

**Cleco**<sup>®</sup>  
Production Tools

Instruction Manual  
P2332BA  
2019-08

**LiveWire**<sup>™</sup>

**943620PT, 943610PT**

WLAN socket tray



For additional product information visit our website at [www.ClecoTools.com](http://www.ClecoTools.com)

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# 1 About this Document

The original language of this document is German.

Software Version: S169262-100.

This document is intended for all persons who will operate and maintain this equipment.

This document has the following purposes:

- It provides important instructions for safe and effective operation.
- It describes the function and operation of this equipment.

## Other documents

Number	Type
P1970E	Operating Manual – Battery Pack 935377
P2372JH	EC Declaration of Conformity
P3315C	Installation instructions S168688 LiveWire Utilities

## Symbols in the text

<i>italic</i>	Menu options (e.g., <i>Diagnostics</i> ) input fields, check boxes, radio buttons or drop-down menus.
>	Indicates selection of a menu option from a menu, e.g., <i>File &gt; Print</i>
<...>	Specifies switches, pushbuttons or the keys of an external keyboard, e.g., <F5>
Courier	Filenames and paths, e.g., <b>setup.exe</b>
•	List
-	List, level 2
a)	Options
b)	
→	Result
1. (...)	Action steps
2. (...)	
▶	Single action step

## 2 Safety

### Basic requirements

- Only operate the socket tray after you have read and fully understood this document. Failure to follow the directions and safety instructions could result in electric shocks, burns and/or injuries.
- Keep this document in a safe place for future use! Make this documentation available to the designer, the installer and the personnel responsible for commissioning the machine or system in which this product is employed.

### Intended use

The product is a part of the Cleco Production Tools tightening system and is intended exclusively for industrial use in fastening processes. Use the socket tray under the following conditions:

- Only use the socket tray in conjunction with a Cleco Production Tools Primary or Master controller.
- Use a separate socket tray for each tool.
- Only under the specified ambient conditions.
- Only with the permissible supply voltage.
- Only in areas of EMC Limit Class A (electromagnetic immunity for industrial areas). For the currently observed EMC standards, see the EC Declaration of Conformity.
- Remove the battery to store the socket tray.

### Operator training

The socket tray may only be commissioned, adjusted and tested by qualified and trained personnel. The personnel must be instructed by qualified employees<sup>1</sup> of Apex Tool Group. The inserts for the socket tray sockets may only be changed by qualified employees<sup>1</sup>. The socket tray may only be adjusted to special requirements by qualified employees<sup>1</sup>.

### Foreseeable incorrect usage

Do not use the socket tray:

- in potentially explosive areas
- in damp spaces/outdoors
- as a hammer/impact tool
- with outside control or battery
- Only use Apex Tool Group battery charger 24 V (935391) for charging.

### Power supply

Operation with 26 V battery pack (935377), a 44 V battery pack (936400PT) or a PM 48 power module (961350PT).

### Operation

Only use the socket tray when it is closed. Operation with the device open causes the following:

- An increased amount of emissions: this can cause interference with other devices.
- Reduced immunity from interference: the socket tray can produce faulty results.
- The loss of existing warranty entitlement.

### Warnings and notices

Warning notices 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



#### Note

A symbol combined with the word **Note** indicates a potentially **harmful situation** which, if not avoided, could result in damage to property or the environment.



**General instructions** include application tips and useful information, but no warnings against hazards.

### Structure Of Warnings



#### Note

Type and source of danger.

Possible consequences of non-observance.

► Measures to avoid danger.

### Symbols on the product

Make sure that the meaning of the symbols has been understood before using the socket tray.



CE compliant

The product corresponds to the prescribed technical requirements in Europe.



Read all instructions.



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

<sup>1</sup>.Due to their professional training, knowledge, experience and understanding of the circumstances involved in this kind of work, suitably qualified employees are able to identify potential hazards and to initiate appropriate safety measures. Qualified personnel must comply with regulations.

### 3 Product description

The socket tray is used in conjunction with a controller from Apex Tool Group. A defined bit pattern determines which socket must be taken. Depending on the version, the socket tray can be fitted with up to four or eight sockets.

#### 3.1 System structure

The communication between the controller and the socket tray takes place via WLAN. The application sends the controller to a wireless or wired tool. Each socket tray can be used for a single tool.



Fig. 3-1: System structure

#### 3.2 Models

Features	943620PT	943610PT
Number of inserts	4	8
Select App	1 to 4	1 to 8
Number of extension boards	1	2

### 3.3 Control and function elements

This chapter describes the control and function elements.

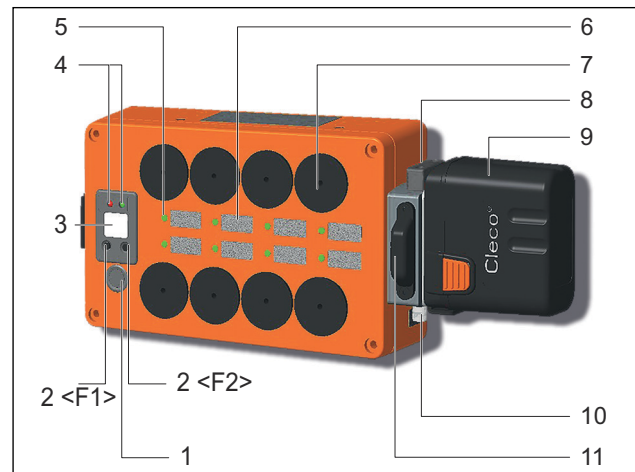


Fig. 3-2: External control and function elements

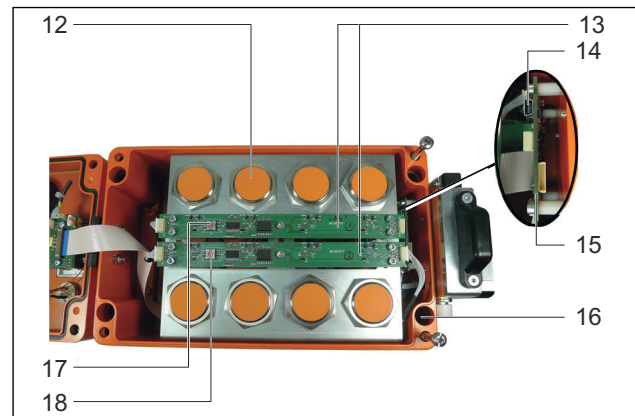


Fig. 3-3: Internal control and function elements

Pos.	Designation
1	On/Off button
2	Function keys <F1>, <F2>
3	LCD (Liquid Crystal Display)
4	LED display
5	Status LED
6	Lettering field
7	Insert for socket
8	LiveWire Memory Chip (LMC)
9	Cleco Production Tools 26V battery
10	Service connection
11	Wireless module, WLAN wireless transmission to control
12	Inductive proximity switch
13	Extension board
14	Mini-USB socket
15	Controller board
16	Mounting holes
17	Channel selector switch 1
18	Channel selector switch 2

### 3.3.1 On/Off button

Press the on/off button	Function
Press once	<ul style="list-style-type: none"> <li>Switch the socket tray on</li> <li>Switch from the main menu to the submenu</li> </ul>
Press for two seconds	<ul style="list-style-type: none"> <li>Switch the socket tray off. To do this, the system must be outside the main menu and the sub-menus.</li> </ul>

### 3.3.2 Function keys

#### Left function key <F1>

Press <F1>	Function
Press once	<ul style="list-style-type: none"> <li>Switch to the previous menu item</li> <li>Quit the LED and Initiator test</li> </ul>
Press for two seconds	<ul style="list-style-type: none"> <li>Switch to the next higher menu level</li> </ul>

#### Right function key <F2>

Press <F2>	Function
Press once	<ul style="list-style-type: none"> <li>Switch to the next menu item</li> </ul>
Press for two seconds	<ul style="list-style-type: none"> <li>Select functions, if menu is activated</li> </ul>

### 3.3.3 LCD

Information and the menu and submenus are displayed on the LCD (Liquid Crystal Display).

See chapter 7 *LCD*, Seite 15.

### 3.3.4 LED display

The LED display shows the operating status and the connection status:

LED display	Operating status	Connection status
Continuous green light	Active	Active
Flashing red light	Faults	
Flashing red and green light	Flash twice after switching on and during the lamp test	
Green off		No connection
Red off	No error	

### Software update

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



Do not interrupt the software update by disconnecting the power supply during this phase.

### 3.3.5 Status LED

The status LEDs allows the operator to see which socket is to be used.

The color of the status LEDs can be individually programmed. This depends on the software used on the controller. Further information is described in the programming instructions of the respective software.

### 3.3.6 LiveWire Memory Chip (LMC)

To permit simple replacement of socket trays in production, a replaceable LMC memory module is installed. When the socket tray is switched on, the network settings are read from the LMC chip and used to set up the WLAN connection. When the socket tray are changed, the LMC has to be installed in the new socket tray being used.

The following data are stored on the LMC:

- MAC address
- Network name (SSID)
- Encryption
- Network key
- Use of the DHCP server
- IP address
- Subnet mask
- Gateway
- Country-specific settings

The MAC address is defined by Cleco Production Tools and cannot be changed. The other data can be changed with *LiveWire RF Configuration* software via USB connection to the PC.

### 3.3.7 Wireless module

The socket tray is equipped is using a WLAN Standard: 802.11a/b/g.

### 3.3.8 Extension board

The number of expansion boards depends on the socket tray.

Socket tray	Number of extension boards
943620PT	1
943610PT	2



### 3.3.9 Channel selector switch

Each expansion board has one channel selector switch.

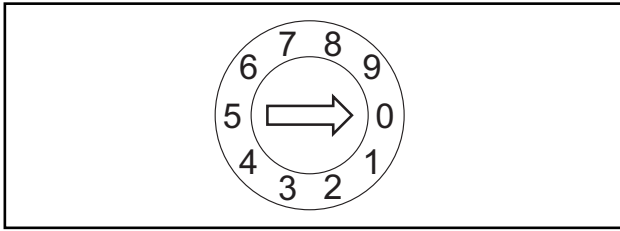


Fig. 3-4: Channel selector switch

- ▶ Make sure that the channel of the expansion boards is set correctly. See the table below.
- ▶ If necessary, adjust the channel selector switch using a slot screwdriver.

Socket tray	Channel selector switch	Arrowhead points to ...
943620PT	1	0
943610PT	1 – Pos. 17, page 7	0
	2 – Pos. 18, page 7	1



### 3.4 Optional accessories

	Component
	Battery pack, li-ion, 26 V Order No. 935377
	Battery pack, li-ion, 44 V Order No. 936400PT
	Power Module PM48 Order No. 961350PT
	LiveWire Memory Chip (LMC) Order no. 961461PT Contains
	<i>LiveWire Utilities</i> software packet Order no. S168688
	Battery charger, li-ion 26 V (110 – 230 VAC) Order No. 935391 – 1-piece

	Component
	Battery charger, li-ion 44 V (85 – 270 VAC) Order No. 936491 PT – 1-piece
	Cable connector (4-pin) Order no. S961042, Order no. Lumberg RKC4/9
	Threaded pin Order no. S906934 for unassigned inserts
	USB interface cable Order no. 962068PT
	Inserts Order No. S926353

## 4 Before initial operation

### 4.1 Components required by the customer

	Component
	Phillips screwdriver (PH3)
	Hexagon key, 2.5 mm

### 4.2 Adjusting inserts before installation

Adjust the inserts for the application concerned. To change inserts, remove the O-rings.

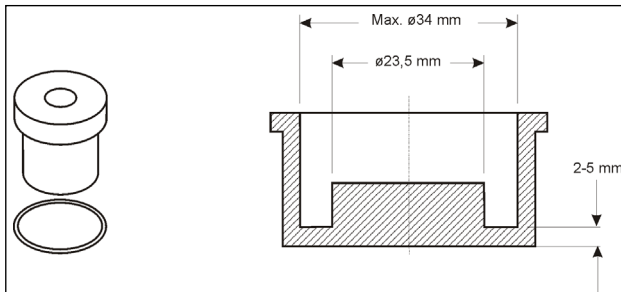


Fig. 4-1: Inserts

### 4.3 Charge battery pack

The battery pack is only partly charged upon delivery.

Fully charge the battery before using it for the first time.  
See battery pack instruction manual *P1970E*.

### 4.4 Installation

Use only the four holes in the housing for installation, see pos. 16, page 7. Do not make any additional holes in the housing as the resulting swarf is could constitute a risk of shorting.

## 5 Commissioning

The socket tray initially has no WLAN connection to the nutrunner control. The connection has to be configured via a USB interface port to a PC.



The backup battery is only partially charged for storage. For this reason, the socket tray displays a warning about the charge state of the backup battery during commissioning. During continuous operation, the backup battery recharges after 24 - 48 hours and the warning disappears. Operation and buffering during battery replacement are guaranteed even if the warning is displayed.

### 5.1 Opening the housing

The housing has to be opened for the following operations:

- Changing inserts
- Connecting the socket tray to a PC via a USB interface port
- Fitting the socket tray



#### Note

Electrostatically sensitive component.

- The electronic assemblies of the Socket Tray WLAN can be destroyed or damaged by electrostatic discharge (ESD). This can lead to immediate failure, or to malfunctions at a later date.
- ▶ Note handling instructions.
  - ▶ To avoid damage when changing the LMC, make sure that there is a potential equalization between the person and the tool.
  - ▶ It may be necessary to set up the equipment in an ESD-protected environment. Recommendation for an ESD workplace: Electrically conductive work surfaces, anti-static straps, appropriate furniture, clothing and footwear, and grounding of all components



Do not touch any internal components.

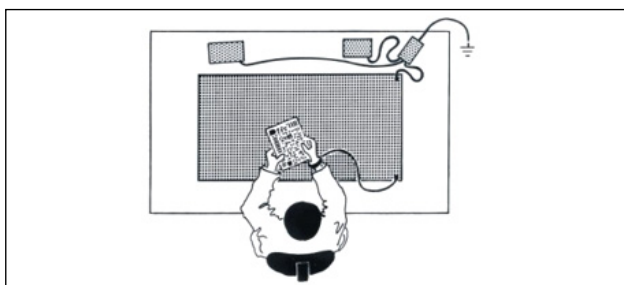


Fig. 5-1: ESD workplace

### 5.2 Configuring the socket tray

A detailed description of how to install the *S168688 LiveWire Utilities* software can be found in the installation instructions P2372JH.

General procedure for configuring the socket tray:

1. Download the USB interface driver.
2. Download and install the *LiveWire Utilities* software package.
3. Start the *LiveWire RF Settings* program.
4. Start the socket tray.
5. Connecting the socket tray to a PC via a USB interface port. Make sure that the connection is only established after the socket tray has been started.

#### 5.2.1 Installing the USB interface driver

Download the USB interface driver from the internet:

<http://software.apextoolgroup.com/current-software-packages/pc-software/>

A USB connector cable is needed to connect the socket tray to a PC.

The related connector is located inside the housing of the socket tray on the controller board.

1. Switch off the socket tray.
2. Unscrew the four Phillips screws on the top of the housing and open the housing.
  - The controller board is located inside the housing close to the battery connector device. Make sure the socket tray is switched off before plugging in the USB connector cable. See *Fig. 3-3: Internal control and function elements, Seite 7*, position 14.
3. Switch on the socket tray.
4. Plug the USB connector cable into the mini-USB socket on the controller board and connect it to the PC.
5. A suitable USB driver will automatically be installed on the PC. A internet connection is required.

#### 5.2.2 Installing the *LiveWire Utilities* software package

Download the *LiveWire Utilities* software package and the USB interface driver from the internet:

<http://software.apextoolgroup.com/current-software-packages/pc-software/>

To install the *LiveWire Utilities* software package, follow the installation instructions that appear when the installation file is opened.

A detailed description can be found in the Installation instructions P2372JH.

### 5.2.3 Starting the *LiveWire RF Settings* program

When the software package is installed, a folder *Apex Tool Group* is created. To start the included *LiveWire RF Settings* program:

1. Start the socket tray.
2. Use a USB interface cable to connect the socket tray to the PC.
3. Start the *LiveWire RF Settings* program.



In the basic settings, it is predefined that the socket tray switches off after three minutes in the idle state.

If the socket tray is switched off during configuration, proceed as follows:

1. Disconnect the USB interface cables.
2. Restart the socket tray.
3. After starting, reconnect the USB interface cable.

### 5.3 Setting WLAN parameters

Set the WLAN parameters with the *LiveWire RF Settings* program.

1. In the *Communication with tool* tab, select the *IRDA Serial* interface.  
The serial port corresponds to the interface port selected when the USB driver was installed. This interface port can be viewed in the Windows Device Manager.

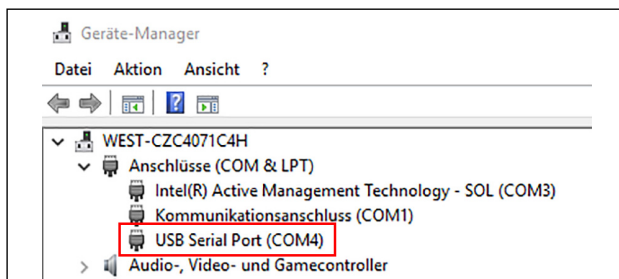


Fig. 5-2: Properties of USB serial port (COM4)

2. Settings for the following can be made in the *WLAN* tab:
  - SSID
  - Encryption
  - Network key
  - IP address

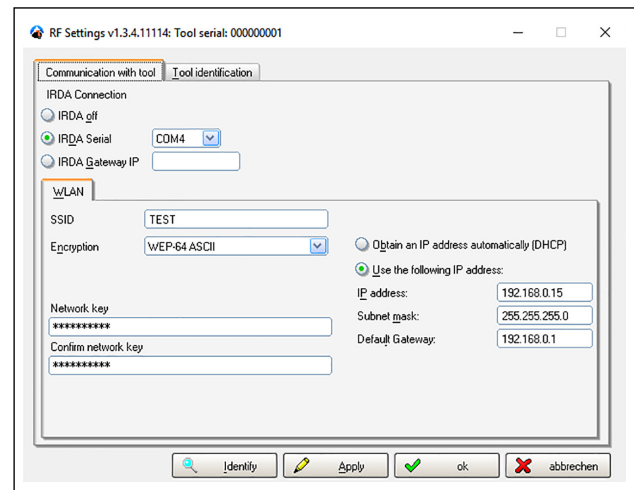


Fig. 5-3: Communication with tool tab

3. The correct connection can be checked in the *Tool identification* tab. There are several different ways of doing this:
  - Press <Identify>
  - Press <Update info>

→ If no error message is given and the serial number of the socket tray is displayed, the connection is correct.

If a connection to the socket tray is not possible, check that the socket tray is switched on and the correct interface has been entered at *IRDA Serial* in the *Communication with tool* tab.

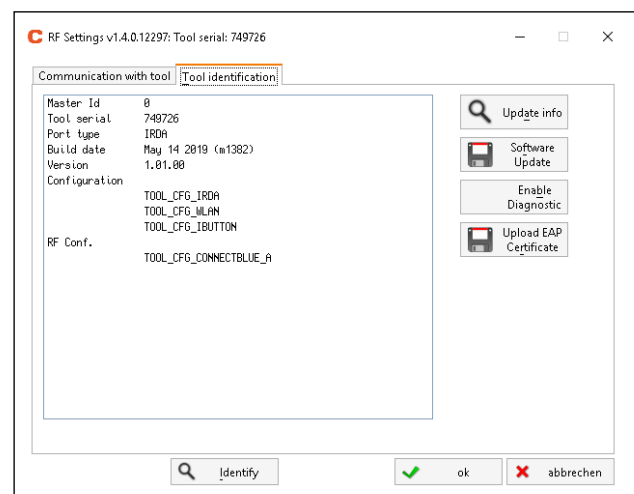


Fig. 5-4: Tool identification tab

4. To transfer the settings to the socket tray, press <Apply>.

## 5.4 Updating the firmware

Update the firmware using the *LiveWire RF Settings* program.

1. Select the *Tool Identification* tab.
2. Press <Update Info> to check whether a correct connection is possible.
3. To select suitable software, press <Software Update>. Make sure that firmware suitable for the socket tray is selected. This has the ending `.tma` and the name starts with `S169280`.
4. Confirm the update process.
  - During the firmware update, the red and green LED display on the socket tray flashes and *Softw update* appears on the LCD.

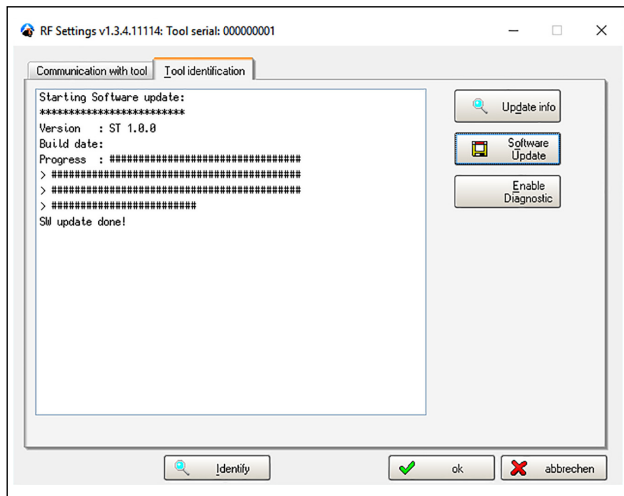


Fig. 5-5: Tool identification tab — software update

Once the update is complete, *Update OFF* appears on the LCD and the socket tray is automatically switched off.

The firmware is only temporarily stored during the download. The boot loader does not therefore flash-save the firmware until the next time the socket tray is switched on. For this reason, the switch-on process takes a little longer (about five seconds) the first time it is switched on after the firmware download.

When the firmware has been flash-stored, the red and green LED display flash.

After flash-storing, the boot loader automatically starts the firmware and the normal starting procedure takes place.

## 5.5 Connecting to a nutrunner control system

The nutrunner control allows the connection to the socket tray. The corresponding steps are described in the programming manual of the respective software.

If a connection is set up after switching on, the socket tray will expect a connection to be regularly set up by the nutrunner control.

The LEDs indicate whether the socket tray is connected to the nutrunner control:

- Green LED display lit up: Connection set up.
- Red status LEDs on the inserts for the sockets flashing: No connection could be set up within a programmed time. *Conn. lost* appears on the LCD. To fix the connection problem see chapter 8 *Troubleshooting, Seite 19*.
- If a connection is interrupted and set up again, the previous status of the status LEDs on the inserts of the sockets is restored and *Conn. set up* is displayed on the LCD.

## 6 Operation

### 6.1 General Information

The controls directly on the socket tray are restricted to:

- Switching on and off
- Removing and replacing the sockets
- Observing the corresponding instructions on the status LEDs and the LCD.

The nutrunner control gives user guidance:

- via the status LEDs on the inserts for the sockets
- optionally via the LCD

For the purpose of diagnosis, a submenu can be called up with the right function key <F2>.

See chapter 7.4 *Submenu*, Seite 16.

The connection is made using WLAN. Set the WLAN connection can be configured with the *LiveWire RF Settings* program. See chapter 5 *Commissioning*, Seite 11.

The WLAN settings are stored on a LiveWire Memory Chip (LMC). To transfer the settings to a new socket tray in the event of a socket tray failing, change the LMC.

### 6.2 Switching on/off

#### Switching on

To switch the socket tray on, briefly press the <on/off switch>.

#### Switching off

After the boot process has ended, the socket tray can be switched off.

It can only be switched off when the system is in the state *Status*. If the system is in the main menu or the submenus, press and hold the function key <F1> for two seconds to exit the menu level.

To switch the socket tray off, press the <on/off switch> and hold it for longer than two seconds. As soon as the LCD shows *Manual OFF*, release the <on/off switch> to switch the socket tray off.



#### Note

Remove the battery to store the socket tray.

### 6.3 Initialization error

During the initialization phase, the software examines and initializes the connected components. If any faults are detected during the initialization phase, the message: *Init. failed* appears.

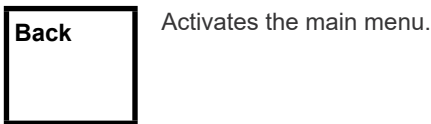
Fault	Possible cause	Measure
<b>LMC- error</b> →Control of the socket tray is not possible.	The LMC cannot be read or is not found.	Replace the LMC.
<b>WLAN initialization failure</b> →WLAN connection is essential.	Initialization of WLAN module failed.	Have the WLAN module exchanged by Service.
<b>Extension board error</b> →Control of the socket tray is not possible.	Difference detected between programmed and actual number of extension boards.	Call up the test function <i>Ext. board</i> to check how many extension boards have been found. If not all boards are found, open the socket tray and check the connections. If the error cannot be corrected, contact the service of the Apex Tool Group.

## 7 LCD

The operating menu on the socket tray 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>.

### Basic functions

- <F2>: Activate main menu.
- <F1>: Go to previous menu item.
- <F2>: Go to next menu item.
- Press <F1> for longer than two seconds to go to the next higher menu level.
- Press <F2> for two seconds to go to a submenu.
- Press the on/off switch: The highlighted entry is activated, or the highlighted activity is executed.
- When the menu is active, the initiators on the inserts do not respond to changes if the sockets are added or removed.
- At the end of each submenu there is an entry for *Back*.



### 7.1 Main function

After the initialization phase, the connection status to the nutrunner control and the operating status are displayed.

The connection status can be:

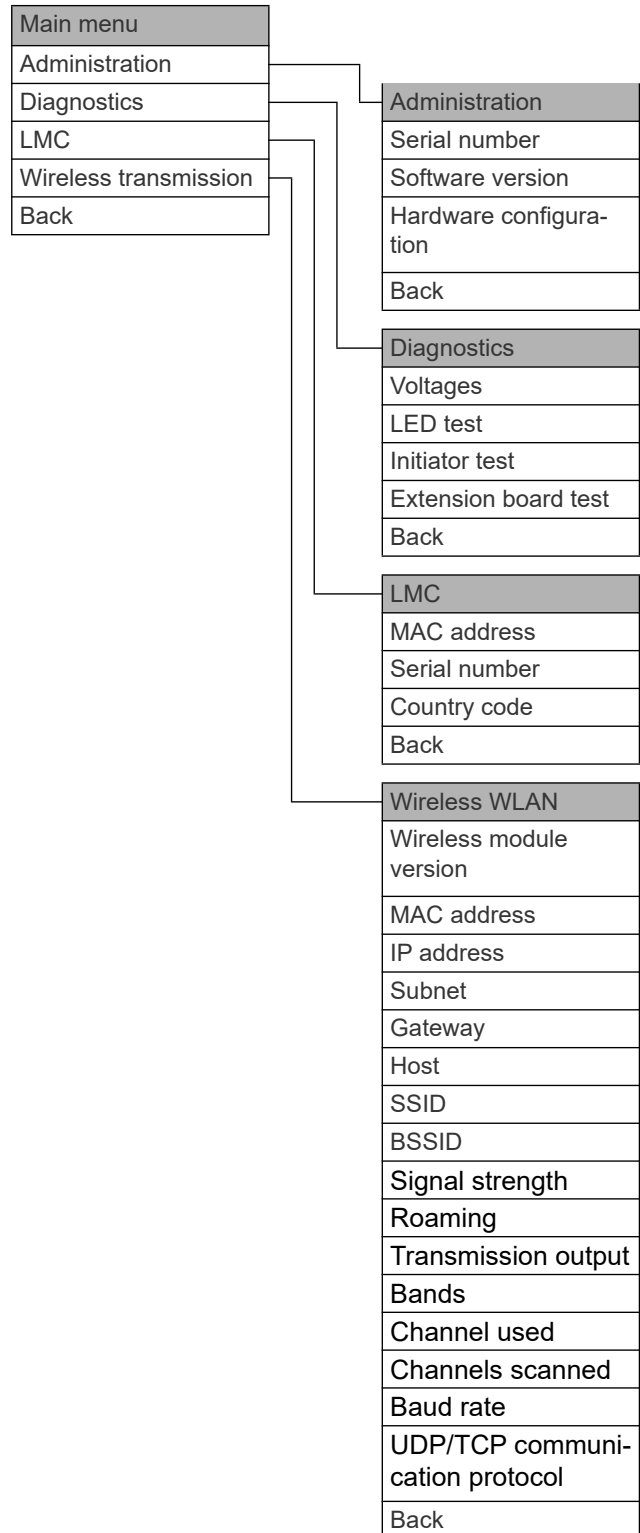
- **Waiting for connection:** Still no connection to a nutrunner control after switching on. Nothing is indicated by the status LEDs and no initiator status is evaluated.
- **Connection:** A connection to a nutrunner control exists. The connection controls the status of the status LEDs and evaluates the status of the initiators.
- **Connection lost:** A connection to a nutrunner control exists. However, the nutrunner control has not communicated with the socket tray again within the programmed time. This is indicated by alternating status LEDs flashing on the inserts of the sockets.

The display changes automatically between the connection status display *Init.* and the operating status *Power*. Function keys <F1> and <F2> under the LCD can be used to change between the connection status display and the operating status. After a button is pressed, the display freezes for five seconds and then automatically changes again.

The connection status is also indicated by the green LED display above the LCD. This lights up continually when a connection is present.

The operating status is indicated by the red LED display above the LCD. These flash if a fault is present. A fault here is either an initialization failure or a warning about the operating voltage or battery voltage.

### 7.2 Structure



## 7.3 Main menu

**>Main  
Diagnosis-  
tics**

**Diagnostics**  
Diagnostic functions for the socket tray.

**>Main  
Adminis-  
tration**

**Administration**  
Displays general points such as serial number, software version ....

**>Main  
LMC**

**LMC**  
Shows the *LiveWire Memory Chip* settings.

**>Main  
Wireless  
WLAN**

**Wireless transmission**  
Shows settings of wireless transmission.

### Warning message

If there is no more activity on the socket tray, a countdown appears on the display. This indicates the remaining time until the socket tray shut off. If new activities are carried out on the socket tray during this time, the countdown is interrupted and starts again from the beginning.

However, if the warning message *Batt. low* is displayed, the countdown until power is switched off is no longer interrupted.

**Power  
down  
mm:ss**

Warning time before shut off  
Displays the countdown before shut off.

**Batt.  
low**

Battery low  
Displays a warning message when the battery voltage falls below a defined limit.

In this case, recharge battery or replace it with one that is already charged.

Both warning messages can be set via the control software used.

## 7.4 Submenu

To change from the main menu to the diagnosis menu, press the On-/Off button or the function key <F2> and hold it for two seconds. To exit the diagnosis menu and return to a higher menu level, press the function key <F1> and hold it for two seconds.

To select menu items, press the <on/off button>. There are different submenus.

### 7.4.1 Administration submenu

**S/N  
000000  
245**

**Serial number**  
Display of serial number.

**Vers.  
V1.00.  
00**

**Controller software version**  
Displays the installed software version.

**HWkonf  
Ini 08  
LED 08**

Hardware configuration  
Number of programmed initiators and status LEDs.

### 7.4.2 Diagnostics submenu

**Voltage  
V26.40  
U19.00**

**Voltages**  
Second line: Current battery voltage. If the voltage drops below limit, a warning is output on the socket tray.  
Third line: Programmed value.

**Lamp  
test**

**LED test**  
The functional readiness of the status LEDs can be visually checked with the LED test. All status LEDs light up briefly in different colors.  
▶ To activate the function, press the On/Off button.



**Init.  
test**

**Initiator test**

The functional readiness of the initiators can be checked with the initiator test.

- If an initiator is assigned, the related status LED lights up green.
- If an initiator is not assigned, the related status LED lights up red.

► To activate the function, press the On/Off button.

**Ext. boar  
P 02.  
F 00**

**Extension board test**

**Number of extension boards:**

**P:** Number of programmed extension boards

**F:** Number of extension boards found

This can be used to check the essential function of the boards.

**7.4.3 LMC submenu (LiveWire Memory Chip)**

**MAC  
00302e  
e162f8**

**MAC address**

MAC address display.

**S: 5800  
00008D  
54C823**

**Serial number**

Serial number display.

**Country  
code  
World**

**Country code**

Various WLAN frequency ranges are available:

- World: worldwide approved
- US/CA: approved in the USA
- EU: approved in Europe
- JP: approved in Japan
- CN: approved in China

**7.4.4 Submenu WLAN wireless transmission**

The *WLAN wireless transmission* submenu shows the settings being used.

If no actions are carried out, the menu is automatically exited after 60 seconds.

The radio settings are parameterized via the *LiveWire RF Settings* software.

**Version  
#27173  
Dec 1**

**Wireless module version**

Displays the installed software version of the wireless module.

**MAC  
00302e  
e162f8**

**MAC address**

MAC address display

**IP 010  
122.0  
77.110**

**IP address**

IP address display

**Sub255  
.255.2  
40.0**

**Subnet**

Subnet display

**Gat010  
122.0  
61.001**

**Gateway**

Gateway display

**Host  
122.0  
61.001**

**Host**

Display of socket tray designation in a network.

**SSID  
APEX**

**SSID**

SSID display. Only a maximum of the first 12 characters are displayed.

**BSSID**

**BSSID**






Access point with which the WLAN socket tray is connected.

**WLAN  
Signal**

**Signal strength**

Change to graphic view of current quality of wireless signal via function key <F1>.

► To activate the function, press the On/Off button.

	<b>Roaming</b> Sensitivity display Socket tray reaction to change of access point
	<b>Transmission output</b> Transmission output display
	<b>Channel used</b> Display of channel currently used
	<b>Channels scanned</b> Display of channels scanned
	<b>UDP/TCP communication protocol</b> Selection of communication socket tray – control: TCP / UDP

## 8 Troubleshooting

Problem	Possible cause	Measure
<b>General socket tray</b>		
Socket tray indicates initialization error, see 6.3 Initialization error, Seite 14.	Expansion board(s) not inserted correctly.	▶ Check plug connection.
	Expansion board(s) not set correctl.	▶ Check the setting of the channel selector switch on the expansion board: - The boards must be numbered from 0 to the number -1 of the boards. - Each number may only be assigned once.
	Expansion board(s) defective.	▶ Contact Sales & Service Centers of the Apex Tool Group.
	Configuration of the expansion board(s) incorrect.	▶ Contact Sales & Service Centers of the Apex Tool Group.
	LMC is not readable.	▶ Change LMC.
	LMC is not available.	▶ Insert LMC.
	Initialization of the WLAN module failed.	▶ Contact Sales & Service Centers of the Apex Tool Group.
Idle speed not reached.	Battery voltage is too low.	▶ Use fully charged battery.
Expected number of test rundowns is not achieved with one charge of the battery.	Battery is not fully charged.	▶ Use fully charged battery.
	The warning threshold for undervoltage is not set to minimum value.	▶ On the control screen <i>Navigator</i> > <i>Tool Setup</i> > <i>Tool Settings</i> , reduce the <i>Undervoltage (V)</i> . The smallest possible value is 19 V.
	Battery has too many charging cycles.	After 800 charging cycles the capacity is reduced to approx. 60 %.

Problem	Possible cause	Measure for
<b>WLAN data communication between controller and socket tray</b>		
No WLAN data communication between the controller and socket tray.	The IP address of the socket tray is not correctly entered in the control.	<ol style="list-style-type: none"> <li>On the control screen <i>Tool Setup</i>, check whether the IP address of the socket tray has been entered in the field <i>Type</i>.</li> <li>Otherwise, mark the line and &lt;Edit&gt;. IP address of socket tray – see Tool in submenu <i>Wireless Settings</i>.</li> </ol>
	Socket tray not yet parameterized with the correct WLAN settings.	▶ Parameterize the socket tray with the <i>LiveWire RF Settings</i> program with the correct WLAN settings.
	WLAN settings are different for control and access point.	▶ On the control screen <i>Navigator &gt; Tool Setup &gt; RF Settings</i> , check whether the WLAN settings for the socket tray agree with the settings for the access points (network name, encryption, network key).
	A filter for MAC addresses is activated at the Access Point.	<ol style="list-style-type: none"> <li>Add the MAC address for the socket tray to the list of approved addresses at the Access Point.  MAC address of socket tray – see               <ul style="list-style-type: none"> <li>Label above the battery</li> <li>On the socket tray in the <i>Wireless Settings</i> submenu.</li> </ul> </li> </ol>
	Port 4001 is disabled by a firewall.	▶ Configure the firewall such that the required IP/MAC addresses can use port 4001.
	The wireless channel at the access point is outside the range supported by the socket tray.	▶ To change the wireless channel setting at the access point to the right wireless channel with respect to country code: EU 1–13; World 1–11 (see Installation Manual P1894E).
	Socket tray is already assigned to another control.	▶ Check whether another control already has a connection to this socket tray. In other words, another tool is using the same IP address.
IP address cannot be pinged.	IP Address already exists in network. In this case, the socket tray will not build up a connection.	<ul style="list-style-type: none"> <li>Check the physical connection (RSSI values).</li> <li>Check the assigned IP address.</li> </ul>
Occasional interruptions in WLAN data communication.	Distance between the access point and the tool is too great.	<ol style="list-style-type: none"> <li>Check the signal strength at the socket tray in the <i>Wireless Setting</i> submenu.</li> <li>If necessary, reduce the distance between the access point and the socket tray.</li> </ol>
	The socket tray is already assigned to another control.	<ol style="list-style-type: none"> <li>Check whether the socket tray (IP address) is also assigned to another control.</li> <li>If yes, delete the assignment in the other control. A socket tray can only be assigned to one control.</li> </ol>
	Excessive data traffic on WLAN Network.	Reduce data traffic on WLAN Network.

## 9 Technical Specifications

### 9.1 General Information

Ambient Conditions	
Storage temperature	-25° C to +70° C Remove the battery to store the socket tray.
Ambient temperature	0° C to +45° C
Permissible relative humidity	0...90%, without condensation

Electrical specifications	
Power supply with reverse polarity protection	
Supply voltage	Battery mode: 26 V/44 V Power Modul PM48
943620PT current consumption	approx. 170 mA
943610PT current consumption	approx. 220 mA
Protection rating (DIN EN 60529)	IP42

### 9.2 Mechanic dimensions and weights

Housing	943620PT	943610PT
Dimensions (L x W x H)	387.3 x 160 x 95	387.3 x 160 x 95
Length with 26V battery power supply		
Dimensions (L x W x H)	314.3 x 160 x 95	314.3 x 160 x 95
Length with power supply with M12 connector		
Weight (with battery)	4,160 g	4,210 g
Weight (without battery)	3,660 g	3,715 g
Color	RAL 2004	RAL 2004

## 10 Service



If repair is required send the complete tool to *Sales & Service Centers*. Repairs are only permitted by Apex Tool Group authorized personnel. If the tool is opened, the warranty is voided.

## 11 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 segregate the different materials before disposing of them.
- ▶ Follow the locally applicable regulations.



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

- ▶ Wasted rechargeable batteries must be disposed of. Return the tool and defective / power supplies to your company collection facility or to *Sales & Service Centers*.

### Battery Disposal in other regions

The definition of hazardous waste applying to batteries is different from region to region. Following defective battery removal, disposal must be in accordance with local regulations.


Dispose batteries at a local certified recycling center, or at a consumer store which is registered as a recycling center for specific products.

In the United States, there are a large number of local recycling centers available all over the country. To locate a recycling center near you, telephone 1-800-8-BATTERY or 1-877-2-RECYCLE.

## POWER TOOLS SALES & SERVICE CENTERS

Please note that all locations may not service all products.


Contact the nearest Cleco® Sales & Service Center for the appropriate facility to handle your service requirements.

-  Sales Center
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