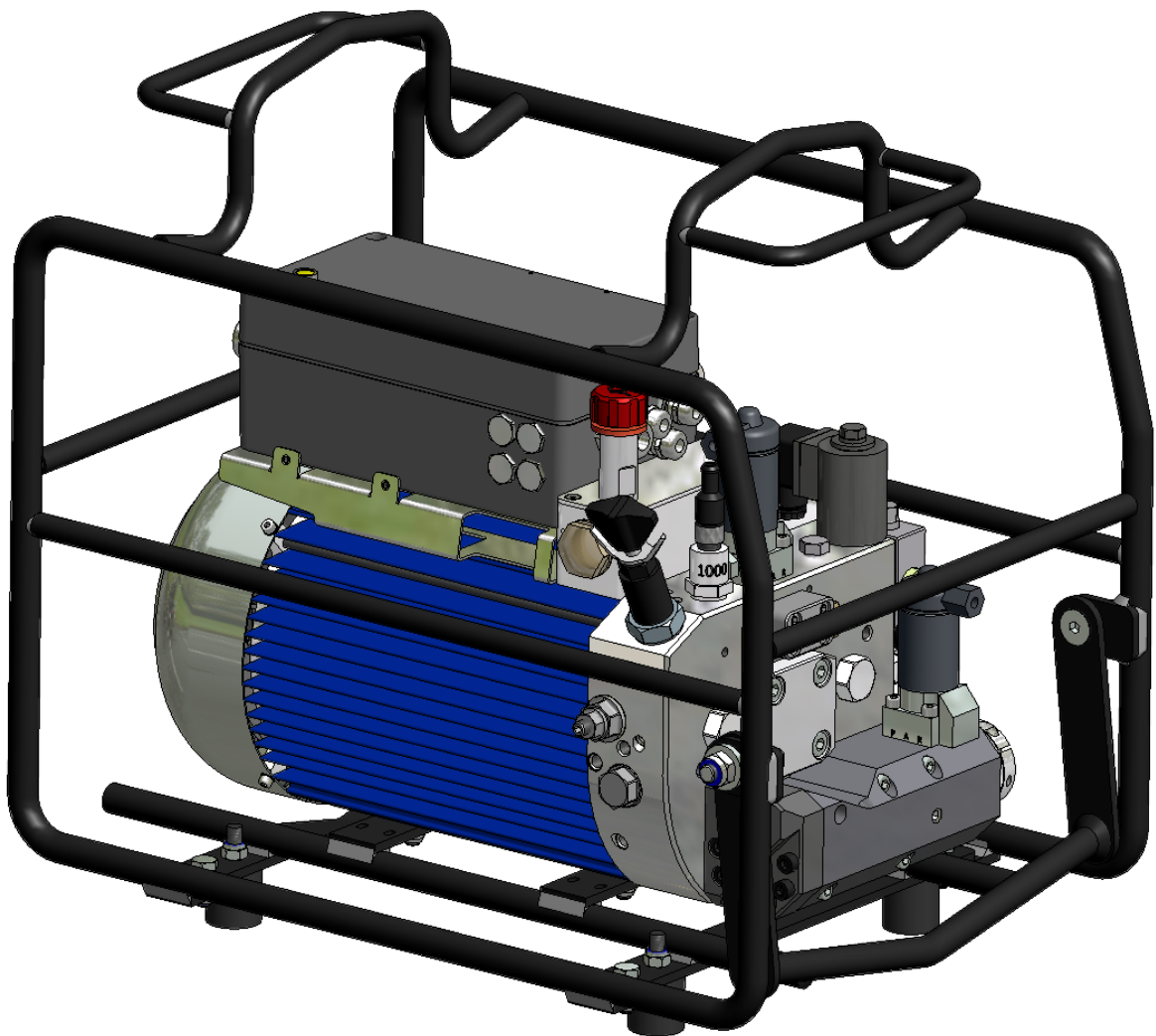


Electric power pack Series X32



TAX

Operating manual



Software version 4159 or later
Store for future reference

PLARAD[®]
Torque & Tension Systems



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1. Manufacturer

Maschinenfabrik Wagner GmbH & Co. KG
53804 Much, Germany
+49 (0) 2245 62-0

2. General information

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 parts of the unit 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

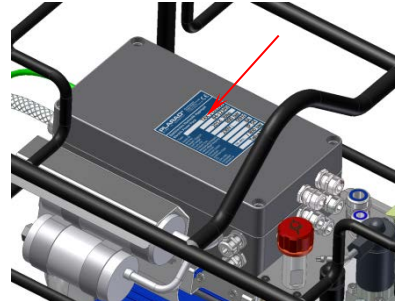
When operating the unit, observe all laws and regulations applicable at the site of operation. Verify every time before using the unit that the unit operates in a reliable manner and is in proper condition. The user must be familiar with the operation of the unit. Before putting the unit into operation, 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.

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 of the TAX model series is a mobile hydraulic energy converter.

The TAX 1 and TAX 3.5 models generate a maximum pressure of 1,500 bar and 2,400 bar, respectively, and are used to pretension bolted connections in combination with PLARAD tensioners.

The power pack may only be used for commercial purposes and only in connection with PLARAD tensioners.

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 all units 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 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

Documenting a bolting application requires the use of the control unit.

The control unit's scope of delivery includes:

- Control unit
- Docking station for control unit
- Power supply unit
- Adapter cable - power pack
- Network adapter
- Network cable
- PC software application X32
- Software - network adapter

5. Technical specifications

Max. operating pressure	1,500 bar/2,400 bar
Minimum power input for mobile power generators	4 kVA
Mains connection	see type plate

	TAX 1	TAX 3.5
Volume flow	1.2/0.4 l/min	3.0/1.0 l/min
Sound pressure level	78 dB (A)* 1 m	89 dB (A)* 1 m
L x W x H (mm)	450 x 317 x 366	500 x 343 x 465
Weight	31 kg	41 kg

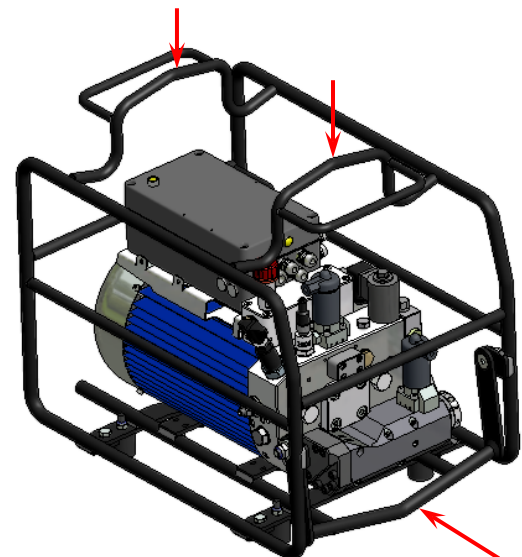
* when the power pack is in operation, the sound pressure level drops by 6 dB(A) with every meter of distance to the unit.

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 or tensioner 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.

6. Transport

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



7. Preparing 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



Caution!

Be aware of noise emissions!

- **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).**



Warning!

The power pack can reach surface temperatures of up to 80°C during extended operation and in high ambient temperatures.

- **Wear heat-resistant safety gloves!**
- **Allow the power pack to cool off before moving it.**



Warning!

Unless set up securely, the power pack may tip over or fall down.

- **Make sure the power pack always stands firmly on a level surface with all four feet!**



Warning!

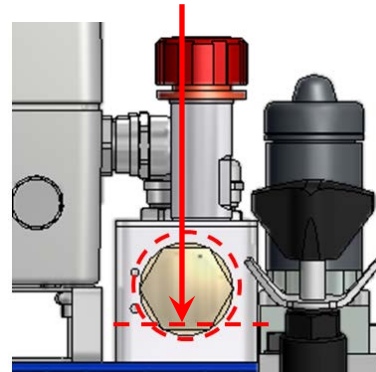
Hot hydraulic fluid may escape under great pressure and cause severe burns and cutting injuries.

- **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

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 when the oil at 1 point in the sight glass is visible..



2. If the oil level is not OK, fill in hydraulic oil using the oil filler neck until the oil at 1 point in the sight glass is visible.
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.
5. Establish the connection to the mains supply to put the unit into operation.

The power pack starts up performing a self-test. During this test, the indicator lights on the remote control light up for approx. 5 seconds.

While the test is in progress, the remote control may show error messages for a brief period of time. If these error messages are still indicated when the test is complete, the power pack needs to be turned in for service.

The following screen will appear following the

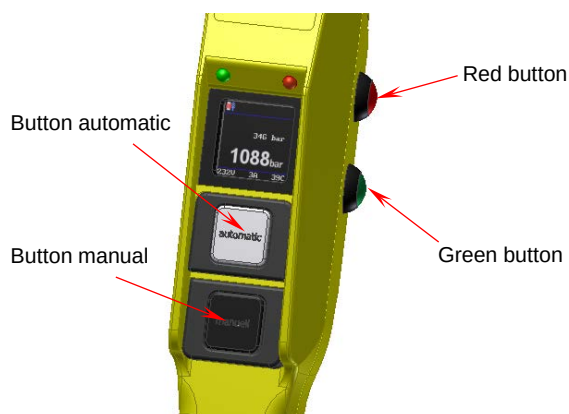
completion of the self-test:



7.3. Setting up the basic settings of the power pack

Before you start operation, you can use the menu "Settings" on the remote control to set up the basic settings for your power pack.

1. To access this menu, press and hold the "red" button (for at least 2 seconds) while pressing the green button at the same time.



2. Use the buttons "automatic" and "manual" to navigate through the menu.
 - Use the "green" button to select a child menu.
 - Use the "red" button to return to the previous menu level.

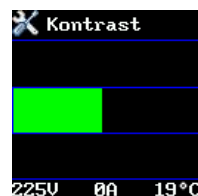
3. Select the desired language for the remote control in the child menu "Language".



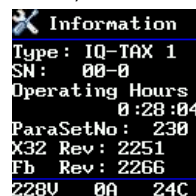
4. Press the "green" button to store the language setting.
5. You can use the "red" button to switch or exit the menu level.
6. Adjust the display contrast in the child menu "Contrast". To do so, select the menu item "Contrast" using the "green" button.



7. Adjust the contrast using the buttons "automatic" and "manual".



8. You can use the child menu "Information" to bring up various information about the power pack such as the serial number, the operating hours, and the software version.



9. You can select the units in which you wish to display these values in the child menus "Temp." and "Pres." Temperature and pressure can be indicated in degrees Centigrade or degree Fahrenheit and bar or psi, respectively.

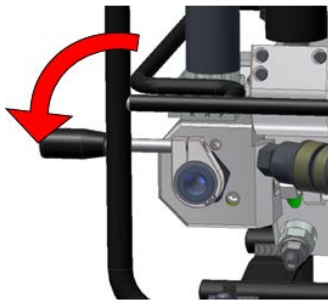
Press the "green" button in each case to toggle the units.



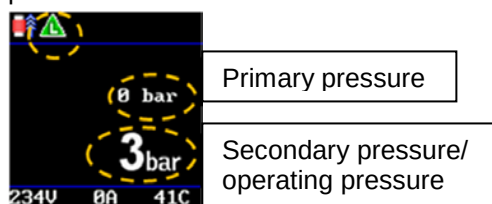
7.4. Setting the pressure

The pressure booster is mounted on the front end of the power pack, which allows you to operate tensioners with a maximum pressure of up to 1,500 or 2,400 bar.

1. To build up pressure, close the manual pressure relief valve.



The bottom line of the remote control display indicates the secondary pressure (the operating pressure that is supplied to the coupling). The upper short line shows the primary pressure of the pressure booster:



2. The hydraulic hose line must be connected without the help of tools.



Warning!

Hot hydraulic fluid may escape under great pressure and cause severe burns and cutting injuries.

- Use only hydraulic hoses that are approved for this pressure range!

7.4.1. Set pressure, manually (Recommendation: Set pressure, automatically)

1. Refer to the tensioning force table of the tensioner for the value of the operating pressure needed to generate the required tension.
2. Open the pressure relief valve all the way.
3. Connect the hydraulic hose without using tools.
4. Press the button "manual" to start the power pack.
5. Set the pressure you read at the pressure relief valve of the power pack as described in the next step.
6. Press the "manual" button repeatedly while turning the pressure relief valve clockwise until the remote control indicates the operating pressure (lower indicator of the two pressure indicators).



7. If the operating pressure was exceeded, you need to release the pressure in the power pack and repeat the pressure setting sequence:
 - Press the "green" button.
 - Repeat the pressure setting procedure.
8. Relieve the pressure from the power pack when the pressure has been set correctly:
 - Press the "green" button.
9. Switch off the power pack and press the "red" button.
10. Connect the tensioner to the hydraulic hose.

The power pack is now prepared for operation with the tensioner. You can place the tensioner onto the bolting.

7.4.2. Set pressure, automatically

1. Refer to the tensioning force table of the tensioner for the value of the operating pressure needed to generate the required tension.
2. Open the pressure relief valve all the way.
3. Connect the hydraulic hose without using tools.
4. Press the button "manual" to start the power pack.
5. Set the pressure you read at the pressure relief valve of the power pack as described in the next step.
6. Press and hold the "automatic" button. While doing so, turn the pressure relief valve clockwise until the remote control indicates the operating pressure (lower indicator of the two pressure indicators).
7. Keep holding down the "automatic" button until the "red" LED is lit permanently. Next, press the "manual" button for a brief period.

The pressure has been set, and the power pack is depressurised.

8. If the operating pressure was exceeded, you need to release the pressure in the power pack and repeat the pressure setting sequence:
 - Release the "automatic" button.
 - Repeat the pressure setting procedure.
9. Switch off the power pack.
10. Connect the tensioner to the hydraulic hose.

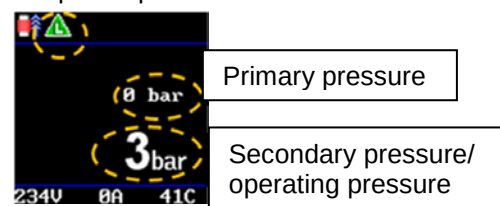
The power pack is now prepared for operation with the tensioner. You can place the tensioner onto the bolting.

7.5. Tensioner mode

The power pack must be connected to the mains supply. Disconnecting the unit from the mains supply will reset all settings to their default values.

1. Refer to the tensioning force table of the tensioner for the value of the operating pressure needed to generate the required tension.
2. Open the pressure relief valve all the way.
3. Press the button "manual" to start the power pack.

The following icon will be shown on the display after the power pack is switched on:



7.5.1 Calibrating the pressure

The calibrated pressure is stored. This ensures that the bolting processes are completed properly.

The calibration protects the bolting application against inadvertent adjustments of the pressure adjusting valve (excess pressure).

Set the operating pressure you read at the pressure relief valve of the power pack as described in the next step:

1. For this purpose, the hydraulic hose must be connected without using tools.
2. Press and hold the "automatic" button. Using pump strokes, the power pack will now automatically generate a rising pressure in the pressure booster.
3. Keep turning the pressure relief valve clockwise

until the remote control indicates the operating pressure.

Keep holding down the "automatic" button while doing so.

If you inadvertently set a pressure level that is too high during the pressure calibration, you need to release the "automatic" button.

The power pack is relieved automatically.

The process must be repeated as described under 4.

4. Press and hold the "automatic" button. Once the constant operating pressure has been reached, the red LED on the remote control lights up. A brief additional press on the "manual" button will end the "Set pressure automatically" sequence. The display on the remote control (and on the control unit) will now substitute the calibration symbol  with the OK  or the NOK  symbol.
The power pack stops pumping even though the "automatic" button is still depressed.



Attention!

Monitor the indicated pressure while tightening the fastener in manual mode:

- **If the pressure drops below the minimum value, you need to compensate by repumping**

The display will keep indicating the operating pressure until the "automatic" button is released.



5. Releasing the "automatic" button concludes the calibration. The pressure booster for the secondary pressure is released, and the system is no longer pressurised.
6. Lock the setting of the pressure adjusting valve using the winged locknut.
7. Switch off the power pack. It is ready for use.

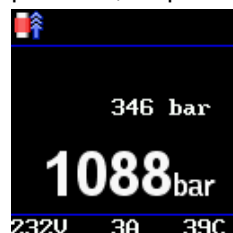
8. The tool can now be connected to the power pack.

9. You can place the tool onto the bolting application.

8. Operation

8.1. Operating the tensioner manually (the recommended option is automatic operation, see ch. 8.2)

1. Press the button "manual" repeatedly to allow the tensioner to generate the required tensioning force until the previously set operating pressure has been reached.
2. The upper and bottom lines of the remote control indicate the primary pressure and the operating pressure, respectively.



3. Tighten the fastener.
If falling below the minimum value, the pressure must be raised above the minimum value by pressing the "manual" button again repeatedly.
4. Relieve pressure from the tensioner after tightening the fastener:
 - Press the "green" button.

8.2. Operating the tensioner automatically (recommended)

8.2.1. Working with the tensioner in automatic mode

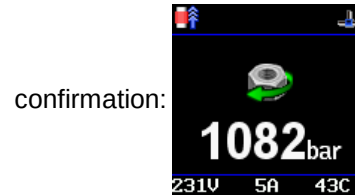
Start the power pack.

1. Press and hold the "automatic" button to perform the tensioning process.
2. You can follow the pressure build-up on the remote control display.
3. The power pack will automatically stop generating any more pressure once the preset pressure has been reached.
4. Influences such as settling losses may cause the original hydraulic pressure that was reached inside the system to drop again. To set off such pressure losses automatically, "Automatic Repump Mode" is enabled when the power pack operates in automatic tensioning mode (triple arrow).



Repumping starts automatically if the pressure drop reaches 10 bar.

5. If the set pressure has been reached with "Automatic Repump Mode" enabled, the remote control will show the following screen as



6. Tighten the fastener. To do so, you can release the button on the remote control,
7. Relieve pressure from the tensioner after tightening the fastener:
 - Press the green button.

While "Automatic Repump Mode" is enabled, you can still initiate a pressure build-up again by pressing the buttons "automatic" or "manual".

8.2.2. Disabling "Automatic Repump Mode" (not recommended)

To disable automatic repumping, press the button "manual" while keeping the "red" button depressed at the same time.



A successful switch is indicated by a changing arrow symbol:



The symbol switches to a single arrow



You use the same button combination to switch automatic repump mode back on.

8.3. Relieving the tensioner

The power pack must be switched on.

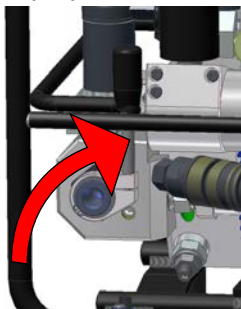
The system maintains the pressure generated by the power pack (with the exception of any pressure losses that may occur due to settling processes, etc.). Before you can remove the tensioner, you must relieve the pressure from the system:

1. Press the "green" button briefly.



2. Press the "red" button to switch off the power pack. The power pack is relieved. The motor will also switch off automatically after a certain period of time.

3. In the event of a fault (e.g. a power outage), you can also relieve the tensioner manually. Open the pressure relief valve of the pressure booster for this purpose.



8.4. Documented operation of the tensioner

The documented operation of the tensioner requires a TAX power pack and a control unit with uploaded bolting applications.

When creating your bolting applications using the PC software application "BE32.exe", make sure to create these bolting applications in "tensioner mode".

8.4.1. Connecting the control unit



1. Connect the control unit to the power pack using the "Adapter cable - power pack".



6. Connect the power pack to the mains supply. The control unit will be supplied with power for as long as it remains connected to the power pack. Its battery, however, will not be charged.

Connect the included docking station to the mains supply and use it to recharge the battery pack.



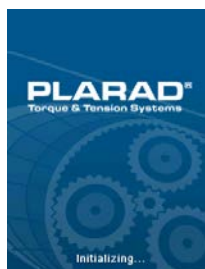
On a fully charged battery, the control unit can run for approx. 2 hours without a connection to an external power supply.

8.4.2. Putting the control unit into service

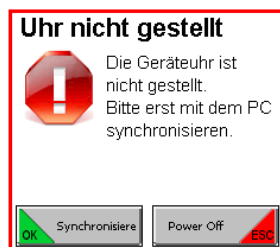
1. Press the button to turn the unit on:



The control unit initialises. The following screen will appear after a few seconds:



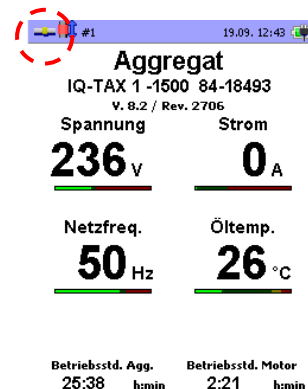
If the control unit has never been synchronised with a PC, the following message will be displayed:



2. In this case, you will have to synchronise the control unit with a PC first to set its clock (see ch. 8.7). Repeat the start-up process afterwards.
3. If this message pops up for a control unit that has already been synchronised, the battery is defective and should be replaced by

Maschinenfabrik Wagner or one of its authorised service partners.

4. Once the data link between control unit and power pack has been established, the "Power pack" menu will appear. It contains such information as the type, the serial number and the software version of the power pack that is connected to the control unit.



The top right corner of the header holds the charging status of the control unit battery.

When the control unit is connected to the docking station or the power pack, an additional connector icon will indicate this connection (supply by an external power supply).

A faulty connection between power pack and control is indicated as follows:



5. Check the connection between power pack and control unit and correct it if necessary.

8.4.3. Using the control unit to control the applications

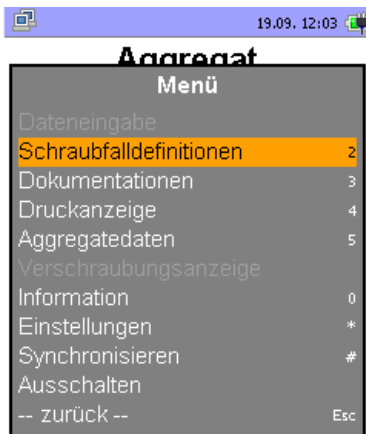
Preparation

For information on how to create and transfer bolting applications to the control unit, refer to ch. 9. The control unit will not be ready for operation unless the bolting applications have been previously transferred from the PC.

1. Press the button  on the control unit to call up the main menu of the control unit.



2. Use the buttons  /  to select the child menu "Bolting Application Definitions" and confirm your selection by pressing .

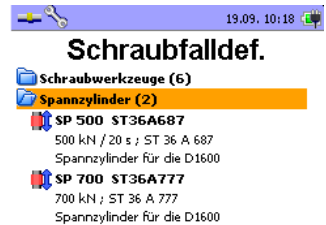


An overview with lists of available bolting applications appears.

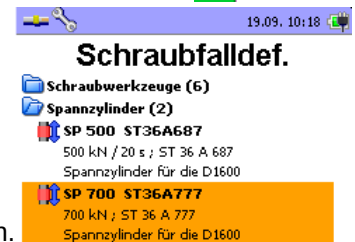
3. Use the buttons  /  to select the desired list and press  to confirm your selection.



The list you selected appears.



4. Use the buttons  /  to select the desired bolting application and press  to confirm



your selection.



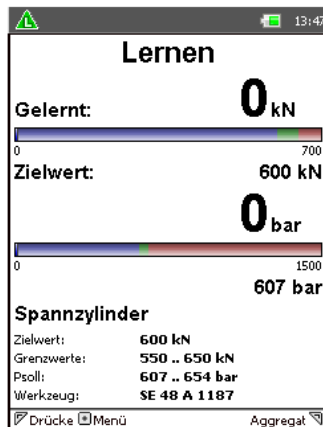
You can only select bolting applications previously created in the mode of operation intended for the power pack:

- TAX: Tensioner mode
- IQ-VAX-Dual: Tensioner and bolting tool modes

You can only select bolting applications which have previously been transferred from the PC to the control unit and stored in the lists of bolting applications.

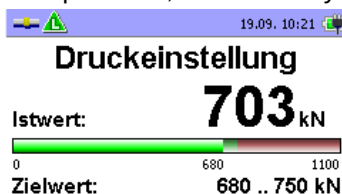
Once the bolting application has been selected, the associated parameters will be transmitted to the power pack.

- Use the pressure relief valve to adjust the operating pressure in order to set the value for the pretensioning force in kN that is displayed on the control unit
(see 7.4 "Setting the pressure").



If the control unit is used, setting the pressure will only work in "Set pressure" mode.

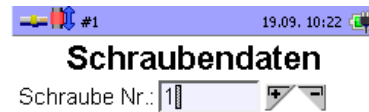
Notice: Calibration process as described under "Set pressure, automatically" (7.4.2).



SP 700 ST36A777

Zielwert: 700 kN
Grenzwerte: 680 .. 750 kN
Psoll: 1082 bar
Werkzeug: ST 36 A 777

The control unit displays the data input window:



Ok Abbruch

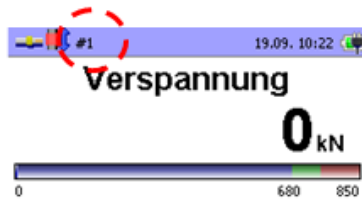
You can use the child menu "Bolt Data" to enter data about the bolting in six free text fields (e. g. operator's name, operator's ID, workpiece designation, etc.).

You can use the button  to toggle between lower and upper case letters / numbers.

Use the included PC software application to define the number and designation of the fields. The control unit does not allow you to make any changes. All you can do is enter data in the fields provided you selected a bolting application beforehand.

Press the button  to confirm your entries and have the control unit display the selected bolting application.

You will find the number of the next bolting (see mark) at the top of the display:



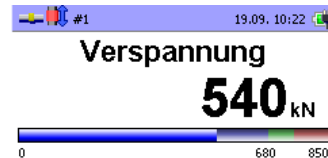
SP 700 ST36A777

Zielwert: 700 kN
 Grenzwerte: 680 .. 750 kN
 Psoll: 1082 bar
 Werkzeug: ST 36 A 777

When the tensioner has been connected to the hydraulic hose, the system is ready for the documented operation of the tensioner.

8.4.4. Tensioning process

1. Press and hold the "automatic" button on the remote control to start the documented tensioning process. The increasing value is displayed in kN on the control unit:

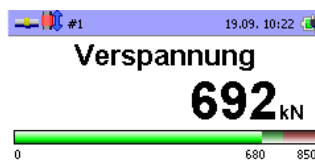


SP 700 ST36A777

Zielwert: 700 kN
 Grenzwerte: 680 .. 750 kN
 Psoll: 1082 bar
 Werkzeug: ST 36 A 777

Keep the button depressed until the indicator lights "red" and "green" are lit permanently.

The generated tensioning force is within the tolerance limit, which is indicated by the control unit as follows:



SP 700 ST36A777

Zielwert: 700 kN
 Grenzwerte: 680 .. 750 kN
 Psoll: 1082 bar
 Werkzeug: ST 36 A 777

The remote control display will show the following screen:



2. Tighten the fastener.
3. If you use the control unit, the power pack will also repump in each case if the generated pressure drops again as a result of, for instance, settling losses.
4. Relieve pressure from the tensioner after tightening the fastener: Press the "green" button.

8.4.5. Documentation of the tensioning process

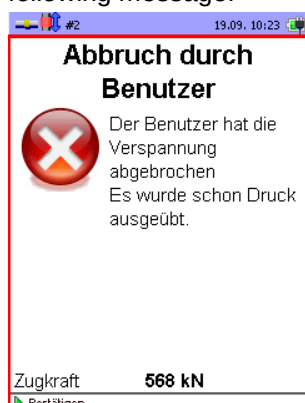
The control documents the pressure measured immediately prior to the depressurisation as a result of the bolting process. If the tensioning process was completed successfully, the control unit will display the following message:



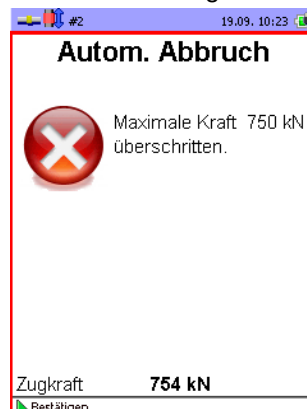
You will not have to press the  button to acknowledge the completion message if the tensioning process was completed successfully. You can proceed immediately with the next tensioning process. The number of the bolting is counted up automatically.

8.4.6. Faulty tensioning process

If you cancel the bolting process by pressing the "red" button, the control unit will display the following message:



Other error messages, which will be displayed if, for instance, the maximum permissible tensioning force was exceeded by an inadvertent adjustment of the pressure adjusting valve, will also be shown as clear text messages:



If an error message has occurred, the number of the bolting will not be counted up automatically.

8.5. Additional features of the control unit

8.5.1. User data input

1. To modify the data that was entered after the pressure adjustment (e. g. operator's name during a shift change), you can open the menu "Enter Data" manually as well. The control unit must be connected with the power pack for this purpose! The power pack must be connected to the mains supply!

Press the button  on the control unit to call up the main menu of the control unit.

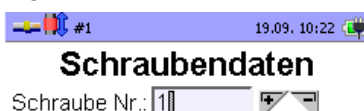


2. Use  /  to select the child menu "Enter Data" and press  to confirm your selection.



3. You can use the child menu "Enter Data" to enter data about the bolting in six free text fields (e. g. operator's name, operator's ID, workpiece designation, etc.) that complement the field "Bolt no.", which will always remain in place, or overwrite existing entries.

The illustration below shows that the user did not create another field apart from the field "Bolt no."

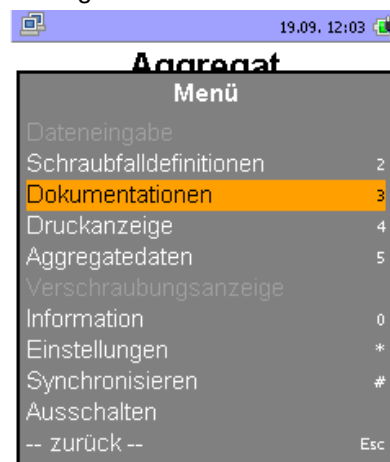


Use the included PC software application to define the number and designation of the fields. The control unit does not allow you to make any changes to the field names. All you can do is enter data in the fields provided you selected a bolting application beforehand.

8.5.2. Viewing documentation and data

The child menu "Browse Bolting Docs." provides a list of the completed bolting operations.

To open this menu, select the child menu "Browse Bolting Docs." in the main menu.



To view a documentation, browse through the child menu "Browse Bolting Docs." using the buttons  /  and select the highlighted record by pressing .

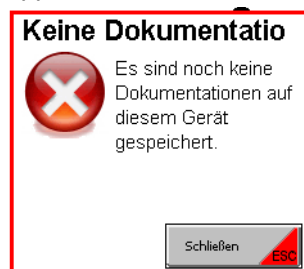


The record contains all data relating to this bolting operation including date, recorded pretensioning force, tensioner used, bolting designation, etc.



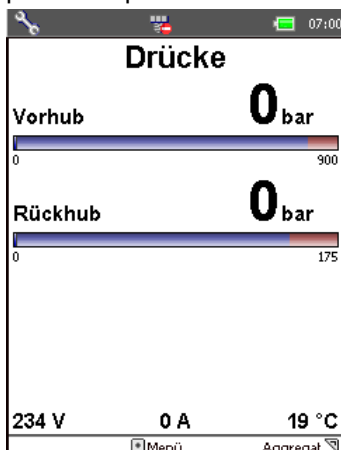
Use the buttons  /  to navigate to the next or the previous record in the detailed view.

If no data is available, the following message will appear:



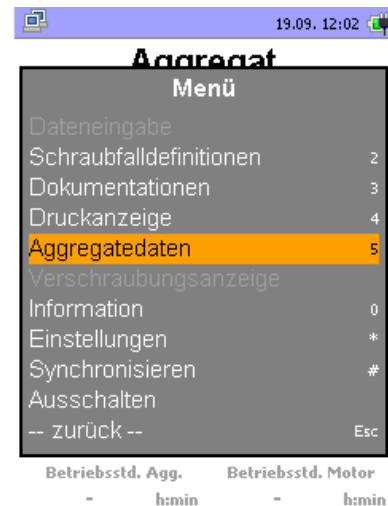
8.5.3. Pressure indicator

The child menu Pressure indicator shows you the prestroke pressure and the return stroke pressure.

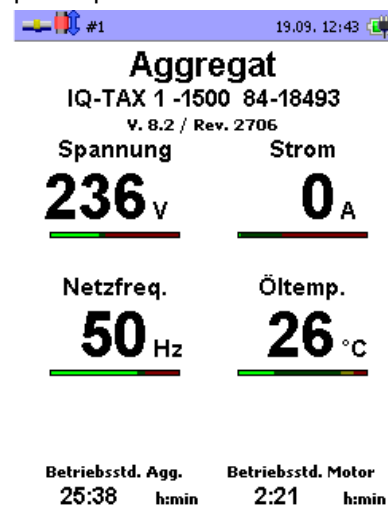


8.5.4. Viewing power pack data

The child menu "Power Pack Data View" allows you to view the data of the power pack that is connected to the control unit. To open this menu, select the child menu "Power Pack Data View" in the main menu.

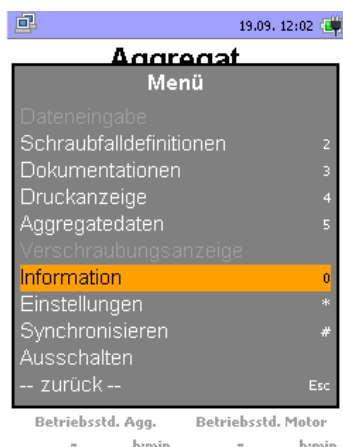


The control unit shows the current data of the power pack:



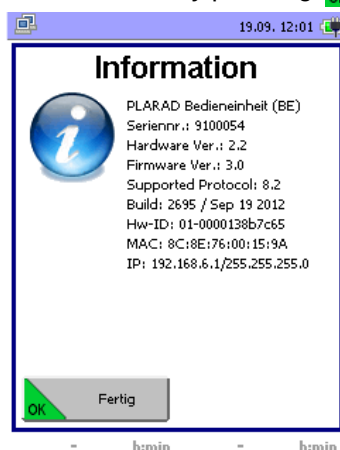
8.5.4. Viewing data about the control unit

To open this menu, select the child menu "Information" in the main menu.



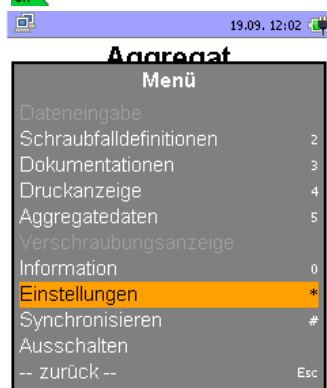
The child menu "Information" lets you view all data relating to the control unit.

Exit the menu by pressing .



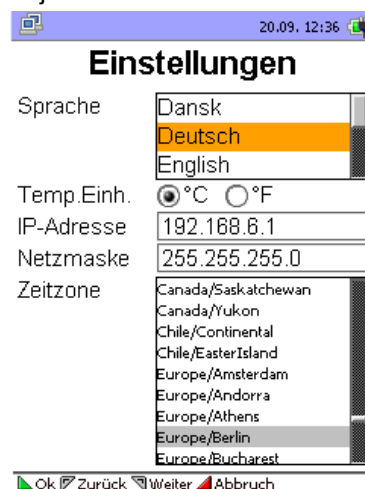
8.5.6. Modifying settings

You can open the child menu "Settings" by pressing  in the main menu.



You can alter the following settings in the child menu "Settings": Language, temperature unit (degree Centigrade / Fahrenheit), and time zone; if

using the control unit on a network, you can also adjust the IP address and the netmask.



1. Press either of the two buttons  /  on the control unit to toggle between language, temperature unit and the netmask and IP address input fields.
2. Change language and temperature unit using  and  /  and .
3. Change the IP address and the netmask using the numeric keys on the control unit:
 - Select "IP Address" / "Netmask" using  / . The status bar of the display will show the icon . The buttons on the control unit have now been switched to numeric mode.
 - Enter IP address / netmask.
4. Press  to confirm your entries.
5. Press  to cancel the process.

8.6. Powering down the control unit

To power down the control unit, select the child menu "Power Off".



8.7. Data exchange between PC and control unit

You will not be able to use the control unit with the power pack unless you have previously transferred bolting application data from the PC to the control unit.

Only the included PC software application allows you to create or modify bolting applications. This ensures that the operator will not be able to manipulate the parameters of the bolting application later on.

Connect the docking station to your PC either directly using a network cable or with the included network adapter.

Both cases require that an administrator set up a network connection. You will find the associated documentation on the CD in the folder "Docu".

You can use the docking station to connect the control unit to a PC or network.

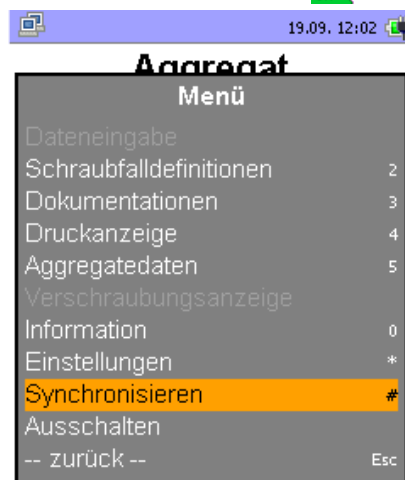
In each case, you must assign a valid IP address to the control unit or the network interface. Consult your network administrator if necessary.

8.8 Performing a data exchange

1. Insert the control unit into the docking station.
2. If the control unit is connected properly to the PC via the docking station, the icon marked in the illustration below will confirm the correct connection.

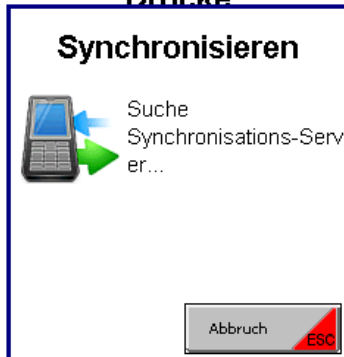


3. You can now synchronise the control unit with the PC. During this process, the bolting documentations (data of the completed bolting operations) will be transmitted to the database on the PC; at the same time, the selected bolting application definitions will be transferred from the PC to the control unit (see ch. 9.3). To start the process, select the child menu "Synchronize" and press .



The following message will appear if the control unit is not properly connected to the PC or the

synchronisation application is currently not running on the PC (see also 9. Creating / managing bolting applications):



If this happens, you need to establish the connection or launch the synchronisation application "BE32Sync.exe" on your PC.

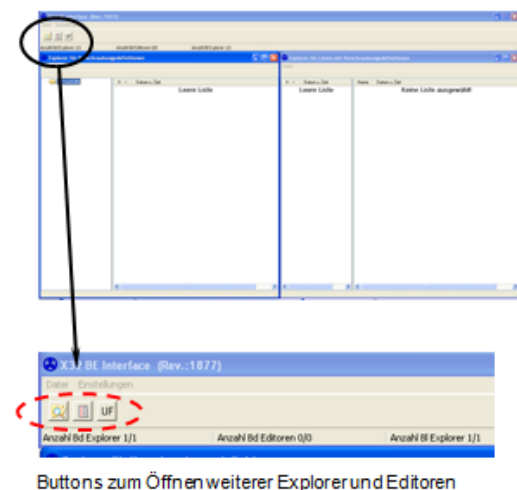
9. Creating / managing bolting applications

The TAX power pack has been designed for tensioner applications. It is, therefore, only capable of processing tensioner data. Consequently, create and manage bolting applications in "Tensioner" mode only.

The control unit ships in a case that also includes a software CD, a docking station and connecting cables.

You create and manage bolting applications by using the PC software application "BE32.exe".

1. Install software and driver on a PC as described in the user's guide.
2. Launch the application "BE32.exe" (Start/Run).
The main window "X32 BE Interface", which is comprised of the "Bolting definition browser" and the "Browser for bolting definition lists", appears:



3. If necessary, open additional bolting definition browsers, browsers for bolting definition lists or the "Editor for standard user fields". Click the corresponding icon to do so.
The status bar indicates the current number of open browsers/editors.
4. To control the browsers and editors, move the cursor into the workspace of the browser or

editor.

5. Right-click to open the "context menu".

9.1. Creating user fields

You can use the editor for standard user fields to define up to six free text user fields of your choice for your control unit. While using the unit for bolting, the operator can enter additional information into the fields that have been created with the help of this editor.

1. Open the editor for standard user fields by clicking on the icon "UF".



2. If necessary, switch to editor view by pressing the button "Edit".
3. Enter headings for the fields:



We recommend that you create a "Comments" field. This field can be used to enter notes regarding bolting events.

4. Switch to preview mode by pressing the "Preview" button and verify your entries. This allows you to check how the text you entered will be displayed on the control unit.

You can later store the template you created in a

bolting application (see 9.2).

The user fields created in the example shown here are "Bolting", "Operator", "Flange number" and "Tower number". These specifications are stored during bolting along with the bolt data.

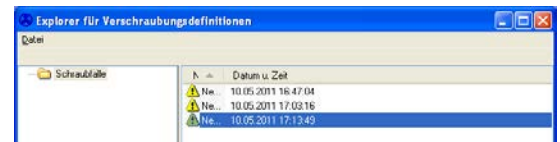
9.2. Creating/editing bolting applications

The bolting definition browser lets you create and manage bolting applications. You can also create a directory structure which allows you to store your individual bolting applications (e. g. sorted by machine types).

1. If necessary, open the bolting definition browser with a click on the "Browser with magnifier" icon:



The editor opens:



2. Right-click to open the context menu.
3. Select "Create bolting application" and enter a name.

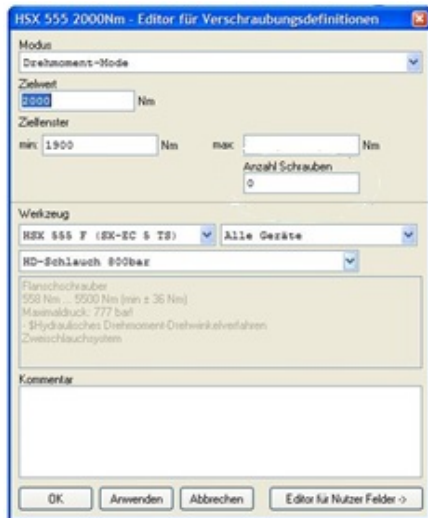
The bolting application shows up on the list. A bolting application remains invalid until all data fields have been completed correctly and in full.

In the mean time, the  icon will remain in front of the name of the bolting application.

When the bolting application has been created properly and in full, the name of the bolting application will be preceded by the associated bolting mode.

4. A double click on the bolting application (or selecting it using the context menu) will open the

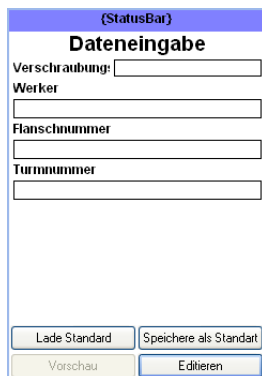
"Bolting definition editor".



Skip to the description of the "Bolt counter" function (9.3) in case the value "0" is changed to a different value.

Refer to the description below if the preset value "0" in the field "BoltQty" remains unchanged.

5. Enter the bolting application parameters in the editor window including the required pretensioning force, the tool used, etc.
7. If needed, bring up the "Editor for user fields" by clicking the associated button.
(Refer to 9.1 User fields for further information).



7. If you wish to store the user field definition as default (as a template for other bolting applications), click on the button "Save as standard".
8. If standard user field definitions have already been created, click on "Loading standard" to load the standard definition.

9.3 Function "Bolt counter" (Worker guidance and documentation)

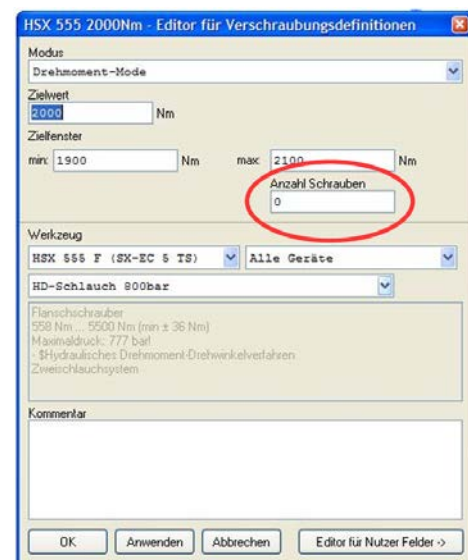
This function shows the worker a corresponding notification after successfully tightening a defined number of boltings.

This function requires control unit 32 and PC software version 4063 or greater.

Attention: The documentation records will **not** be grouped! If completing several boltings in a row, the worker will only be able to assign them to a specific product using the value entered in a "User field".

9.3.1 Procedure:

The bolting application definition was expanded by the field "**BoltQty**"



The default value assigned to this field is "0" for existing / new bolting applications.

Entering a value > 0 into this field will enable the function for that bolting application.

This functionality / these bolting applications will be available to the worker on the control unit after syncing the PC with the control unit.

When now selecting such a bolting application, the worker will be shown additional information on the display of the control unit.

The bolting application overview also lists these bolting applications in the format "(Nx)" with the "N" being substituted by the entered value.



The current count "**#X/N**" is indicated in the upper line following a successful calibration.

"**X**" indicates the current number of the bolting, while "**N**" represents the number of bolting operations that need to be completed,



If the bolting operation was finished successfully, the current number of the bolting will be increased for as long as there are boltings yet to be completed.



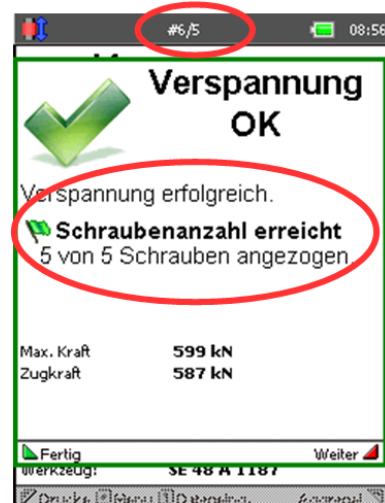
Following the completion of the last bolting application, the regular display

"Pretension OK"

"Tensioning successful"

will be complemented by the notice

**"Bolt quantity reached
X of N bolts tightened"**



As described below, such bolting applications act differently from bolting applications that do not include the information "**BoltQty**" in order to allow for the proper operation of this extension:

- When detecting a "**tightened bolt**", the system will:

- not** increase the counter
- consider this event as an error.

- The system will **always** respond to a selection of such a bolting application by setting the counter to "**1**".

If all required bolting operations are completed successively, no further action by the worker is required.

If the sequence of bolting operations is interrupted (break, power outage, operator error, etc.), the worker can manually correct the bolting operation that is currently under way.

The worker uses the menu item "**Enter Data**" for this purpose.

9.3.2 Examples:

- Example A)

If, following the successful completion of a bolting operation (e.g. "**#1/N**"), the worker forgets to position the tool head on the next (e.g. "**#2/N**") bolt, thus re-tightening the previous "**#1/N**" bolt, the system will usually detect this error and issue the error message "**tightened bolt**".

The worker merely has to confirm this error message and can continue working on the corresponding bolt (e.g. "**#2/N**").

- Example B)

If the system fails to detect "**tightened bolt**", the worker needs to proceed as described below:

A bolting (e.g. "**#3/N**") was completed improperly (wrong bolt tightened, washer missing, etc.) In this case, the system will count this bolting as bolt "**#3/N**" and save it as such in the documentation.

Proper documentation, therefore, requires that the worker, before tightening the actual **3rd** bolt, reset the counter to the value "**#3/N**".

The worker should also note the reason for this redundant tightening (in this case, of number 3) in the documentation (e.g. by entering a comment in a "Comments" user field).

- Example C)

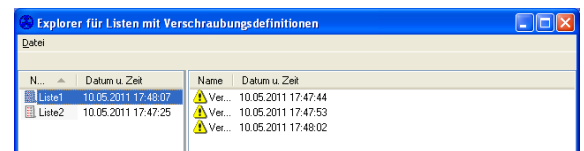
The worker interrupts and later resumes his work, e.g. following bolting "**4/N**".

Choosing the same bolting application again will reset the counter to "**1/N**". Consequently, the worker needs to correct the value accordingly before completing the next (5th) bolting (e.g. "**#5/N**").

9.4. Creating bolting definition lists

You can use the browser for bolting definition lists to compile application-specific lists that are based on the bolting applications you created.

1. Open the browser for bolting definition lists by clicking on the "List" icon.
2. Right-click to open the context menu.
3. Select "Create bolting definition list" and enter a name.
4. Drag and drop the desired bolting applications from the browser for bolting definition lists to the selected list.



The default setting provides that the existing bolting definition lists will be transferred to the connected control unit during every synchronisation. Any invalid bolting applications possibly included on these bolting definition lists will not be transferred!

9.5. Managing documentation data

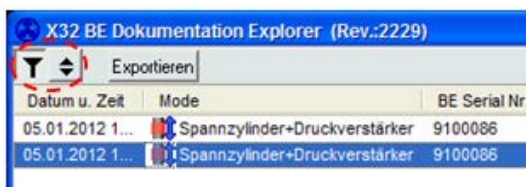
The bolting documentations stored in the control unit will be saved to the PC database every time you sync control unit and PC.

The bolting documentations will be erased from the control unit after each successful transmission.

Use the application "DrExplorer.exe" to view and manage the bolting documentations that are stored on the PC. This application displays the bolting documentations in a table and allows you to filter, sort and export them.

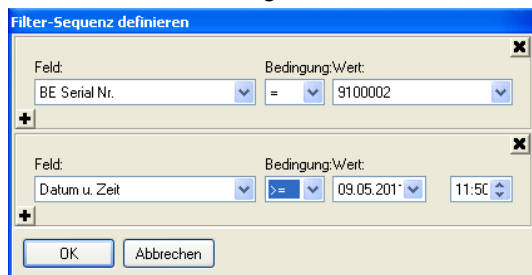
1. Launch the application "DrExplorer.exe" (Start/Run).

The application window opens:

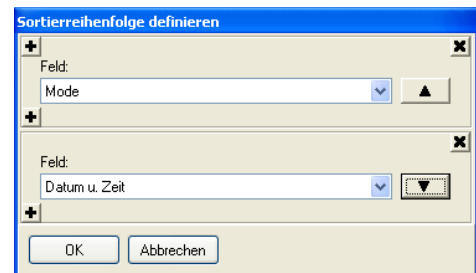


2. Click on the icons shown above to select the functions Filter or Sort.
3. Right-click to open the context menu.

The dialog box that lets you define a filter or a sort sequence opens. You can enter a maximum of five filter and sorting criteria.

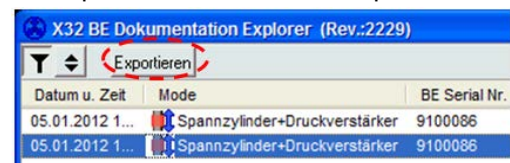


The filter in this example sorts results by the serial number of the control unit and date/time



In this example, the results are sorted first by bolting mode (descending) and then by date/time (ascending)

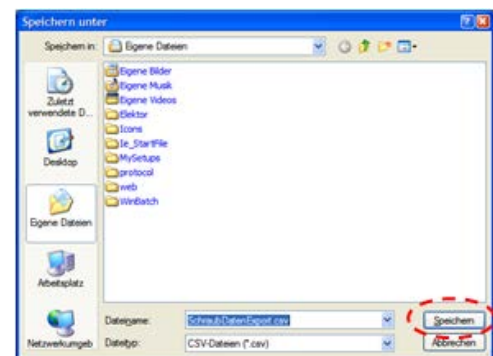
To export data, click on the Export icon:



The dialog box that follows lets you define and save the file format



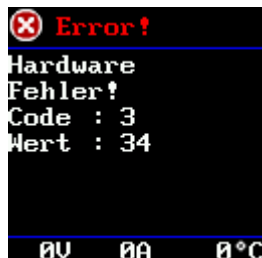
The following dialog box appears:



Use this dialog box to specify the file name and the path under which you wish to save the file and finish saving by clicking on the Save button that is marked in the illustration above. Only the data previously selected by the filter will be exported. The data is transferred in the order that you specified by applying your sorting criteria.

10. Error messages

Internal errors



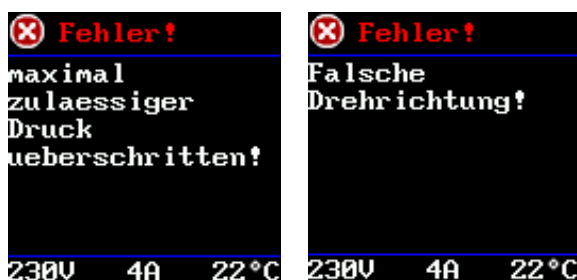
Example of an internal error message

Once connected via the power plug, the power pack will perform a self-test. The self-test starts by displaying internal error messages which will disappear once the test has been completed successfully.

While the self-test is in progress, the remote control may show error messages for a brief period of time. If these error messages are still indicated when the self-test is complete, the power pack needs to be turned in for service.

Clear text error messages

Errors that can be corrected by the user are displayed as clear text messages:



Examples of user errors

11. Remote control display

The status bar may display the following icons:



Menu



Tensioner mode without automatic repumping



Tensioner mode with automatic repumping



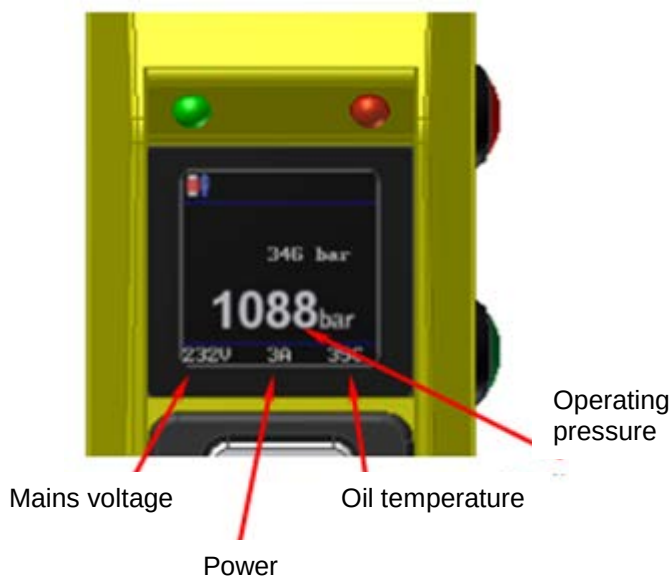
Error



Pressure adjustment mode enabled.



Connected to PC or control unit



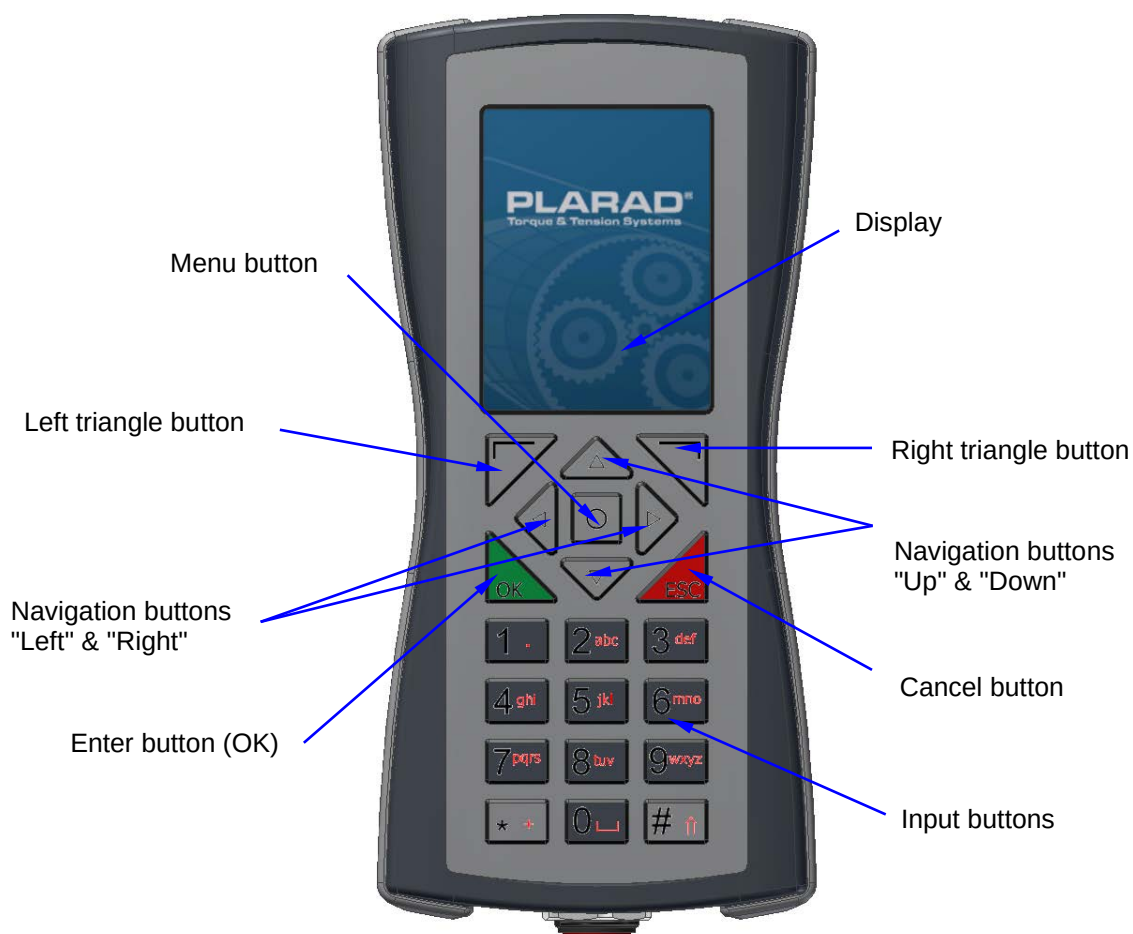
12. Indicator lights on the remote control

Indicator light
green red



Blinking frequency	Operation of IQ TAX 3,5-1500 with control unit
Green indicator light is lit permanently	Power pack is set to tensioning mode. Power pack is ready for tensioning (you may still have to set the pressure that matches the bolting application!)
Green indicator light is blinking slowly	Power pack is set to pressure adjustment mode.
Green indicator light is blinking rapidly	Rapid blinking is always an indication of an ongoing process, e. g. the power pack is starting up or pressure is being built up during the tensioning process.
Red indicator light is blinking	Tensioner is being relieved.
Red and green indicator light are blinking alternately	An error has occurred.
Red and green indicator light come on permanently at the same time	Tensioning is enabled. Target pressure was reached. Bolt can be added. The system may repump automatically during this process!
Red indicator light is lit permanently, green light is blinking	Power pack repumps automatically.

13. Membrane keyboard of the control unit



14. Display of the control unit

The connection status can be indicated by the following icons:



Control unit not connected



Control unit connected



Control unit has data link to PC

The power pack status can be indicated by the following icons *:



Tensioner mode

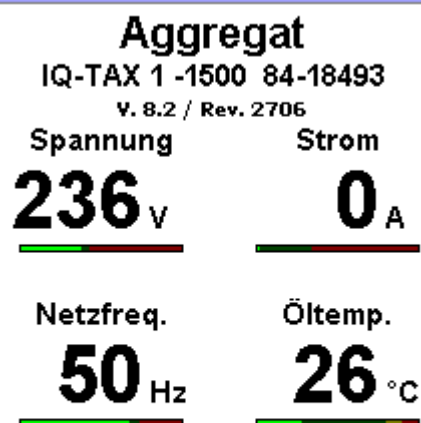


No bolting application transmitted

* If using other power packs suitable for applications involving rotating fasteners, you may be shown other status messages in this area!



Indication of the current bolting number



Battery charging status / mains supply

Betriebsstd. Agg. 25:38 h:min
 Betriebsstd. Motor 2:21 h:min

Footer

15. Maintenance instructions



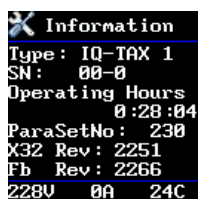
Warning!

Dangerous electrical voltage.
Unexpected start-up as a result of inadvertent actuation.

- **Pull the power plug before adjusting any settings and prior to servicing or repairs.**

Observe the following points:

- Check the oil level of the power pack on a regular basis, but at least every time before you start working.
- Change the hydraulic oil every 150 hours of operation, but no later than every 12 months. You can find the operating hours in the "Information" menu on the remote control.



Information
Type: IQ-TAX 1
SN: 00-0
Operating Hours
0:28:04
ParaSetNo: 230
X32 Rev: 2251
Fb Rev: 2266
228V 0A 24C

- Keep the couplings and the nipples on the power pack, on the hydraulic hoses and on the tensioner clean. Use a cloth to clean the couplings and nipples before connecting them.
- Seal the couplings and nipples with sealing caps prior to transport and storage.

16. 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.**



... a successful
connection!

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