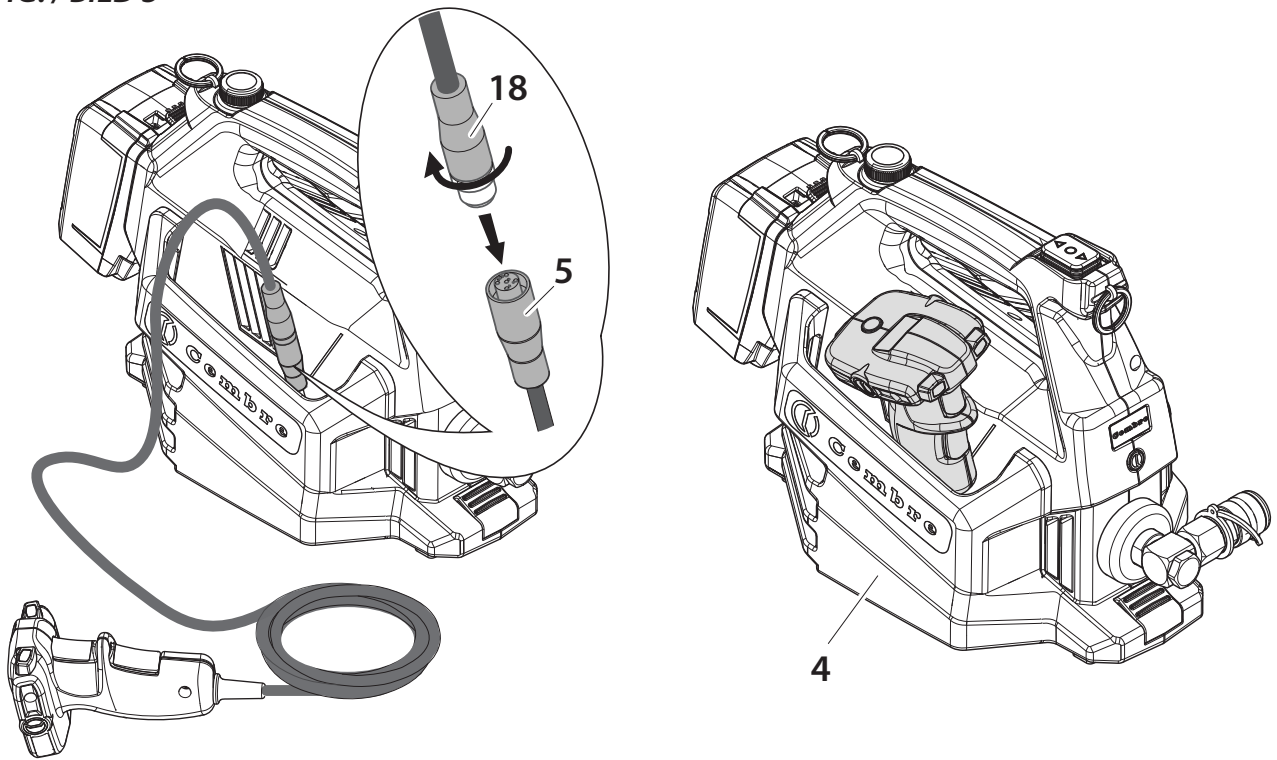
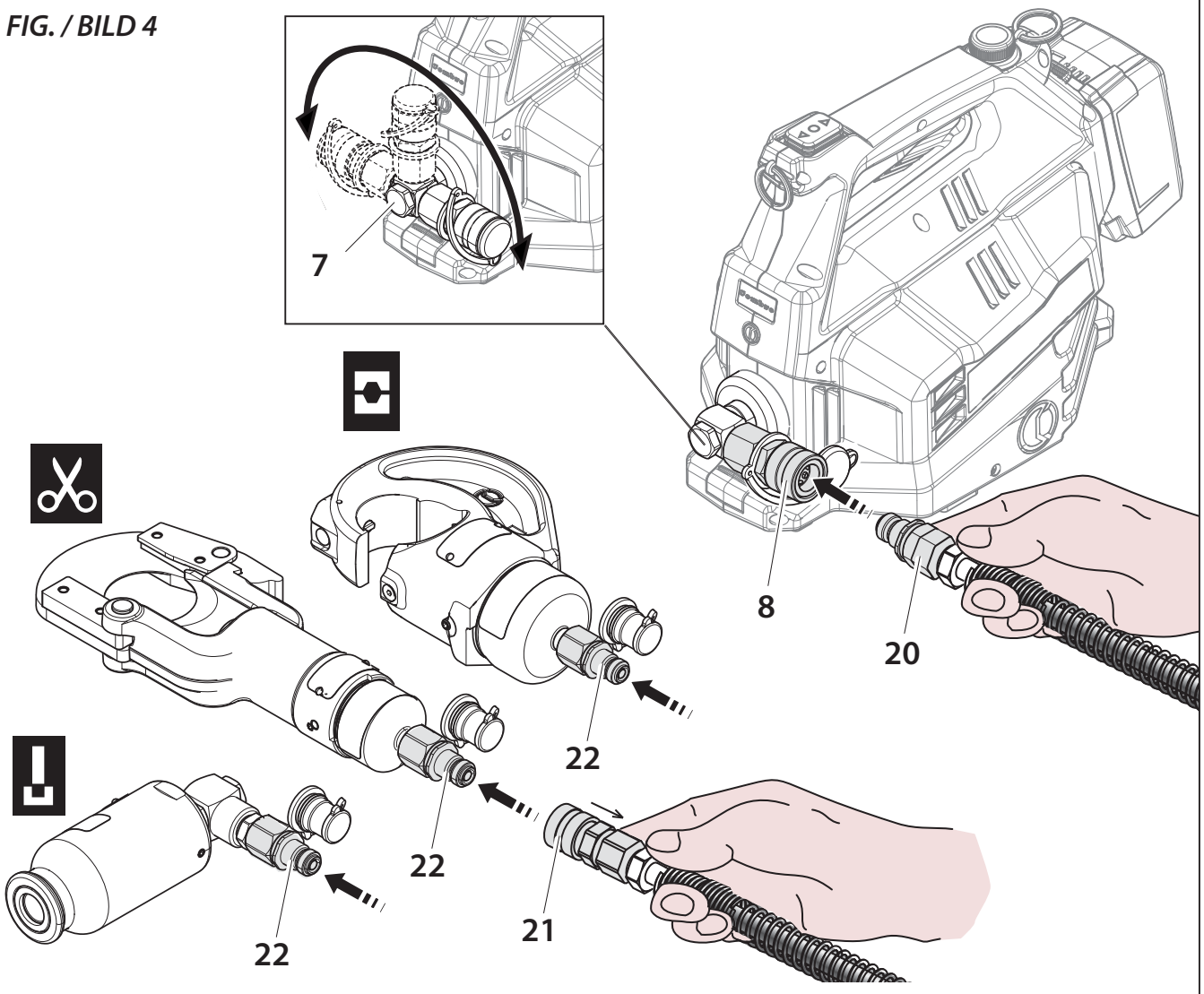



FIG. / BILD 4



1. GENERAL CHARACTERISTICS

Operating pressure	bar (psi)	729 (10,573)		
Oil supply				
high speed - low pressure	l / min (US gpm)	1,28 (0.34)		
low speed - high pressure	l / min (US gpm)	0,25 (0.07)		
Oil reservoir capacity	cm ³ (cu. in.)	960 (58.6)		
Degree of protection		IP 20		
Dimensions		Ref. to Fig. 7 page 4		
Weight with battery	kg (lbs)	5,6 (12.3)		
Motor	V 	18		
Operating temperature	°C (°F)	-15 to +50 (+5 to +122)		
Recommended oil		ENI ARNICA ISO 32 or equivalents		
Operating speed		twin speed operation and automatic switching from a rapid advancing speed to a slower, more powerful working speed		
Safety		maximum pressure valve		
Rechargeable battery	type	CB1852L Li-Ion		
	V / Ah (Wh)	18 / 5.2 (93.6)		
Weight	kg (lbs)	0,66 (1.45)		
Acoustic noise ⁽¹⁾	dB	L _{pA} 66.8 (A)	L _{pCPeak} 88 (C)	L _{WA} 82.8 (A)
Vibrations ⁽²⁾	m/s ²	0.318		

⁽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 EN ISO 5349-1/2 Standard, and under operating conditions much more severe than those normally found.

		B68M-P18	B68M-P18E	B68M-P18T	B68M-P18A
Battery charger ASC30-36	type	EU 27044000	UK 27045000	AUS/NZ 27047000	USA/CAN 27046000
Input	V / Hz (W)	220 - 240 / 50 - 60 (85)			115 / 60 (85)

2. DESCRIPTION OF THE COMPONENTS

The part reference includes the following (See Fig. 1).

- **(PU) Portable hydraulic pump:** motor-driven at 18V DC current, battery powered for autonomous use. Provided with a pressure transmitter that ensures precision and repeatability of the work cycles and a maximum pressure valve to ensure maximum operator safety. The memory card integrated into the pump allows the storage of the data relating to up to 200,000 previous operating cycles.

The pump can be connected to hydraulic heads produced by **Cembre** for compression (max. 230 kN), cutting and punching.

Main components (Ref. to Fig. 2):

- | | |
|---------------------------------|-----------------------|
| 1 - STRAP FASTENING RING | 7 - SWIVEL ATTACHMENT |
| 2 - BATTERY RELEASE | 8 - QUICK COUPLING |
| 3 - BATTERY | 9 - CONTROL BUTTON |
| 4 - SIDE POCKET | 10 - HANDLE |
| 5 - REMOTE CONTROL CONNECTOR | 11 - OIL FILLER CAP |
| 6 - MECHANICAL PRESSURE RELEASE | |

- **(FH) Flexible hose:** length 2 m (6.5 ft) specific for high pressure; provided with automatic quick couplings; enables connection of the hydraulic head to the pump.

- **(BC) Battery charger** (differs depending on the pump version): for recharging the batteries supplied; has "AIR COOLED" charging technology and a processor for managing charging cycles. To use, carefully follow the instructions in the battery charger user manual.

- **(RB) Rechargeable battery** (2 pcs): 18 V - 4.0 Ah high capacity Lithium Ion battery.

Provides 100% of its energy between -15 and +50 °C.

Electronic control of the individual cells to prevent over-charging and under-discharging.

Greater longevity and ventilated recharging in short times thanks to AIR COOLED technology.

Timed automatic power off to optimise energy consumption.

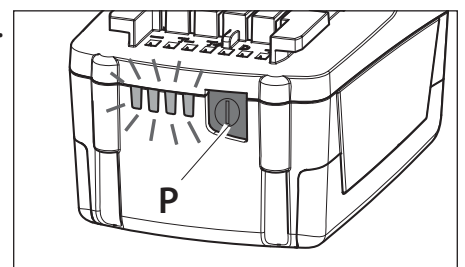
Equipped with LED indicators that indicate the remaining battery life at any time by pressing the button (P):

4 LEDs illuminated: fully charged

2 LEDs illuminated: 50 % capacity

1 LED flashing: minimum charge, replace the battery.

With the battery inserted in the pump, the remaining battery life can also be checked on the display of the remote controller, via touch button selection (Ref. to § 4).



The display alongside indicates that the battery is low and the pump will not start (Ref. to § 4.6).

The approximate time to fully recharge a battery is about 80 minutes.



To replace the battery, press the release button (2) (Ref. to Fig. 5) and push the battery downward to unlock it.

Insert a charged battery from the bottom by sliding it into the guides until it locks.

- **(CB) Canvas bag:** made from sturdy fabric, allows users to store the pump and accessories.
- **(SS) Shoulder Strap:** allows users to easily transport and comfortably carry the pump during all work phases; to be connected to the rings (1).
- **(RC) Remote controller:** provided with a 2 m connection cable, it allows users to control the pump and check the operating parameters via the OLED display (14). Ergonomically designed with a comfortable grip even while wearing work gloves it has the following functions.
 - **Capacitive touch button (13) for menu selection** allows selection of various screens (Ref. to § 4) only when the display is on.

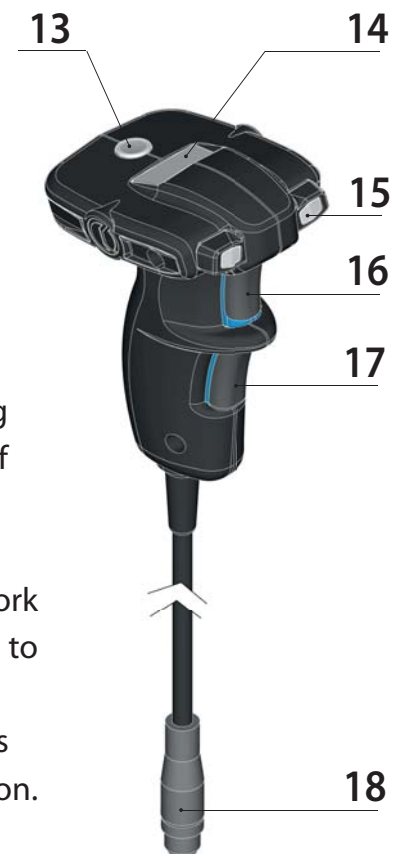


Do not apply pressure to or stab at the touch button, a light touch using a bare finger is sufficient. The command pulse is sent when the finger releases the button.

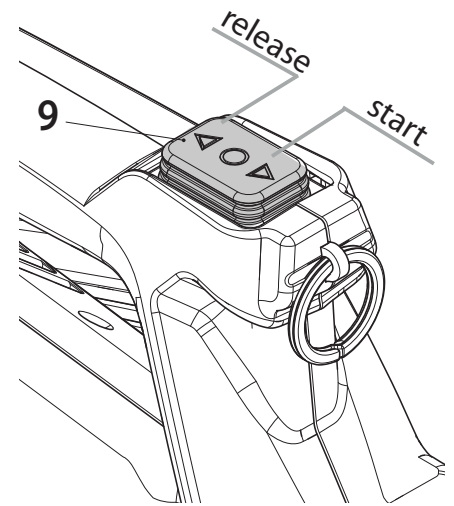


The capacitive menu selection button may not work if touched using objects or when wearing gloves, therefore always operate it using a bare finger.

- **OLED display (14):** switches on automatically when the operating or pressure release buttons are pressed, and off after 60 seconds of non-operation.
- **High efficiency LED worklights (15):** allow users to illuminate the work area and switch on automatically when the start button is pressed to operate the pump. They extinguish 25s after the end of the cycle. Worklights may be switched on for 25s at any time the controller is connected to the pump by lightly and quickly pressing the start button. **Do not press the start button sufficiently to operate the pump.**
- **Start button (16):** enables the actuation of the motor of the pump that feeds the hydraulic head connected to it and pressurises the oil.
- **Oil release button (17):** enables the return of the oil to the pump reservoir.
- **Multipin connector (18):** to connect the remote controller to the pump.



- **Control button (9) on the pump:** rocker type switch, enables the control of the pump only when the remote controller is not connected:
- ▶ Push forwards for actuation and backwards for oil release.



i *When a crimping head is used, press and hold the operating button (1) until the motor stops automatically.*

i *The control button (9) is only enabled when the remote controller is not connected.*

3. INSTRUCTIONS FOR USE

3.1) Preparation

The pump can be easily carried using either the main handle (10) or the shoulder strap attached to the two rings (1) (Ref. to Fig. 2).

The pump has an hermetically sealed hydraulic circuit allowing it to operate in any position.

i *Before starting any work, check the battery charge and recharge it if necessary following the instructions in the battery charger user manual.*

3.2) Connecting the remote controller (Ref. to Fig. 3)

- ▶ Extract the connector (5) located inside the side pocket of the pump.
 - ▶ Connect the remote controller using the connector (18) and turn the dial to lock it.
- At the end of operation it is convenient to store the remote controller inside the side pocket (4).

i *Connection of the remote controller disables operation of the control button (9) on the pump.*

3.3) Connecting the flexible hose (Ref. to Fig. 4)

- ▶ Fully unravel the flexible hose.
- ▶ Connect the male coupler (20) of the flexible hose to the female coupler (8) of the pump.
- ▶ Connect the female coupler (21) of the flexible hose to the male coupler (22) of the hydraulic head to be used.

The swivel attachment (7) enables the rotation of the hose to the most convenient position for the operator.

⚠ *Before using the pump always check the integrity of the flexible hose and the quick couplers making sure there are no abrasions, cuts, deformations or swellings.*

3.4) Operation

On the remote controller display the operator can view and change some of the pump's setting using the touch button (Ref. to § 4).

The display shows the operating mode and oil release settings of the pump at each start-up (starting with the display switched off) or upon insertion of the battery.

Examples:



IMPORTANT: Prior to using the pump, always check the operating mode set is the correct one for the type of job to be carried out, choosing between: **CRIMPING – CUTTING – PUNCHING** (Ref. to § 4.2).

The factory settings are:

- operating mode: **CRIMPING** (Ref. to § 4.2 to choose another operating mode).
- oil release type: **SMART** (Ref. to § 4.3 for further details).

Proceed with the job by operating as follows:

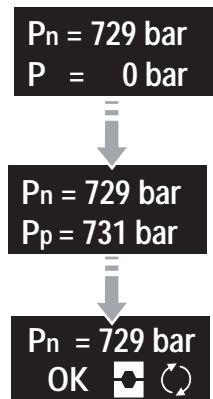


CRIMPING OPERATION

- ▶ Press the start button: this activates the motor of the pump that feeds the hydraulic head connected to it, pressurising the oil.

Once the minimum set pressure (P_n) is reached the pump will be switched off automatically, the display will briefly show the maximum pressure reached (P_p) followed by "OK" to confirm the correct operation.

Releasing the start button before the automatic stopping of the motor will cause the pump to stop, keeping the oil pressure stable (P_p) at the value reached at that moment. To complete the operation press the start button once more until the motor stops automatically.



The display "ERROR" combined with a beep and the LEDs flashing, indicates an incorrect crimping procedure; the oil return phase occurred too early without waiting for the motor to be automatically switched

off and therefore the minimum set pressure was not reached.

Repeat the crimping cycle by holding down the start button until the motor is automatically switched off.

When a crimping head is used, press and hold the operating button until the motor stops automatically.

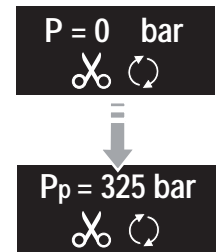


- ▶ At the end of the cycle, proceed with the phase of returning the oil to the pump reservoir (Ref. to § 3.5 for further details).



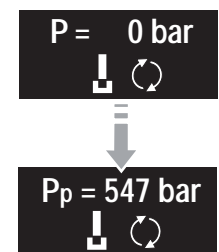
CUTTING OPERATION

- ▶ Press the start button: this activates the motor of the pump that feeds the hydraulic head connected to it, pressurising the oil. Keep the button pressed until the cutting operation is complete. At the end of the cycle the display will show the maximum pressure reached (P_p).
- ▶ At the end of the cycle, proceed with the phase of returning the oil to the pump reservoir (Ref. to § 3.5 for further details).



PUNCHING OPERATION

- ▶ Press the start button: this activates the motor of the pump that feeds the hydraulic head connected to it, pressurising the oil. Keep the button pressed until the punching operation is complete. At the end of the cycle the display will show the maximum pressure reached (P_p).
- ▶ At the end of the cycle, proceed with the phase of returning the oil to the pump reservoir (Ref. to § 3.5 for further details).



3.5) Oil release

The phase of returning the oil to the pump reservoir, or rather to the re-entry of the ram of the connected hydraulic head, may be carried out in two different ways depending on the release mode set (Ref. to § 4.3 for further details):

With the remote controller:

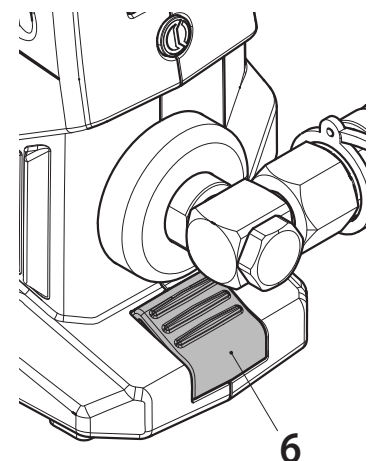
- **smart mode:** release the start button (following automatic shut-off of the motor).
- **manual mode:** press the release button.

With the rocker switch on the pump (only if the remote controller is disconnected):

- **smart mode:** release the control button at the end of the cycle.
- **manual mode:** push the control button backwards.

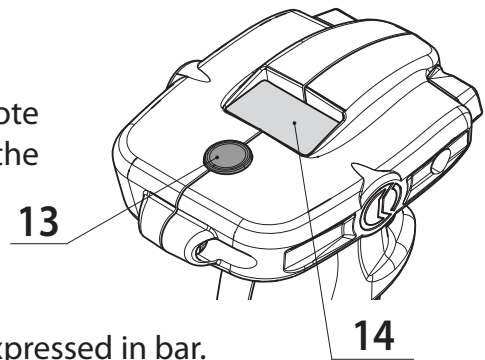


If required, by pressing hard on the mechanical pressure release button (6), the oil will return to the reservoir whatever the status of the battery.

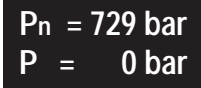
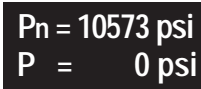






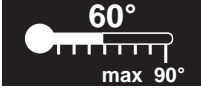




4. NAVIGATION MENU

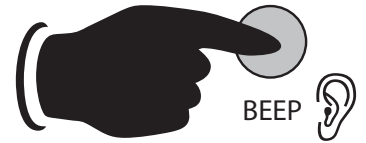
The navigation menu is shown on the display (14) of the remote controller. By touching the button (13) it is possible to browse the menu via the various screens.



4.1) Structure of the "main menu"

- * 1  Pn: Operating/minimum set pressure, expressed in bar.
P: Peak pressure reached, expressed in bar.
- ↓
- * 2  Pn: Operating/minimum set pressure, expressed in psi.
P: Peak pressure reached, expressed in psi.
- ↓
- 3  Operating mode set.
(Ref. to § 4.2 for further details).
- ↓
- 4  Release mode set.
(Ref. to § 4.3 for further details).
- ↓
- * 5  Battery charge level.
- ↓
- * 6  No. of cycles performed.
No. of cycles before scheduled recommended maintenance.
- ↓
- * 7  **Cembre** logo, pump model.
Pump serial no.
- ↓
- 8  Enabling/disabling the LED Worklights (LED ON)
(Ref. to § 4.4 for further details).
- ↓
- * 9  Actual temperature (°C) of the pump motor.
- ↓
- 10  Return to original factory settings.
Firmware version (Ref. to § 4.5 for further details).
- ↓
- 11  **Cembre**

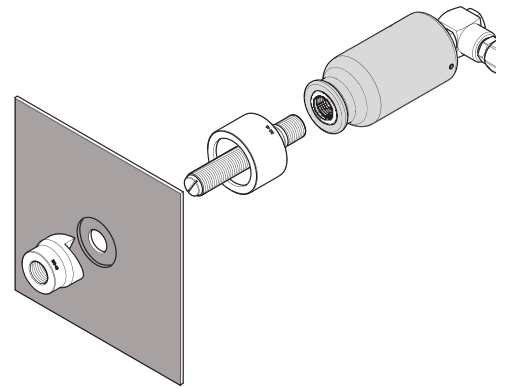
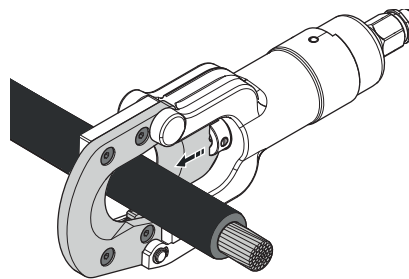
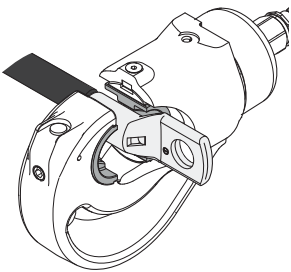
(*) Screens 1-2-5-6-7-9 can be set as the “main screen” which is shown on the display at every use of the pump; to do this, when the pre-selected screen is displayed, hold the finger on the button (13) until a confirmation “beep” is heard.



4.2) Choosing the "operating mode"

The “operating mode” allows the user to set the pump depending on the type of hydraulic head connected; this enables the optimisation of the job cycle and charging of the battery.

It is possible to choose between three different operating modes:



Operating mode	Associated pictogram	Function
CRIMPING factory setting		Specifically for using the pump with hydraulic heads (max. 230 kN) for crimping of electrical connectors.
CUTTING		Specifically for using the pump with hydraulic heads for cutting electrical conductors and steel ropes.
PUNCHING		Specifically for using the pump with frame type hole punching hydraulic heads or piercing hydraulic heads.



To change the desired “operating mode”, proceed as follows:

- Select screen 3 from the “main menu” (Ref. to § 4.1).
- Hold the finger on the button (13) until a confirmation “beep” is heard, the choice made is shown by filling of the related pictogram.



4.3) Choosing the "release mode"

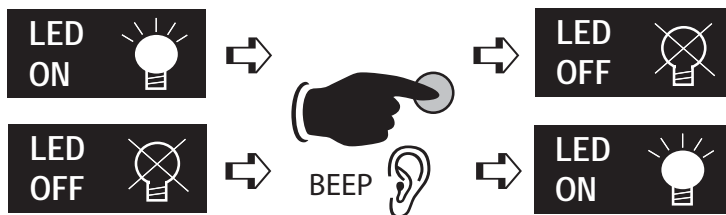
The phase of discharging the oil into the pump's tank can be carried out in two different ways, depending on the mode set in the menu:

Release mode	Associated pictogram	Function
SMART factory setting		By releasing the start button the oil is returned in full to the pump reservoir only following automatic shut-off of the motor. During the return phase, pressing the buttons enables the head ram stroke to be interrupted at any point so as to be able to restart from this position in the next work phase, thus saving time and energy.
MANUAL		To return the oil to the pump reservoir it is necessary to press and hold the release button. During the return phase, by releasing the button it is possible for head ram stroke to be interrupted at any point so as to be able to restart from this position in the next work phase, thus saving time and energy.

To change the "release mode", proceed as follows:

- Select screen 4 from the "main menu" (Ref. to § 4.1).
- Hold the finger on the button (13) until a confirmation "beep" is heard, the choice made is shown by positioning of the cursor under the pictogram.

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



Select screen 8 from the "main menu" (Ref. to § 4.1), to deactivate or reactivate operation of the LED Worklights hold the finger on the button (13) until a confirmation "beep" is heard.

4.5) Return to original factory settings / firmware version



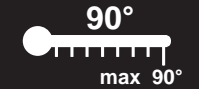


Select screen 10 from the "main menu" (Ref. to § 4.1), to return the pump to its factory settings hold the finger on the button (13) until a confirmation "beep" is heard.



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








4.6) Alarms/Warning


These appear on the display during operation, inform the operator on the state of the pump.

Message	Meaning	Description
	BATTERY LOW	Replace or recharge the battery. NOTE: when the battery voltage falls below a minimum safety threshold, the pump 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. In order to cool it quicker, it is possible to insert it into the supplied battery charger supplied, thus making use of the specific "AIR COOLED" function.
	MOTOR-PUMP TEMPERATURE HIGH	The maximum permitted operating temperature of 90 °C (194 °F) is reached. The pump stops ; in this instance wait for it to cool. Only when the permitted working temperature is reached will it be possible to re-use the pump.
	INSUFFICIENT OIL	This appears when the pressure of the hydraulic circuit doesn't increase but remains near to zero for a duration of 30 consecutive seconds. Check the oil level and if necessary refill (Ref. to § 5.4).
	REQUEST MAINTENANCE	No. of cycles to maintenance reached; the pump continues to work however, it is recommended that it is sent to Cembre for a complete overhaul (Ref. to § 6). NOTE: this message, will reappear when the pump has been idle for 30 s.

4.7) Errors/Malfunctions

These appear on the display during operation, combined with a beep to notify the operator of procedural or operational errors.

Message	Error description	Solution
	In CRIMPING mode, oil discharge is activated before waiting for the motor to be automatically switched off.	Repeat the work cycle, keeping the start button pressed down until the motor switches off automatically.
	Interruption of the signal from the NTC temperature probe of the battery.	Replace the battery. If the problem persists, please contact Cembre .
	The pump has been started without flexible hose connected or the flexible hose is not correctly connected	Press the release button, connect the flexible hose or check the correct connection to the pump.
	Abnormal power consumption of the motor. The pump stops.	Wait for the display to turn off (60 sec.) or remove and re-insert the battery, then re-start the pump. if the problem persists, please contact Cembre .
	Output voltage of the pressure transmitter is out of the pre-set range. The pump stops and doesn't re-start.	Remove and re-insert the battery, if the problem persists, please contact Cembre .
	Failure to reach the set pressure within 120 sec. of continuous operation of the pump.	Repeat the work cycle; if the problem persists, please contact Cembre .
	Overcharging of the battery with protection tripping. The pump stops.	Wait for the display to turn off (60 sec.) or remove and re-insert the battery, then re-start the pump. if the problem persists, please contact Cembre .

 **Errors 00.. are displayed for about 30 seconds before being reset, but will display repeatedly in the event of permanent anomalies.**

5. MAINTENANCE

The pump 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 pump and accessoires must be wiped with a clean cloth taking care to remove any residue. Do not use Hydrocarbons to clean the rubber parts.

 **After use, protect the couplers of the pump, hose and hydraulic head with their protective caps to prevent contamination.**

5.2) Canvas bag

To protect the pump from accidental damage and dust, it should be stored with its accessories in the special canvas bag provided and sealed well.

Canvas bag **type CVB-031**: Size 620x300x320 mm (24.4x11.8x12.6 inches), weight 2,4 kg (5.3 lbs).

5.3) Storage

Once the job has been **completed always completely release the pressure** of the oil by holding down the release button; ensure that the ram of the connected hydraulic head is completely retracted before disconnecting the head.

- ▶ Remove the battery from the pump.
- ▶ Disconnect the remote controller.
- ▶ Disconnect the flexible hose; avoid it becoming folded with narrow bends or knots that may compromise its integrity.
- ▶ Store the pump and accessories in the canvas bag in a dry place.

5.4) Topping up the oil (Ref. to Fig. 6)

Periodically check, at least every 6 months, the oil level in the pump and top up if necessary:

- ▶ Position the pump on its base on a flat surface.
- ▶ Completely discharge the oil pressure by pushing the pressure release button (6).
- ▶ Unscrew the filler cap (11).
- ▶ By using a funnel, **top up very slowly** to completely fill the oil reservoir to the maximum level.
- ▶ When the operation is finished replace the cap (11).

Always use clean recommended oil, see § 1.



Do not use old or recycled oil. Do not use hydraulic brake fluid.
Ensure that used oil is disposed of in accordance with current legislation.



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