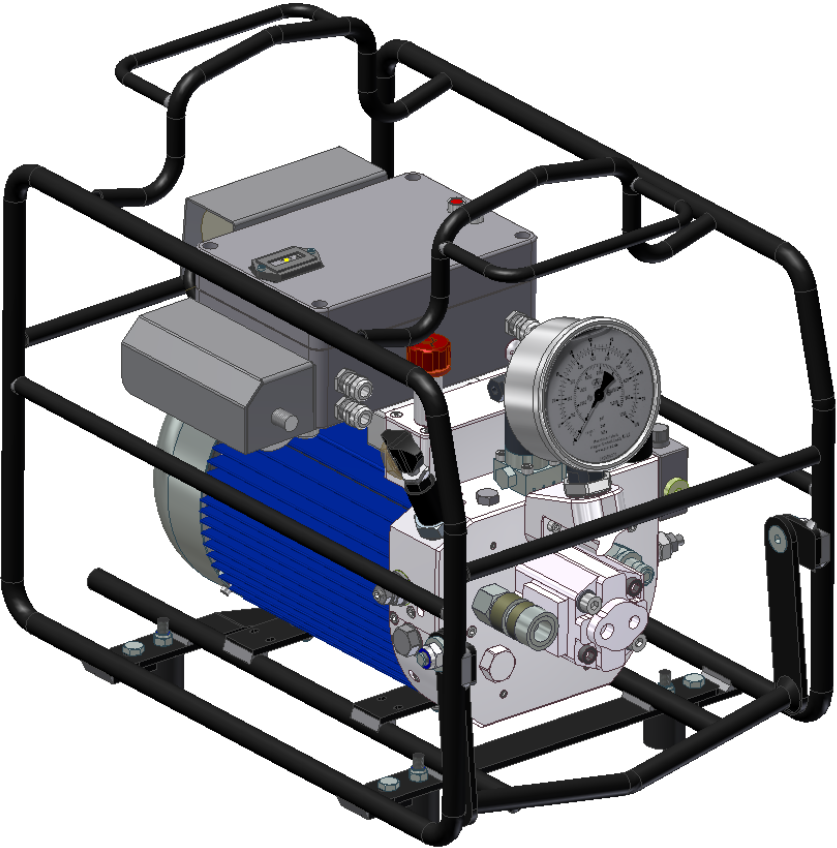


Electric power pack



XB-VAX
GP3 controller

Operating manual



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1. Manufacturer

Maschinenfabrik Wagner GmbH & Co. KG
53804 Much, Germany
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2. Notes

2.1. CE mark

The products are labelled with the CE mark. The Declaration of Conformity verifies that the products are in compliance with the safety directives of the European Union.

2.2. Directives

The product meets the requirements of the EC Machinery Directive 2006/42/EC.

2.3. Information about this manual

This manual contains important instructions on how to operate, set up and connect the unit. Read these instructions carefully before putting the unit into operation.

This is for your own protection and will provide you with important information on how to connect and use the unit in a safe manner.

The operating manual is an integral part of the unit. Store it close to the unit where it is available at all times. Observing every detail of the operating manual is a requirement for using the tool correctly and as intended. For this reason, pass this operating manual on to the next owner when selling the unit.

Please note that details of the illustrations and technical specifications contained in this operating manual may be different from the product you purchased.

The information provided in this operating manual is current as of the time it was printed. We reserve the right to make changes at any time without prior notice.

2.4. Information about the workplace

We recommend that you use the hydraulic tensioner in one-man operation. The operation of the unit is restricted to trained and authorised personnel. Conduct a risk assessment before

deciding to use the unit in two-person operation. When using the unit in two-person operation, ensure that the two users have previously cleared the application, the communication and the coordination of the unit with one another. The person positioning the tensioner should give the instructions regarding the operation of the power pack even if he is not operating the remote control.

The safety of the operator and the trouble-free operation of the unit are only guaranteed if you use original Plarad components. This applies both to device components and spare parts.

If different components are used, Maschinenfabrik Wagner cannot guarantee the safe and reliable operation of the tool.

2.5. Fundamental safety instructions on how to use mobile electrical devices

Attention! When using electrical devices, you need to observe the following fundamental safety measures to ensure protection against electric shock and the risk of injury and fire hazards.

Read all of these instructions before using this unit and store the safety instructions in a safe place for future reference.

Safe working

1. Keep your work area neat and tidy
 - Disorganisation in the work area may result in accidents.
2. Take environmental influences into consideration
 - Do not expose the unit to rain.
 - Refrain from using the unit in a wet or moist environment.
 - Provide for proper lighting in the work area.
 - Do not use the unit in areas where there is a risk of fire or explosion.
3. Protect yourself against electric shock
 - Avoid bodily contact with grounded

components.

4. Keep other persons at a distance
 - Do not allow other people, especially children, to touch the unit or the cable. Keep them away from the work area.
5. Store unused units in a safe location
 - When not in use, the units should be stored in a dry, elevated or enclosed location and out of the reach of children.
6. Do not overload your unit
 - You work better and more safely if staying within the specified range of capacity.
7. Use the correct unit
 - Do not use low-capacity units for heavy-duty work.
 - Do not use the unit for purposes for which it is not intended.
8. Wear suitable clothing
 - Do not wear loose-fitting clothing or jewellery as these may become caught in the moving parts of the unit.
 - We recommend that you wear non-slip shoes when working outdoors.
 - When wearing your hair long, secure it with a hairnet.
9. Use protective equipment
 - Wear safety goggles whenever you perform work that may endanger your eyes.
10. Do not use the cable for purposes for which it is not intended.
 - Do not use the cable to pull the plug out of the outlet.
 - Protect the cable against heat, oil and sharp edges.
11. Refrain from assuming abnormal body positions
 - Assume a firm stand and keep your balance at all times.
12. Service your units with care
 - Check the connecting cable of the unit on a regular basis and have it replaced by an

authorised specialist if you detect any damage.

- Regularly check extension cords and have them replaced if you discover any damage.
 - Keep grab handles dry, clean and free of oil and grease.
13. Pull the plug out of the power outlet
 - When not using the unit, before performing maintenance and when changing tools, disconnect the unit from the power supply.
 14. Use extension cords when working outside
 - When working outdoors, use only extension cords that are approved for this type of usage and labelled accordingly.
 15. Be alert
 - Pay attention to what you are doing. Use reason while performing your work. Do not use the unit unless you are fully concentrated.
 16. Inspect the unit for possible damage
 - Before continuing to use the unit, you must inspect all safety devices or lightly damaged parts carefully to verify that they function properly and as intended.
 - Check if the moving parts work properly without sticking or whether parts have become damaged. All parts must be fitted properly and meet all requirements in order to ensure that the unit will work faultlessly.
 - Unless specified otherwise in the instructions for use, damaged safety devices and parts must be repaired or replaced properly by an authorised specialist workshop.
 - Damaged switches must be replaced by a customer service workshop.
 - Do not use any units on which switches cannot be turned on and off.

Maintenance, servicing, and repairs

- Pull the power plug before adjusting any

- settings and prior to servicing or repairs.
- Allow only an electrically skilled person to repair your unit
- This electrical unit conforms to all applicable safety regulations. Repairs may only be performed by an electrically skilled person using original spare parts; otherwise, the user may experience accidents.

2.6. Fundamental safety instructions on how to use power packs

When operating the unit, observe all laws and regulations applicable at the site of operation. Verify every time before using the unit that the unit operates in a reliable manner and is in proper condition. The user must be familiar with the operation of the unit. Before putting the unit into operation, check the hose line(s) for damage. Replace any damaged hose lines, couplings and nipples without delay.

Do not couple/uncouple connected devices unless the power pack is switched off. Otherwise, the unit may become damaged and allow hydraulic fluid to escape.

This may result in eye injuries and burns. When contact with operating materials has occurred, follow the material safety data sheets and the product information relating to the operating materials.

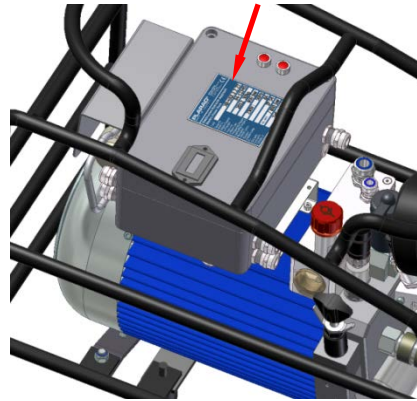
When using an extension cord with a small cross-section and a great length, a voltage drop may occur which would affect the start-up performance of the motor. Use only extension cords that meet the following requirements:

Mains voltage	Minimum cross-section
230/400 V	1.5 mm ²
100/110 V	2.5 mm ²

When working outdoors, only use extension cables that are approved for this purpose and labelled accordingly.

2.7. Product identification

The power pack is marked by the type plate that is found on the cover of the control enclosure.



2.8. Symbols and warnings



- CE mark



- Follow the instructions for installation and use



- Wear hearing protection



- Use protective eyewear



- Hazard warning.
The hazard category is specified in the text found next to the respective warning



- Warning of dangerous electrical voltage



- Warning of a hot surface



- Service seal specifying the date of the next inspection



- WEEE recycling/disposal instructions.
This product must not be disposed of with regular household waste.

3. Product information

3.1. Intended use

The PLARAD power pack is a mobile hydraulic power generator that is used to power PLARAD hydraulic tools for the purpose of creating bolted connections. The power pack may only be used for commercial purposes.

The power pack is designed for indoor and outdoor operation within an ambient temperature range of -10°C to +50 °C. If intending to deviate from these conditions, consult the manufacturer first.

The power pack can be connected to a stationary factory mains network or a mobile power generator provided the power requirements specified under Technical specifications are observed.

Allow only Maschinenfabrik Wagner or bodies authorised by Maschinenfabrik Wagner to install, readjust, modify, expand and repair the unit. Use the unit only as described in the operating manual. Operating the unit in a safe and reliable manner will otherwise not be possible. Unauthorised modifications may lead to unexpected hazards.

The safety of the operator and the trouble-free operation of the unit are only guaranteed if you use original PLARAD components. This applies both to parts of the unit and spare parts.

If different components are used, Maschinenfabrik Wagner cannot guarantee the safe and reliable operation of the tool.

3.2. Non-intended use

Any use deviating from or exceeding the scope of intended use is considered to be improper. The risk is borne solely by the owner / user.

3.3. Other applicable operating manuals

- BGR/GUV-R 194 Use of hearing protection
- BGR 237, Rules regarding the safe use of hydraulic hose lines
- Shell Tellus S2 V 15, PD / MSDS

4. Scope of delivery

- Power pack, filled with oil and ready for use

4.1. Consumables (order more if necessary)

- Filter cartridge 10µm
- Hydraulic oil 1 l Shell Tellus S2 VX 15
- Hydraulic oil 5 l Shell Tellus S2 VX 15

5. Technical specifications

Maximum operating pressure
800bar

Minimum power input for mobile power generators
4 kVA

L x W x H * approx. 500 x 350 x 430 mm

Volume flow 1-stage power packs**:
10 to 800 bar 0.8 to 3.5 l/min

Weight* 22 to 40 kg

Mains connection See type plate

Sound pressure level
(800bar)** 83.7 to 89.2 dB(A) 1m

** when the power pack is in operation, the sound pressure level drops by 6 dB(A) with every meter of distance to the unit.

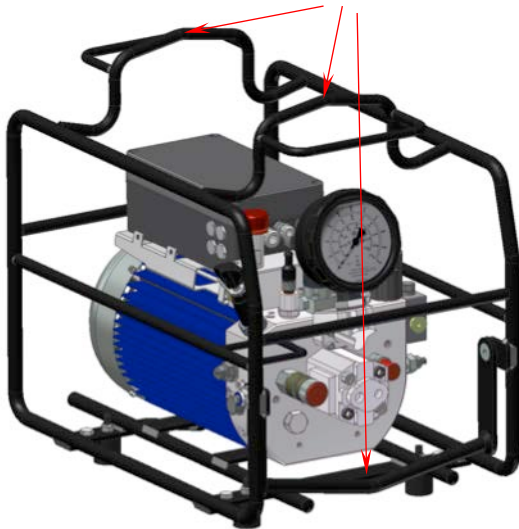
Information about operating temperatures

When operating in temperatures of -5 °C or less, keep starting the power pack until the motor starts running (several times if necessary). Set the pressure relief valve to 400 bar. Do not connect a hose and let the power pack run for 5 minutes while holding down the button "manual". By doing so, you are allowing the hydraulic oil to reach its necessary operating temperature before work begins.

* actual performance characteristics and dimensions/weights vary with type and model

6. Transport



When using a crane or similar lifting gear for transport, attach the power pack at the attachment points identified below.





7. Description of operation

This section contains a brief description of all controls and connections. The operating steps explained here are necessary for the safe use of the power pack.

7.1. Safety instructions for operation

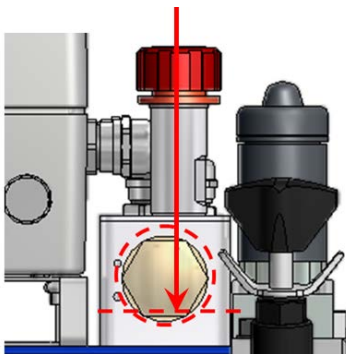
	<p>Caution!</p> <p>Noise emission of approx. 85 dB(A).</p> <ul style="list-style-type: none"> • Wear hearing protection in accordance with EN 458 if the distance between operator and power pack is less than 2 m during operation (BGR/GUV – R 194)
	<p>Warning!</p> <p>The power pack can reach surface temperatures of up to 80 °C during extended operation and in high ambient temperatures.</p> <ul style="list-style-type: none"> • Wear heat-resistant safety gloves! Allow the power pack to cool off before moving it.

	<p>Warning!</p> <p>Unless set up securely, the power pack may tip over or fall down.</p> <ul style="list-style-type: none"> • Make sure the power pack always stands firmly on a level surface with all four feet!
	<p>Warning!</p> <p>Hot hydraulic fluid may escape under great pressure and cause severe burns and cutting injuries.</p> <ul style="list-style-type: none"> • Verify that the unit is tight before putting it into service and while operation is in progress. If detecting any leaks, shut down the unit and repair it before putting back into operation.


7.2. Check the oil level of the power pack and refill oil if necessary; connect the mains voltage; start up; bleed the hoses

1. Check the oil level. While doing so, make sure the power pack is standing horizontally to ensure a proper reading of the oil level.


The oil level is OK if the oil is visible at mark 1 on the sight glass.



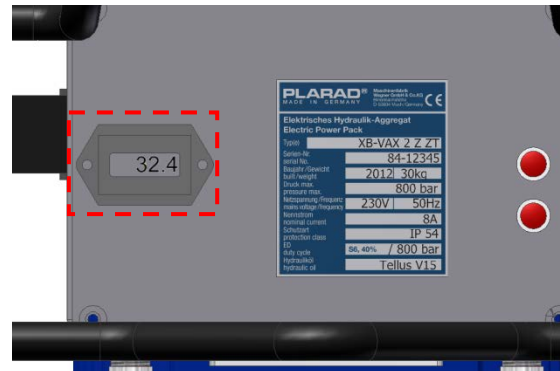
2. If the oil level is not OK, fill in hydraulic oil using the oil filler neck until the oil is visible at the 1st mark on the sight glass.
3. Check the mains connection lead for damage and do not connect it unless you find no damage.
4. Compare the power supply specified on the type plate with the available mains supply or the specifications of the mobile power generator. Do not connect the power plug to the power supply unless the specifications match.

 **Warning!**
 Check the mains connection lead for damage before connecting the unit.


- Connect the power pack to the mains voltage

 **Warning!**
 Observe the mains voltage specified on the type plate.

- An indicator on the power pack shows the hours of operation after the connection to the mains connection has been established

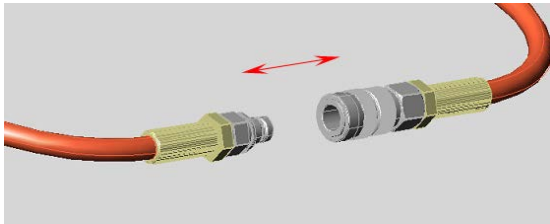


- Connect the hydraulic hoses with the unit.
- You connect the unit equipped with a coupling at the pressure port (applies only if you use CEJN series 115. The connection may be different for certain units).

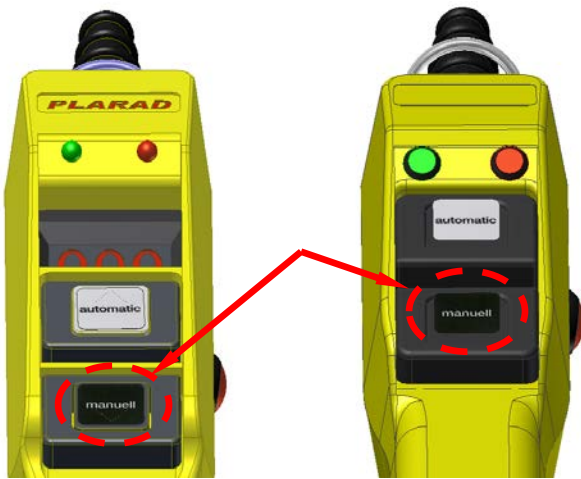
 **Warning!** Do not yet connect the hydraulic tool.



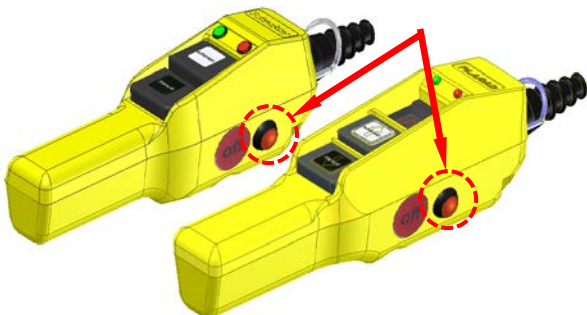
- Connect the hydraulic hoses at the other end.



- You start the unit by pressing the "manual" button.
- The unit is ready for operation after approx. 3 seconds



- Press and hold the "manual" button for approx. 30 seconds as this will also bleed the hydraulic hoses. During this process hydraulic oil is pumped through the circuit, allowing any air trapped in the hydraulic circuit to escape through the tank.
- Switch off the unit by pressing the "OFF" button



7.3. Automatic switch-off

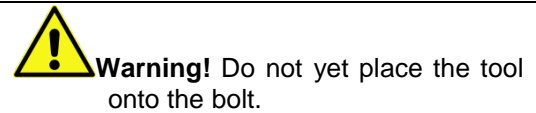
- Once the motor is started, the unit will switch off automatically after 20 seconds unless one of the buttons is pressed.
- !!!Attention Hoses cannot be coupled and uncoupled unless the unit has been switched off.

7.4. Manual switch-off

- Pressing the "off" button switches the unit off in any operating state

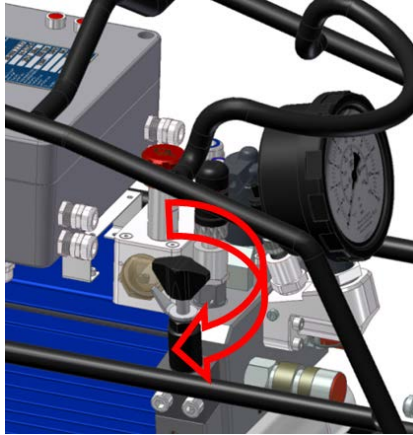
7.5. Learning mode

When set to learning mode, the unit will take measurements. The unit requires these measured values to control the bolting process automatically.



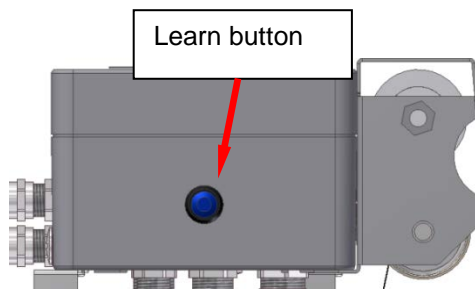
- Connect unit and tool to the hydraulic hoses
- !!!Attention: Hydraulic hoses cannot be coupled and uncoupled unless the unit has been switched off

- Press and hold the button "automatic" and set the hydraulic pressure at the pressure adjusting valve that is needed to generate the required torque as given in the torque table of the hydraulic tool



Pressure adjusting valve

- Keep the "automatic" button depressed and press and hold the "learn button" on the control enclosure of the unit at the same time until the two indicator lights on the remote control come on.
- This procedure enables learning mode automatically and stores the measured values in the memory.
- The stored values allow the unit control to detect which tool is connected to which hose on the unit.



- The bolting system is now prepared for automatic operation.

- The stored measured values are lost when the unit is disconnected from the mains power supply.

7.6. Erase function for stored measured values

- You can delete the measured values programmed into the memory of the unit control. To do so, press and hold the blue button on the control enclosure until the indicator light on the remote control goes out.
- The measured values stored in the memory will also be deleted by disconnecting the unit from the mains voltage.
- You can now start a new learning process

7.7. Uncoupling hoses or tool

- After the unit is switched off, the unit, the hoses and the tool remain pressurised. Before you can uncouple the hoses from the unit or the tool from the hoses, you need to depressurise them by pressing the black cap at the multi-way valve.



8. Working with hydraulic tools

8.1. Automatic mode

- Place the bolting tool onto the bolt.
- Start the bolting process by pressing and holding the "automatic" button. Automatic mode is indicated by the red indicator light.



- Once the bolting process is complete, the indicator light turns off, and the green indicator light comes on.



8.2. Manual mode

- Learning mode is not enabled during manual operation. Before starting the bolting operation, set the pressure to be generated for the required torque as given in the torque table of the hydraulic tool.

Button "manual" pressed hydraulic tool moves forward

Button "manual" not pressed hydraulic tool moves back

- Press and hold the "manual" button until the tool stops rotating.
- Release the "manual" button until the tool has moved back.
- This process is repeated until the tool stops rotating after you press again and until the preset pressure has been reached.

8.3. Tightening bolted connections

- The automatic system allows you to re-tighten or tighten further bolted connections that have already been tightened previously. You can, for instance, tighten all bolts on a flange with 200bar first before tightening them further with 300bar and 450bar in a second and third pass, respectively. To do so, complete learning mode at 200bar during the first pass. The unit will then use this setting to tighten all bolts. Complete the second pass with the learning mode set to 300bar, etc.

8.4. Manual relief in case of a mains failure

- Switching off the unit will activate the main valve to effect a pressure drop in the unit and the hoses. If the hoses cannot be relieved on account of a power outage or other type of disconnection from the mains, you need to activate the main valve manually using the rubber cap in order to generate the pressure drop in the unit and the hoses. Once the pressure has been discharged, the hoses can be uncoupled from the unit.



8.5. Safety functions

- If the pressure reached during the bolting process deviates from the calibrated pressure by more than 10 bar, the bolting process is interrupted, which is indicated by an alternating flashing of the red and the green indicator lights.
- If the pressure generated during the bolting process remains below the calibrated pressure, the unit will not automatically interrupt the process.

8.6. Maintenance instructions

- You need to check the oil level of the unit on a regular basis and, especially, prior to work.
- We recommend that you change the oil every 150 hours of operation, but no later than every 12 months.
- The couplings and nipples of the unit as well as the hoses and the torque tools need to be kept clean. Clean couplings and nipples with a cloth prior to connecting them.
- Seal the couplings and nipples with sealing caps prior to transport and storage.

8.7. Description on how to monitor the mains power supply

8.7.1. Voltage monitoring

- This function is merely designed to check the supply voltage and executed by the electronic system of the unit.
- The check is always carried out when the mains connection has been established and the motor is not running. The check is not performed during operation.
- The units can be operated within a mains voltage range that corresponds to $\pm 30\%$ of the rated mains voltage.
- Example: Rated mains voltage = 100V
- The unit can be operated without a problem within a range of 70V to 130V.

- If the mains voltage is below -30% or above $+30\%$ of the rated mains voltage, the unit cannot be switched on - the electronic system will lock all functions. This is indicated by a permanently lit LED 2.
- Attention!!! Voltage monitoring is a controlling function designed to protect the unit against excess voltage. The electronic system is not protected against destruction in case of excess voltage.

8.7.2. Current monitoring

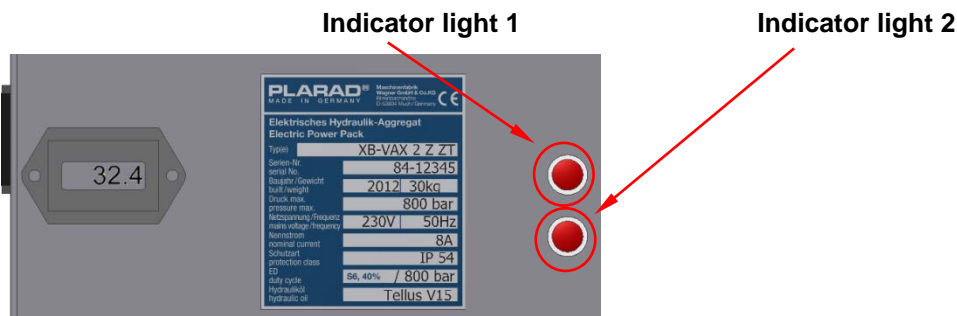
- The current monitoring function protects the units against excessive currents that would lead to the destruction of such electric components as the motor or the electronic control system.
- The current monitoring function is active during operation.
- If the current consumption of the unit exceeds a specified value, the unit will switch off, and the electronic system will lock all functions. This is indicated by a flashing LED2. This ensures that the unit will not sustain any damage.

8.8. Error message indicator lights

There are 4 indicator lights on the bolting system. Two indicator lights in the cover of the control enclosure and two on the remote control.

The indicator lights housed in the cover of the control enclosure signal different functions that will lead to faults during the operation of the units. The lights on the remote control indicate functions relating to the operating states that are relevant to the bolting process. The various functions are indicated by different blinking frequencies.

8.9. Indicator lights on the control enclosure



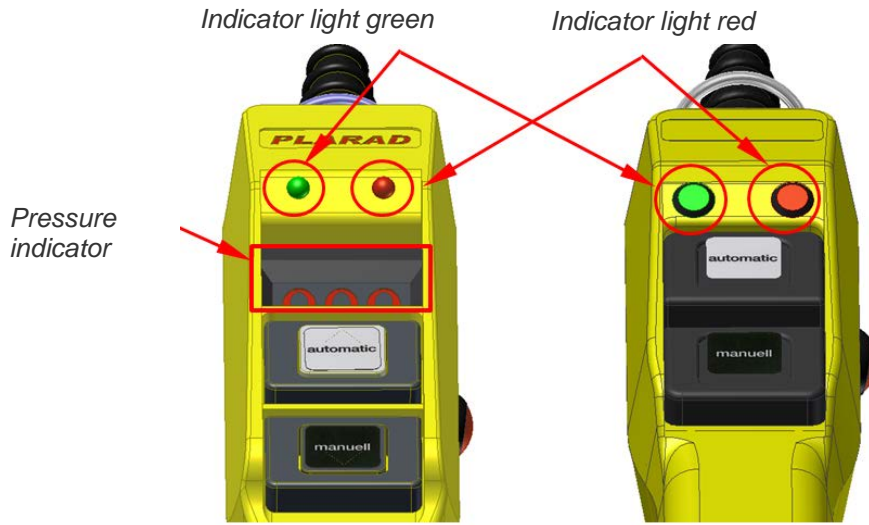
Indicator light 1 signals faults of the basic power pack functions.

Blinking frequency	Cause	Remedy
----- Permanent light	"Wrong rotational direction" clockwise (three-phase current only)	Use the phase changing switch in the power plug to perform a phase change
- - - - - 1x flash- pause	Temperature cut-out –Maximum temperature reached >90°C Thermal sensor has tripped	Let the power pack cool off
- - - - - 2x flashes- pause	Wrong program set Switch position greater than position 7 at coding switch S1 on the control circuit board	The program parameters have been set correctly at the factory. The program parameters do not have to be adjusted unless following a circuit board change.
- - - - - 4x flashes- pause	Phase missing (three-phase current only)	Check the point of electricity consumption

Indicator light 2 (monitoring of the mains power supply) signals faults of the supply voltage

Blinking frequency	Cause	Remedy
----- Permanent light	The mains voltage is outside of the +30% to –30% range of the rated mains voltage This function is only enabled if the motor is not running – monitoring without load	Check the point of electricity consumption
- - - - - 1x flash- pause	Current consumption has exceeded the permissible value	Check the point of electricity consumption

8.10. Indicator lights on the remote control



Blinking frequency	Function in automatic mode
Indicator light green and red, permanent light	Bolting system calibrated. System is ready for use.
Indicator light red, permanent light	Bolting system is in tightening mode.
Indicator light green, permanent light	Bolting process completed.
Indicator light red, flashing fast	Bolting system is in loosening mode.
Indicator light red and green, flashing alternately	Error message: The pressure reached differs from the calibrated pressure by more than +/- 10 bar. Unit depressurises. See also additional causes of errors displayed by indicator lights on the control unit housing (see 8.9).

9. Instructions on disposal

Dispose of the power pack as required by local regulations.



Attention!

This symbol points out that the product must not be disposed of with regular household waste as specified in the WEEE directive (Waste Electrical and Electronic Equipment Directive, 2002/96/EC) and national laws.

- **Dispose of this product at an authorised waste collection facility. Return the product if, for instance, purchasing a similar product or take it to a waste collection facility that is authorised to recycle waste electrical and electronic equipment.**
- **Turn to your local administration office, your public waste disposal authority, a facility that is authorised to dispose of waste electrical and electronic equipment or your waste management company.**

Version	Date	Author	Reason for change / comments
003	05/04/2017	Streffing	"Remote control indicator lights" revised



... a successful connection!

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Last update: 05/2021

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