

EXAMO 700-LP EXAMO 705-LP

Operating Instructions



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Congratulations on the purchase of your EXAMO 700-LP / EXAMO 705-LP.

You have chosen a first-class tester.

The device was designed and manufactured in accordance with the current state of the art in the electrical appliance manufacturing industry. It has also been manufactured using high-quality materials.



Please read the operating instructions before putting the device into service.

EXAMO 700-LP, EXAMO 705-LP

Testing Device



For more information about the EXAMO 700-LP / 705-LP, visit leister.com

1. Application

1.1 Intended use

The EXAMO 700-LP / EXAMO 705-LP tensile testing machine is designed for professional use and is used for destructive testing of welds and materials. It was developed specifically for mobile use on construction sites and can also be used under standard operating conditions in production facilities.

Test Methods and Materials

- Peel testing, shear testing, and general tensile testing of materials with grip widths of 15, 20, 25, and 50 mm.
- Testing of plastic membranes made of PE-HD, PE-LD, PVC, TPO, FPO, and EPDM with a thickness of 0.8–3.5 mm. Additional materials upon request.

1.2 Non-intended use

Any other use or any use beyond the type of use described is deemed non-intended use.

1.3 General safety information

Please observe the safety instructions provided in the individual chapters of these operating instructions as well as the following safety instructions.

Danger



Dangers associated with the improper use of lithium-ion batteries

This device is designed to be powered by lithium-ion batteries. Follow the relevant safety precautions and warnings provided by the battery manufacturer when handling these batteries.



Danger associated with the use of batteries that are not intended for this purpose or are damaged

- Use only genuine, undamaged batteries (AMPSHare Alliance or Bosch Professional 18 V line).



Electric shock is life-threatening – Protect yourself from electric shock.

- Connect the device only to outlets and extension cords equipped with a ground wire.
- Protect the device from dirt, moisture, and water.
- An RCD is essential when using this device to protect personnel working in the area.
- Before putting the device into service, check the device plug, the power cord, the extension cord, and the battery for any electrical or mechanical damage.
- The device must only be opened by trained personnel, as opening it exposes live parts.
- The detachable power cord must only be replaced with a cord of sufficient length that complies with local regulations and standards.



Fire and explosion hazard – Be aware of the danger if used improperly

- Do not use the device near flammable materials and/or explosive gases.



Risk of pinching – Be aware of the danger posed by moving parts

- Never reach into the machine while it is running.



Risk of tripping if the power cord is placed carelessly

- Make sure that the **power cord (17)** is not in the way and does not obstruct users or others while they are working.



Life-threatening danger from improperly repaired appliances

- Have **repairs** performed only by an authorized service center.
- Use only **genuine accessories** and **replacement parts**.

Caution



- Please note that the device may only be operated by **trained personnel** or under their supervision.
- Children are not permitted to use this.



- Use the battery to power the device.



- In the event of a power outage, turn off the device at the main switch and unplug the power cord from the device.



- Never touch the contacts on the **battery mount (10)**, as this could cause an electrical discharge that might damage the device.



- Please note that the **rated voltage** specified on the device must match the local **mains voltage**.

On-site generators for power supply

When using generators for power supply, please ensure that the generators are grounded and equipped with a ground-fault circuit interrupter (GFCI).



Use with portable power generators

The following formula applies to the rated power of portable generators:
Power generator rating = at least $2 \times$ power rating of all devices used.

If you are using a mobile power generator, it should have a total distortion fraction of the sine waveform (THD=Total Harmonic Distortion) of less than 6 %. This information can be found in the technical data or can be obtained from the supplier. When using mobile power generators with a THD value greater than 6 %, damage to electronic components may occur. Leister therefore recommends using portable power generators with inverter technology.

The EXAMO tensile testing machine may only be turned on and off while the generator is running; otherwise, the electronic components may be damaged.

2. Technical data

		EXAMO 700-LP	EXAMO 705-LP
Voltage	V AC / V DC	100-240 ≈ / 18 ≈	100-240 ≈ / 18 ≈
Frequency	Hz	50/60	
Power	W	70	130
Permissible ambient temperature during mains operation	°C °F	-5 ... +60 +23 ... +140	
Permissible ambient temperature for battery operation	°C °F	-5 ... +50 +23 ... +122	
Recommended ambient temperature during charging	°C °F	0 ... +35 +32 ... +95	
Recommended Li-ion battery capacity	Ah	4, 8	
Battery voltage	V DC	18 ≈	
Compatibility			
Compatible batteries		EXBA 18 V... / GBA 18 V... / ProCORE 18 V...	
Compatible chargers		GAL 18... / GAX 18... / GAL 36... / EXAL 18...	
Force measurement range:			
Speeds ≤ 150 mm/min	N / lbs	40 ... 2500 / 9...562	
Speeds > 150 mm/min	N / lbs	40 ... 1500 / 9...337	
Measurement Accuracy		±2.5 % FS at 24°C	
Test speed	mm/min in/min	50, 100, 150, 200, 250, 300, 350, 400, 450, 500 2, 4, 6, 8, 10, 12, 14, 16, 18, 20	
Test length	mm in	600 23.6	300 11.8
Number of measurement axes		1	2
Max. Test specimen thickness (coupon)	mm in	3.5 0.14	
Specimen Widths (Coupon)	mm in	15, 20, 25, 50 (100) 0.6, 0.8, 1, 2 (4)	15, 20, 25, 50 15, 20, 25, 50
Noise level	dB (A)	78 (K = 3)	
LQS		Yes	
Wi-Fi radio properties			
RF frequency range	GHz	2.400-2.4835	
Transmission power 802.11 g	dBm	15 ± 1	
Length	mm in	1063 45.9	763 30
Width	mm in	296 11.7	296 11.7
Height	mm in	253 10	267 10.5
Weight	kg lbs	20.8 45.9	27.4 60.4
Approvals, protection class		 	
Country of origin		Switzerland	

We reserve the right to make technical changes.

3. Transport

Risk of excessive physical strain when carrying and lifting the device



- The weight of your EXAMO 700-LP, including the carrying case, is 35.6 kg (20.8 kg without the carrying case), and the weight of your EXAMO 705-LP, including the carrying case, is 40.1 kg (27.4 kg without the carrying case).
- To transport the tensile testing machine, use the carrying case included with the unit and carry the carrying case by the handle provided.
- Comply with applicable national regulations regarding the carrying or lifting of loads.



- **Two persons** are required to transport the machine with the transport box.



- Do not use the **carrying handles (4)** on the unit or the transport box to lift the unit with a crane, as this could cause the unit to fall.



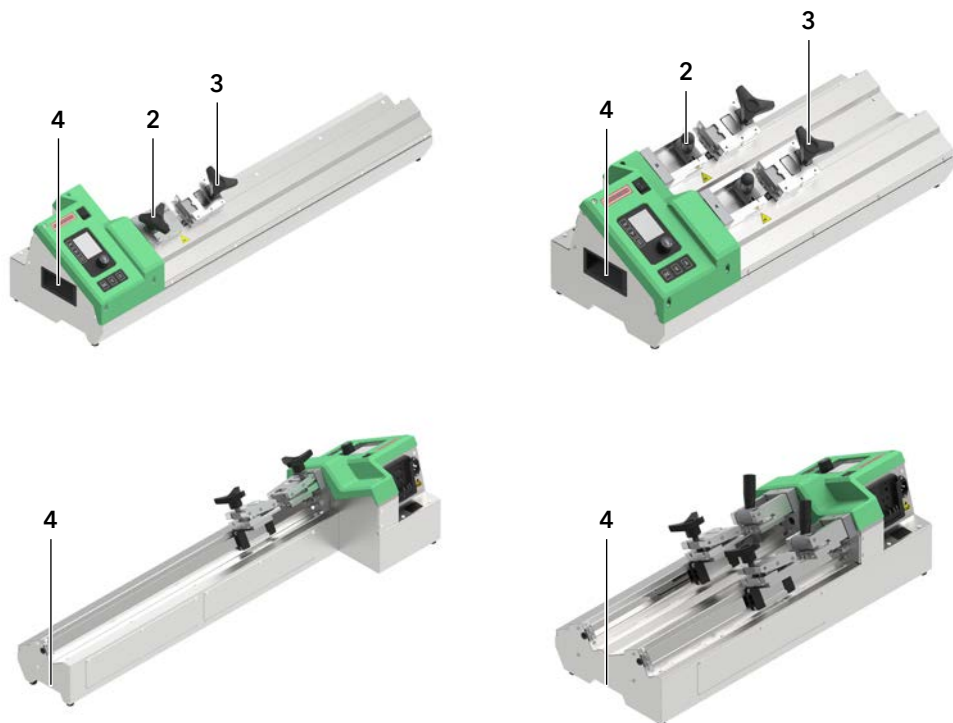
- Never lift the tensile testing machine by the **star handles (3)** or **cylinder handles (2)**, as this could cause the machine to fall.



- During transport, the device must be stored and secured in such a way that no mechanical damage can occur. The device should be transported in a horizontal position.

If the **battery (18)** must be transported, the following points must be observed:

- The **battery (18)** must be disconnected from the device for transport.
- The recommended Li-ion batteries are subject to the regulations of the Dangerous Goods Act. They may be transported by the user on the road without additional restrictions.
- Special packaging and labeling requirements must be observed when shipping by third parties (e.g. by air transport or freight forwarder). A dangerous goods expert must be consulted when preparing the shipment.
- Ship batteries only if the case is undamaged. Carefully tape open contacts and pack the **battery (18)** so that it cannot move inside the package. In addition, observe applicable national regulations for the shipment of Li-ion batteries.



To lift the tensile testing machine by hand, use the **carrying handles (4)**.

4. Power supply

The device can be powered **either by a power cord (100-240 V / 50-60 Hz) or by Li-ion batteries from the AMPShare Alliance** or the Bosch Professional 18V line. Use only original and undamaged batteries.

For optimal performance, we recommend using **4 or 8 Ah ProCORE battery packs**

(Note: Battery packs with lower capacity or older cell technology may result in reduced performance or shorter run-time.)

Also observe the instructions in the  Transport section [3].

4.1 Charging the battery

Only use the chargers listed in the technical data.

Only these chargers are matched to the Li-ion battery used in your device.

Note during initial commissioning: Li-ion batteries are shipped partially charged according to international transport regulations. To ensure full **battery power(18)**, fully charge the **battery(18)** before first use.

4.2 Inserting the battery

Do not use force when inserting the battery.

The **battery(18)** is designed to be inserted into the unit only in the correct position.

Slide the charged **battery(18)** into the battery holder until it clicks into place.

4.3 Removing the battery

The **battery(18)** has two locking stages that prevent the **battery(18)** from falling out when the release button is pressed unintentionally. To remove the **battery(18)**, press the battery release button and pull out the **battery(18)**. **Do not apply any force.**

4.4 Battery charge level indicator

The green LEDs on the battery charge indicator indicate the current charge level of the **battery(18)**. If the battery is inserted in the device, the display can only be used when the device is switched off.

Press the State of Charge button  or  to view the state of charge. If no LED lights up after pressing the charge level indicator button, the **battery(18)** is defective and must be replaced.

Battery type ProCORE 18V...



LED	Capacity
Continuous light 5 × green	80-100 %
Continuous light 4 × green	60-80 %
Continuous light 3 × green	40-60 %
Continuous light 2 × green	20-40 %
Continuous light 1 × green	5-20 %
Flashing light 1 x green	0-5 %

Battery type ProCORE 18V...



LED	Capacity
Continuous light 3 × green	60-100 %
Continuous light 2 × green	30-60 %
Continuous light 1 × green	5-30 %
Flashing light 1 x green	0-5 %

4.5 Instructions for optimal handling of the battery

Protect the **battery(18)** from moisture and water. Store the **battery(18)** only within the temperature range of -20 °C to +50 °C. (Example: Do not leave the **battery(18)** in the car during the summer.)



If the temperature gets too high, the built-in thermal protection circuit shuts down the battery. The battery should be protected from sunlight and heat.

A significantly shortened operating time after charging indicates that the **battery(18)** is depleted and needs to be replaced. Observe the  disposal instructions [21].

5. Your EXAMO 700-LP / EXAMO 705-LP

5.1 Type plate and identification

The model and serial number are indicated on your device's **type plate (12)**. Please include this information in your operating instructions, and always refer to it when contacting our local subsidiary or your authorized Leister sales and service partner with any questions.

Model:
Serial no.:

Examples:

EXAMO 700-LP Type plate



EXAMO 705-LP Type plate

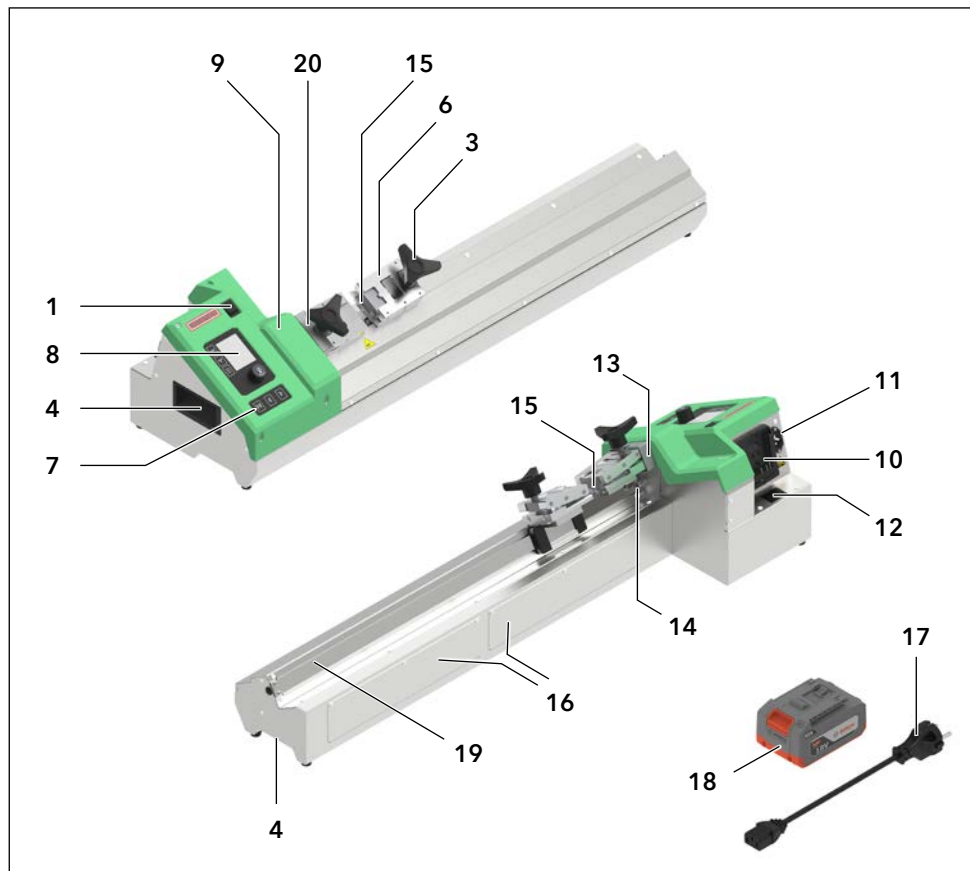


5.2 What's Included (Standard Equipment in the Case)

- Model EXAMO 700-LP / EXAMO 705-LP, without battery, without charger, without power cord
- 1 EXAMO 700-LP / EXAMO 705-LP unit
 - 1 Safety Instructions
 - 1 Quick Guide
 - 1 Test Certificate

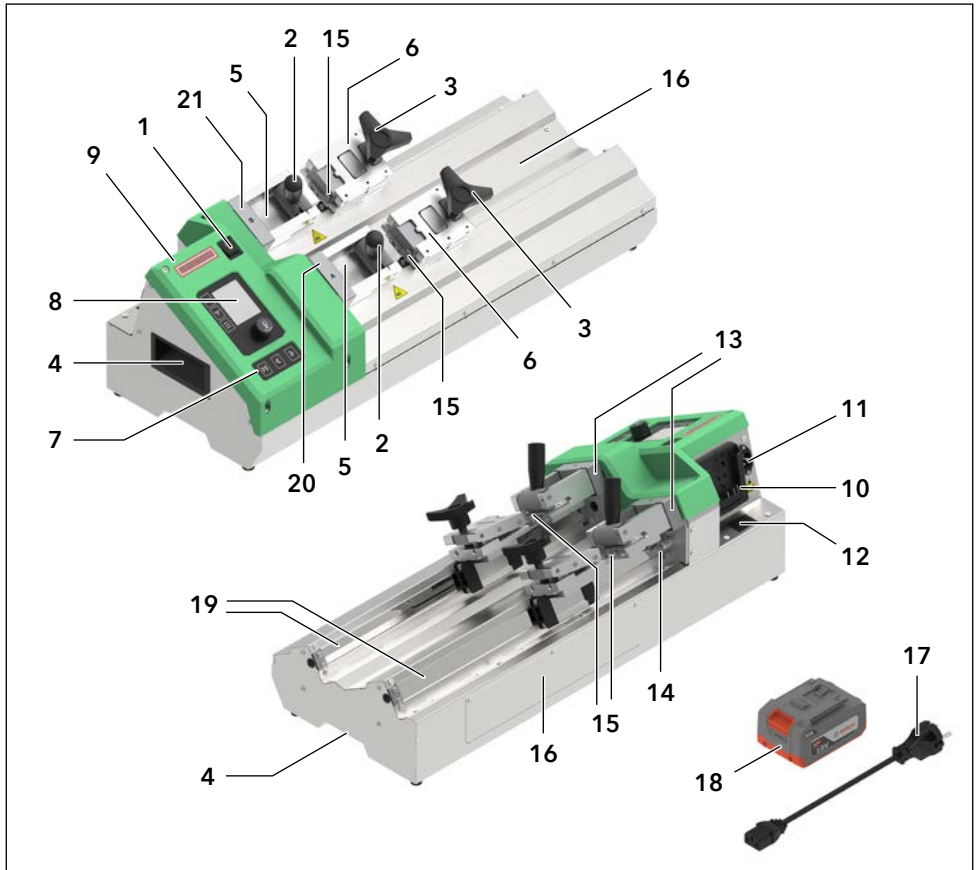
5.3 Overview of device parts

5.3.1 EXAMO 700-LP



- | | |
|---|-----------------------------------|
| 1. Main switch (On/Off switch) | 11. Power outlet |
| 2. Cylinder handle (eccentric clamp / optional) | 12. Type plate |
| 3. Star handle (rocker clamp / optional) | 13. Safety guard |
| 4. Carrying handle | 14. Temperature sensor |
| 5. Spring-loaded eccentric clamp (optional) | 15. Coupon Width Adjustment Plate |
| 6. Rocker clamp (optional) | 16. Service Cover Plate |
| 7. Key panel | 17. Power cord (not included) |
| 8. Control panel | 18. Battery (not included) |
| 9. Electronics enclosure | 19. Spindle cover |
| 10. Battery mount | 20. Measurement axis |

5.3.2 EXAMO 705-LP



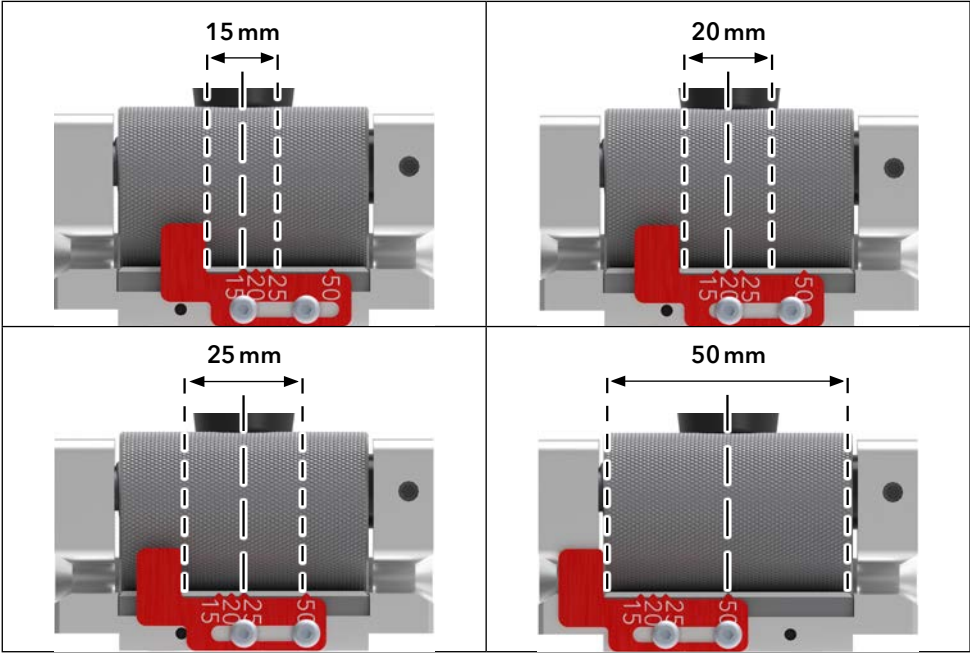
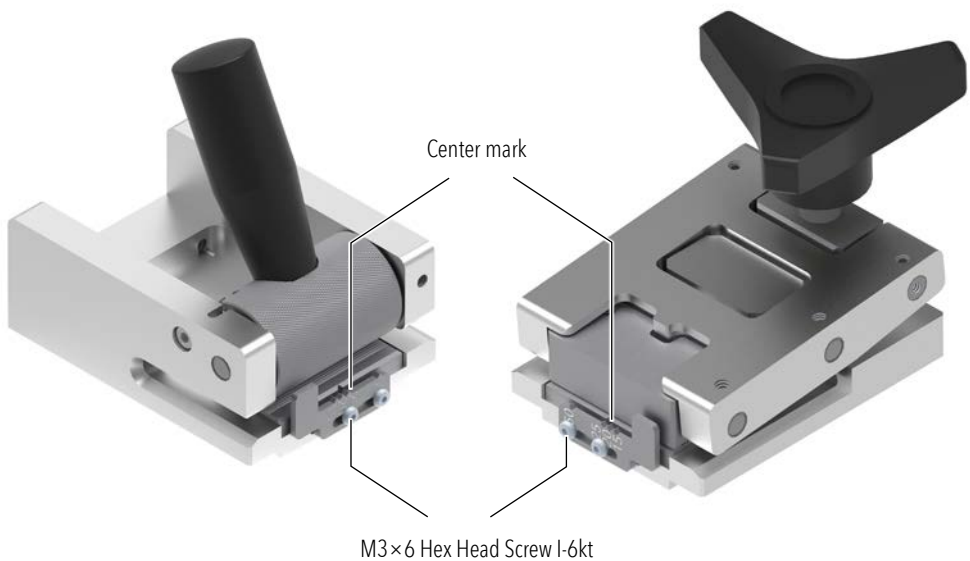
- | | |
|---|---|
| 1. Main switch (On/Off switch) | 12. Type plate |
| 2. Cylinder handle (eccentric clamp / optional) | 13. Safety guard for measurement axes A and B |
| 3. Star handle (rocker clamp / optional) | 14. Temperature sensor |
| 4. Carrying handle | 15. Coupon width adjustment plate |
| 5. Spring-loaded eccentric clamp (optional) | 16. Service cover plate |
| 6. Rocker clamp (optional) | 17. Power cord (not included) |
| 7. Key panel | 18. Battery (not included) |
| 8. Control panel | 19. Spindle cover |
| 9. Electronics enclosure | 20. Measurement axis A |
| 10. Battery mount | 21. Measurement axis B |
| 11. Power outlet | |

6. Settings on the EXAMO 700-LP / EXAMO 705-LP

6.1 Coupon Width Setting

Eccentric clamp (5)

Rocker Clamp (6)



7. Operation of the EXAMO 700-LP / EXAMO 705-LP

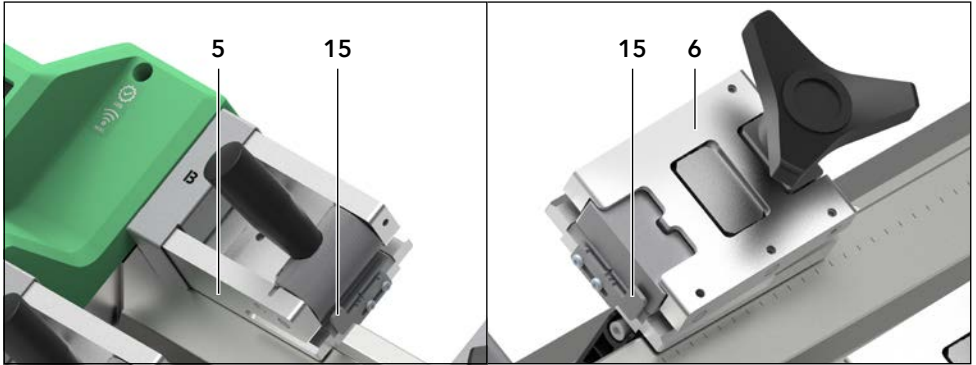
7.1 Operating readiness

Open the case



We recommend keeping the device in its case while in use and positioning the case horizontally to ensure safe operation and to protect the device from damage and external contaminants.

Adjust the **coupon width adjustment plate (15)** to the width of the test specimen (coupon) being tested. Adjust the **eccentric clamp (5)** (if present) and the **rocker clamp (6)**.

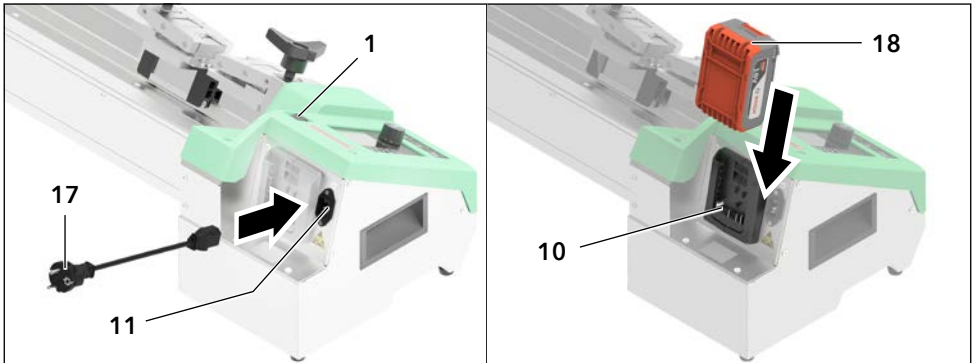


7.2 Starting the device

Once you have configured the settings as described in the instructions, connect the **power cord (17)** to the **power outlet (11)** and plug it into a power source, or insert the **battery (18)** into the **battery mount (10)**.



If the device is connected to both the AC power source and the **battery (18)** at the same time, the AC power source is treated as the primary power source.



- Turn on the tensile testing machine using the **main switch (1)**.

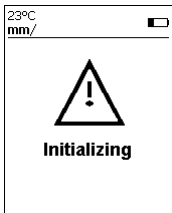


After startup, the **display (44)** briefly shows the startup screen with the version number of the current software release and the device name.

- Initialize the tensile testing machine by pressing the *start/stop* button (30) on the **key panel (7)**.



After pressing the *start/stop* button (30), the **rocker clamp (6)** moves automatically.

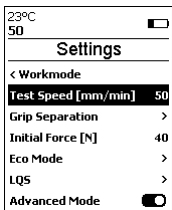


The process is complete when the information window closes.



The process can be interrupted at any time by pressing the *start/stop* button (30) again.

- Set the required test speed in the machine setup. To do this, press the *Menu* button (42) on the **control panel (8)**



The most recently set test parameters, such as the test speed, remain in effect after the tester is turned off.



The permissible tensile force is 2500 N at a test speed of up to 150 mm/min and 1500 N at speeds above 150 mm/min. If these values are exceeded, the test process is stopped and a warning message appears. In this case, the device can only be retracted using the *Move back* button (31).

- Now, press the appropriate button on the **control panel (8)** to select the type of test you wish to perform (*shear test button (40)*, *peel test button (41)*). During a general material tensile test, both buttons (40, 41) are inactive.



Shear Test (40)



Peeling Test (41)

After pressing the corresponding button, the **rocker clamp (6)** moves to the grip separation distance predefined in the machine setup for the corresponding type of test. The selected button lights up green.



To ensure that the elongation is calculated correctly in percent, the weld width of the test specimen (coupon) must be entered in the machine settings (see  Device Settings [11.10]).

Test Type	Weld Bead Width
Shear Test	According to the device settings  11.10]
Peeling Test	0 mm
Material Tensile Test	0 mm



During a general tensile test, none of the buttons are active (the *shear test button (40)* and *peel test button (41)* light up white). The current position of the **rocker clamp (6)** is used as the starting point.

7.3 Test Procedure

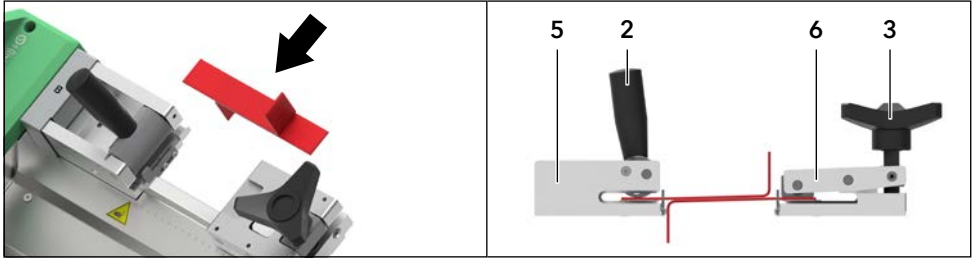
Prepare the test specimen (coupon)

- The test specimen (coupon) must be prepared so that it has no rough edges or damage. Ideally, the test specimen (coupon) is punched using the Leister COUPON CUTTER 500.

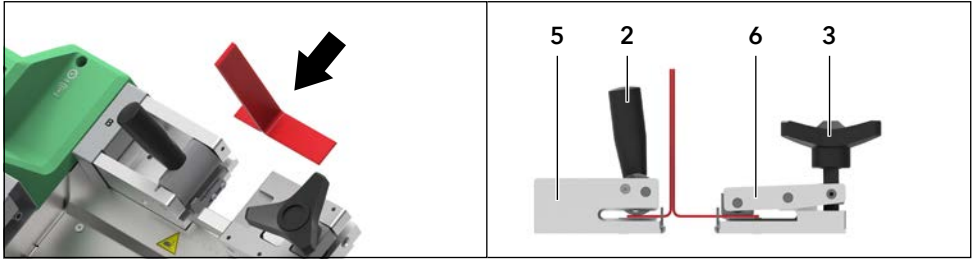
Clamp the test specimen (coupon)

- Open the **rocker clamp (6)** by turning the **star handle (3)**.
- If an eccentric clamp is installed: Open the **cylinder handle (2)** of the **eccentric clamp (5)** and hold it in place.
- Insert the test specimen (coupon) from the top into the two clamps until it comes to rest against the **coupon width adjustment plate (15)**.

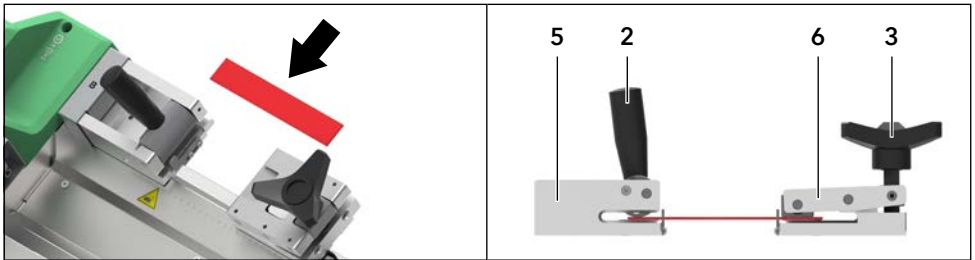
Shear Test



Peeling Test



Material Tensile Test



- Release the **cylinder handle (2)** of the **eccentric clamp (5)**, if installed, and turn the **star handle (3)** of the **rock-er clamp (6)** in the opposite direction until sufficient clamping pressure is applied to the test specimen (coupon).



The **rocker clamp (6)** must not be retracted while a test specimen is clamped in place or while any remnants of a test specimen remain. Otherwise, as they move back, they may push in the spring-loaded **eccentric clamp (5)** and activate a limit switch, which will interrupt the travel process. If a limit switch is triggered, the device issues a warning message. When a warning message is active, the **rocker clamp (6)** can only be moved forward using the *Move Forward* button (32).

Start the test

- Press the *start/stop* button (30).
- The **rocker clamp (6)** moves at the set test speed (Test Speed).
- Once the initial force—which can be set during machine setup—is reached, the current measured values are displayed.
- The test parameters cannot be changed during the test.
- The **rocker clamp (6)** moves until the test specimen (coupon) breaks or until the maximum travel is reached.



As soon as the end of the travel range is reached, a corresponding message appears on the **display (44)**.



The test process can be interrupted by pressing the *start/stop* button (30).



If no test specimen (coupon) is clamped in place at the start of the test, or if the set value for the initial force is not reached, the corresponding measurement axis will terminate the test after a travel distance of 30 mm.

End the test

- Read the test values displayed.
- Remove the remains of the test specimen (coupon) by opening the **eccentric clamp (5)** with the **cylinder handle (2)** and the **rocker clamp (6)** with **the star handle (3)**.
- Press the *Move Back* button (31). The **rocker clamp (6)** automatically returns to the active grip separation position for the peel or shear test.



The measured test values are retained and displayed until the *Start/Stop* button (30) is pressed again.

7.4 Readiness for Transport

- Remove any remaining test specimens (coupons), if present.
- Move the **rocker clamp (6)** manually to the starting position (0-point) or automatically to the currently active grip separation (40/41).
- Turn off the tensile testing machine at **the main switch (1)**.
- Unplug the **power cord (17)** from the **power outlet (11)** and/or remove the **battery (18)** from the **battery mount (10)**, and place the power cord and battery in the carrying case.
- Close the case.

8. Quick Start Guide for the EXAMO 700-LP / EXAMO 705-LP



Observe the safety instructions and warnings in the individual sections of these operating instructions.

8.1 Switching on/Starting

1. Make sure that the **main switch (1)** is switched off. Connect the **power cord (17)** to the **power outlet (11)** and to the power source, and/or insert the **battery (18)** into the **battery mount (10)**.
2. Switch the **main switch (1)** on.
3. Press the **start/stop button (30)** to calibrate the tester.
4. If necessary, activate the desired test type by pressing the *Shear Test (40)* or *Peel Test (41)* button.
5. Clamp the test specimen (coupon) into the **eccentric clamp (5)**, if available, or **the rocker clamp (6)**.
6. Press the **start/stop button (30)** to begin the test.
7. After the test is complete, open the **eccentric clamp (5)** using the **cylinder handle (2)** and the **rocker clamp (6)** using the **star handle (3)**, and remove the remains of the test specimen (coupon).

8.2 Switching off

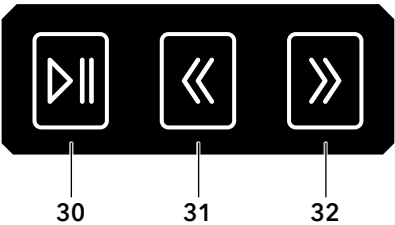
1. Press the **Move back button (31)** to retract the **rocker clamp (6)** to the active grip separation position.
2. Turn off the **main switch (1)**.
3. Unplug the **power cord (17)** from the power outlet and remove it from the **power outlet (11)**, and/or remove the **battery (18)** from the **battery mount (10)**.



9. EXAMO 700-LP / EXAMO 705-LP Key Panel

The **key panel (7)** consists of function keys that allow you to perform the device's various movement functions.

9.1 Function Keys on the key panel



- 30. *Start/Stop Test* button
- 31. *Move Back* button
- 32. *Move Forward* button

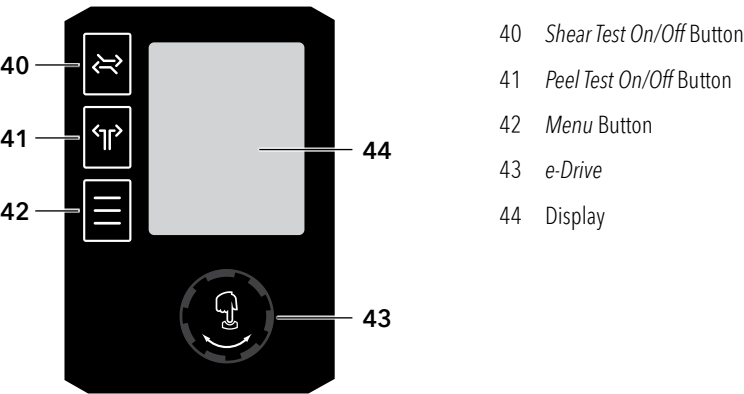
Multiple Assignments for Function Keys on the key panel (7)

Symbol	Name	Function
	<i>Start/Stop Test</i> button (30)	▪ Initialization (when the device restarts) ▪ Start of the test ▪ Suspension of the examination ▪ Stop during test operation ▪ Automatic stop after the test specimen (coupon) breaks
	<i>Move back</i> button (31)	▪ Move Back ▪ Stop during test operation ▪ Automatic stop when grip separation is active or at the 0-point
	<i>Move forward</i> button (32)	▪ Move Forward ▪ Stopping While Moving Forward ▪ Automatic stop when grip separation is active or when the maximum travel is reached

10. EXAMO 700-LP / EXAMO 705-LP Control Unit

The **control panel (8)** consists of the **function keys**, which you use to navigate the various menu functions, and the **display (44)**, which shows the currently selected setting, menu options, or the values currently in effect.

10.1 Function Keys on the Control Panel



Multiple allocation of function buttons control panel (8)

Symbol	Name	on the display (44)	In the menu, after pressing the button (42)
	Shear Test On/Off Button (40)	Grip-separation set up for shear testing Long press (> 2 s): Overwrite the stored grip separation with the current position of the rocker clamp	Selection of the line when editing text
	Peel Test On/Off Button (41)	Grip-separation set up for peel testing Long press (> 2 s): Overwrite the stored grip separation with the current position of the rocker clamp	Selection of the line when editing text
	Menu button (42)	Switch to menu	return to the working display
	Press e-Drive (43)	Selected value is adopted, selection goes straight back to the function display	Selects the marked position
	Rotate e-Drive (43)	Setting the Desired Setpoint	Changes the position within the setup menu and sets the value of the selected position

10.2 Status LED Light on the Button

When the device is turned on, all buttons on the **key panel (7)** and the **control panel (8)** light up white.

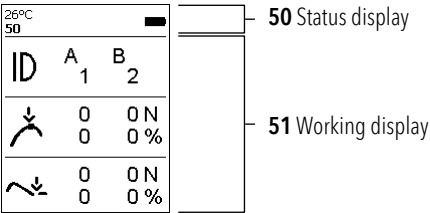
LED status	Condition
LED is constantly white	All buttons → Device turned on
LED continuously green	<i>Shear Test</i> button (40) → Grip Separation Shear Test is active <i>Peel Test</i> button (41) → Grip-Separation Peel Test is active



The white LED lighting can be turned off in the machine settings, while the green LED lighting remains on at all times.

10.3 Display

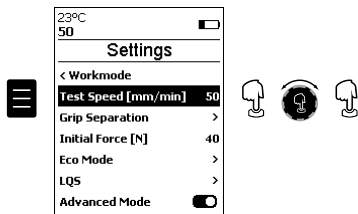
The **display (44)** is subdivided into two display areas:



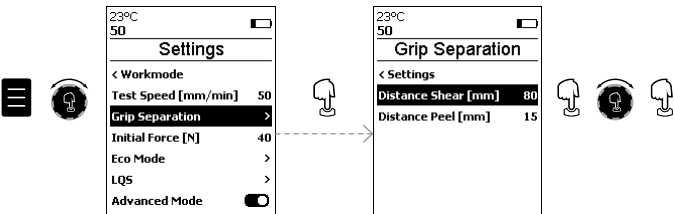
10.4 Setting the Test Parameters

To adjust a test parameter before the test, follow these steps:

Example: Setting the Test Speed

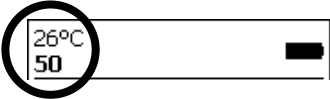
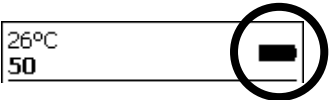


Example: Adjusting the Distance Between the Clamps (Grip Separation Shear Test or Peel Test)



10.5 Display symbols for the status display(50)

The Status display is subdivided into a left-hand (1) and a right-hand area (2).

Status display 1 / Left	
Ambient temperature 26 °C	Display of the current ambient temperature
Test speed: 50 mm/min	Displays the currently set test speed (Test Speed). The value and units are displayed alternately.
Status display 2 / Right	
Battery Charge Level 	Display of the battery's current charge level
Display is empty	If the display is blank, the device is connected to the mains power supply.



Warning present



Data recording



WLAN



Undervoltage in
Battery Mode



Eco-Mode



The temperature sensor should be protected from direct sunlight.
Due to measurement limitations, the temperature reading is provided for reference only.

10.6 Display symbols of the working display (51)

EXAMO 700-LP

26°C 50	
ID	1
	0 N 0 %
	0 N 0 %

20

Measurement
axis

EXAMO 705-LP

26°C 50		
ID	A 1	B 2
	0 0	0 N 0 %
	0 0	0 N 0 %

20

Measurement
Axis A

21

Measurement Axis B

During the test, the current measurement values for the corresponding measurement axis are displayed in real time. If LQS (see  LQS Data Recording [11.6]) is enabled, each test for each measurement axis is also assigned a sequential number.

A

Display of the values for **the measurement axis (A) (20)**

B

Display of the values for **measurement axis B (21)**

ID

Symbol: **Identification Number** – An automatically generated sequential number for the test **when LQS is enabled**. Each measurement axis is assigned its own number.



Symbol: **Maximum Tensile Force**
Maximum Tensile Force [N] [lbs]
Elongation at Maximum Tensile Force [%]



Symbol: **Breaking Strength**
Force [N] [lbs]
Elongation at breaking force [%]



Symbol: **Hardware Error Message**
The device is no longer ready for operation. Please contact your authorized Leister sales and service partner. (Note the respective error code in Section Warning and Error Messages [13]).



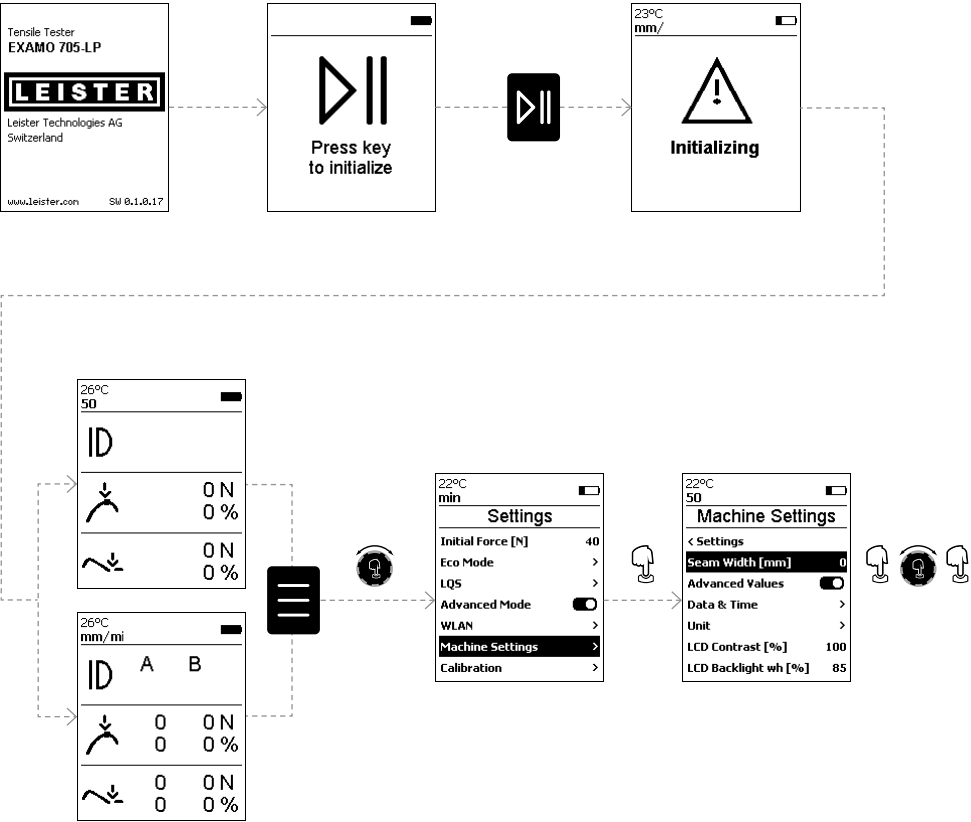
Symbol: **Warning Message**
(Note the respective error code in Section Warning and Error Messages [13]).

11. Settings and Features of the EXAMO 700-LP / EXAMO 705-LP Software

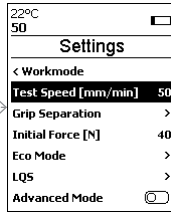
11.1 Menu Navigation Overview for EXAMO 700-LP / EXAMO 705-LP

Note: Pressing the *Menu* button (42)  will return you to the working display in each menu item.

Example: Adjusting the seam width

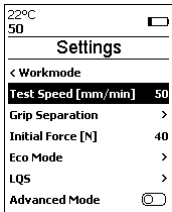


11.2 Basic setting



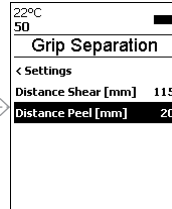
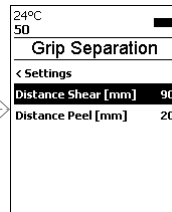
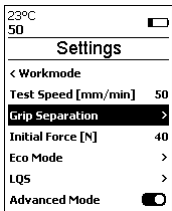
- Test Speed
- Grip separation
- Initial Force
- Eco-Mode
- LQS (Leister Quality System)
- Advanced Mode

11.3 Test Speed



The test speed is adjusted in 50 mm/min increments. Values between 50 and 500 mm/min can be selected. The factory setting for the test speed is 50 mm/min.

11.4 Grip separation



The grip separation is adjusted in 1-mm increments within a range of 15 to 500 mm for the EXAMO 700-LP and 15 to 200 mm for the EXAMO 705-LP. Pressing and holding (> 2 s) the *shear test* button (40) or *peel test* button (41) on the **control panel** (8) overrides the preset grip separation based on the current position of the **rocker clamp** (6) or **eccentric clamp** (5). Overwriting the entry is confirmed by an audible signal and a brief flash of the **display** (44).

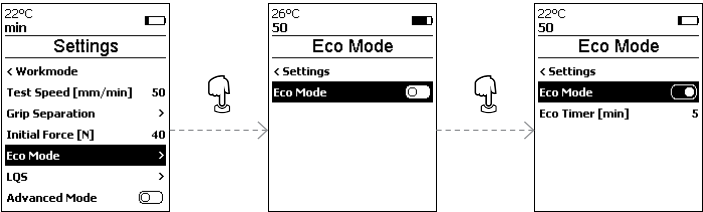
11.5 Initial Force



Once the set initial force is reached, the test evaluation begins. The setting is adjusted in 5 N increments from 40 to a maximum of 100 N. The factory setting is 40 N.

11.6 Eco-Mode

The Eco Mode feature reduces energy consumption and extends battery life. This feature is enabled by default. You can turn off Eco Mode by pressing the *e-Drive* button (43).

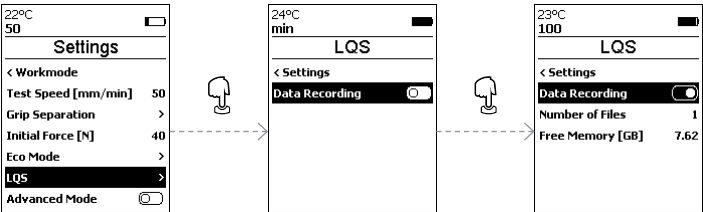


If Eco Mode is enabled and the device remains inactive for the specified period of time, it will automatically switch to Standby Mode. The key backlighting is turned off, and the **display (44)** brightness is set to the minimum. The green light indicating that the *Shear Test* (40) or *Peel Test* (41) buttons may be activated remains on. The time interval for activating standby mode can be set between 1 and 20 minutes. The time interval is set to 5 minutes by default. Active standby mode is indicated by a leaf icon in the **status display (50)**.

To exit standby mode, press any button or the *e-Drive* (43).

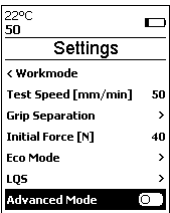
11.7 LQS Data Recording (Leister Quality System)

The **LQS (Leister Quality System)** is a digital quality **assurance** system that stores test results and test parameters. The recorded data is evaluated using the separate myLeister app user software. For more information on LQS, see [\[9\]](#) the LQS test data record [\[12\]](#).



LQS must be enabled to record the data. Once activated, both the amount of recorded data and the available memory are displayed. The memory card has a capacity of at least 8 GB.

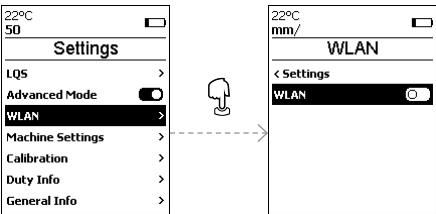
11.8 Advanced Mode



If you have enabled Advanced Mode, additional menu options will be available.

11.9 WLAN

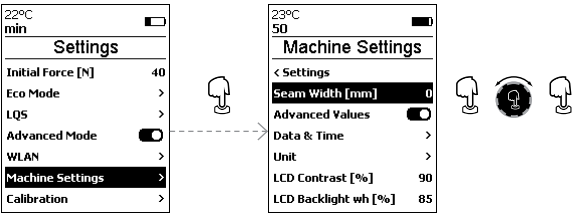
WLAN is switched off at the factory.



Wi-Fi must be turned on so that a connection can be established between EXAMO and external devices via the myLeister app.

11.10 Device Settings (Machine Settings)

Adjusting the seam width (mm)



To ensure that the elongation in the shear test is calculated correctly (the *Shear Test* button (40) lights up green), the seam width of the test specimen (coupon) must be entered accordingly in the machine settings. By default, the value is set to 0 and can be adjusted to a maximum of 80 mm.

To correctly calculate the elongation in the peel test (the *Peel Test* button (41) lights up green), the seam width of the test specimen (coupon) must be set to 0.

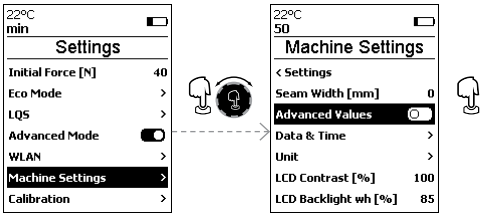
For determining the seam width during a shear test, see the figure below.



To correctly calculate the percentage elongation, the clamping position of the test specimen (coupon) must be clearly defined. We therefore recommend using the **rocker clamp (6)** on both sides of the EXAMO.

Advanced Values

Advanced Values is disabled by default.



Advanced Values OFF

22°C	min		
ID			
A	1	B	2
↓	0	0	N

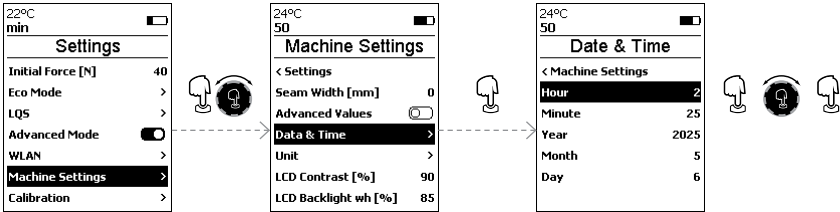
Advanced Values ON

26°C	50		
ID			
A	1	B	2
↓	0	0	N
↓	0	0	%

When the Advanced Values function is enabled, the breaking force [N] and the corresponding elongation [%] are displayed on the work plane in addition to the maximum tensile force [N] and the corresponding elongation [%]. This function is deactivated in the device's as-delivered state.

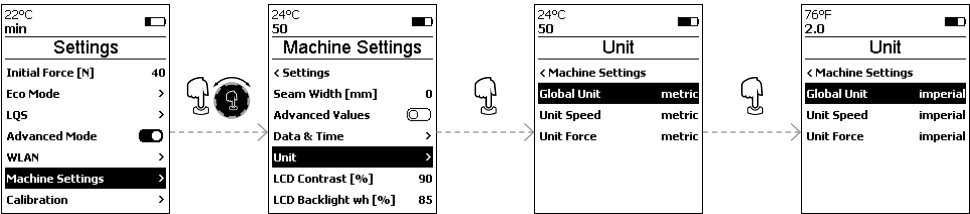
Setting the Date and Time

Here you can set the hour, minute, year, month and day.

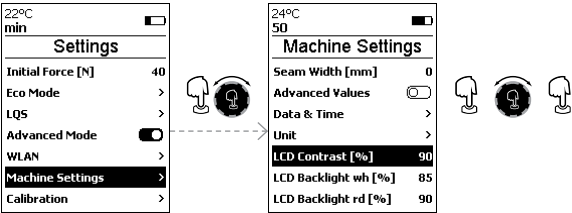


Unit Settings

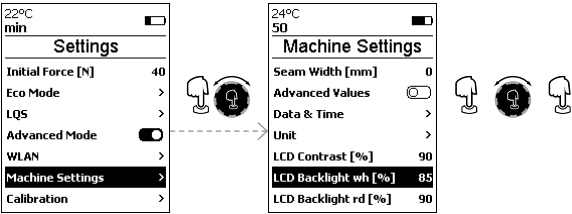
Here you can select the unit of the display; metric or imperial. Metric values are set at the factory.



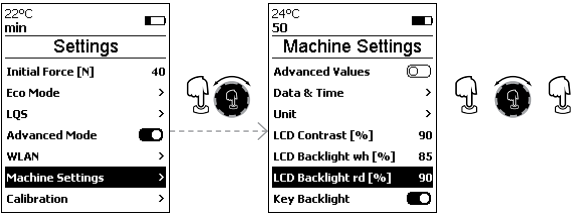
Adjusting LCD Contrast (LCD Backlight wh [%])



LCD Backlight Setting: White (LCD Backlight wh [%])

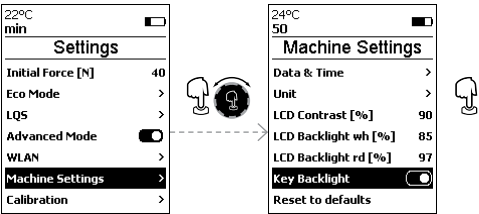


LCD Backlight Red Setting (LCD Backlight Red [%])



Key Backlight Settings

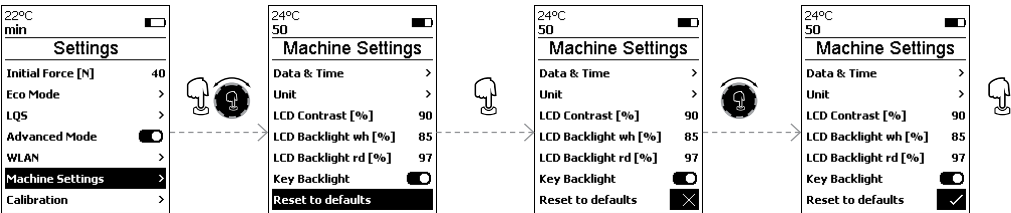
You can use the Key Backlight feature to turn the keyboard backlight on or off.



Even when the key backlight is turned off, active grip separation is indicated by a green light.

Reset to Factory Settings (Reset to Defaults)

Activating the Reset to defaults function resets all settings to factory default.

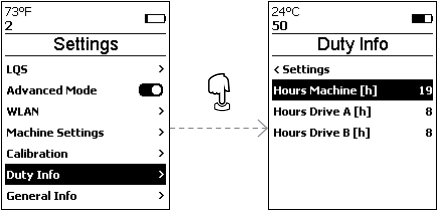


11.11 Calibration (Application Protection Mode)



Calibration is a password-protected area for Leister service centers.

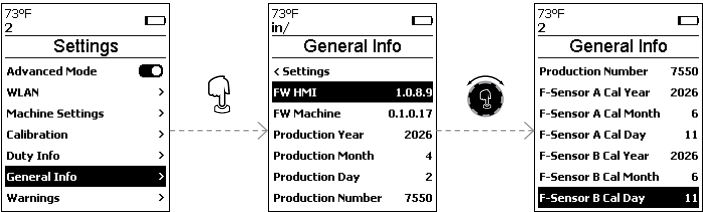
11.12 Operating Times (Duty Info)



Duty-Info displays the total operating times for the machine and the individual drives. The counters cannot be cleared.

11.13 General Info

The following information is displayed in the General Info section:



- Software version HMI and PCU
- Production date of the machine
- Serial number
- Machine calibration date

12. LQS Test Data Logging

The test data recording function records the maximum tensile force, corresponding elongation, test speed, and other values during the test.
The recorded data is analyzed using the separate myLeister app, and test reports can be generated.



The MyLeister app can be downloaded for free from the Google Play Store, the Apple App Store, and Microsoft.

12.1 Prepare Test Data Logging

The following parameters must be set in the Settings menu before welding data is recorded:

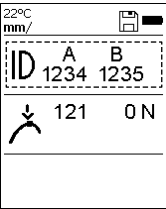
- Check date and time and correct as required. See [🔧 Device Settings \[11.10\]](#)
- Set the seam width according to the test specimen (coupon). See [🔧 Device Settings \[11.10\]](#)
- Check whether LQS is enabled. See [🔧 LQS Data Recording \[11.6\]](#)
- Check to see if Wi-Fi is turned on. See [🔧 Wi-Fi \[11.09\]](#)



An active Wi-Fi connection is not required for data logging. This is required to establish a connection between EXAMO and external devices via the myLeister app.

12.2 Record Test Data

- Clamp the test specimen (coupon)
- Press the *Start/Stop Test* button (30). The memory icon  appears in the **status display (50)**.
- Each test is assigned a sequential identification number, which is displayed on the **working display (51)**.



- Once the test is complete, the data records are automatically saved to the device's internal memory. These can then be transferred to the cloud via the myLeister app for archiving, analysis, and report generation.
- Once the operation is complete, the save icon disappears from the **status display (50)**.



In the event of a power outage or if the test is interrupted, the data records will not be saved.

12.3 Data Logging: Test Data Files

A separate data file is created for each test. A test begins when the *start/stop* button (30) is pressed and ends with the failure of the clamped specimen.

The name of the welding data file consists of the device identifier, date, time, and a sequential Number and, optionally, the file name suffix.

The serial number starts with 001 at the start of each new day and can be a maximum of 9999.

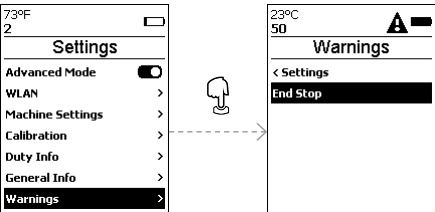
12.4 Data Synchronization

The test data files recorded by EXAMO are read and synchronized by the myLeister app. To do this, the EXAMO's Wi-Fi module must be turned on (see  Wi-Fi [11.09]). When EXAMO is connected to the myLeister app, the Wi-Fi icon  appears in the **status display (50)**.



Synchronize data regularly with the myLeister App. Otherwise, unsynchronized test data may be lost on the device, for example, in the event of a malfunction of the control unit.

13. Warning and Error Messages for EXAMO 700-LP / EXAMO 705-LP



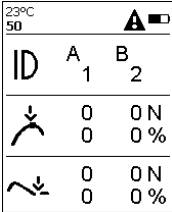
All warnings are displayed via the Warnings function.

If there is a warning pending, you can still continue to work largely without restrictions.

In contrast to the warning message, **it is not possible to continue working once an error message has appeared.** The drive is automatically locked. The corresponding error codes appear immediately on the display (44).

You can find specific information about the type of error or warning in the *menu* (42) under Warnings.

Message type	Display	Warning Mes- sage / Error Code	Description and measures
Warnings		----	Example warning symbol in the status display (50)
		----	Low Battery Warning. At the same time, the red backlight of the LCD module is switched on alternately
		Undervoltage	Low Battery Voltage Solution: Replace or charge the battery
		Ambient Temperature	Ambient Temperature During Battery Operation Solution: Use the device at lower ambient temperatures.
		Force overload	Force overload Solution: Test the specimen (coupon) at a reduced test speed (≤ 150 mm/min) or test materials in accordance with their intended use
		End Stop	Limit switch activated Solution: Retract the rocker clamp (6) and remove the object that is caught in it.
		Ext. Temp. Sensor	Temperature Sensor Value Solution: Check the connector or replace the temperature sensor (14) .
		----	HMI Warning: Miscellaneous

Message type	Display	Warning Message / Error Code	Description and measures
Warning		0200 0100	Unknown HMI Version An error occurred while initializing the control unit. Solution: Switch off the device and restart after a few seconds. ^{1,2}
		0200 0080	Failure Date/Time An error occurred during the initialization of the date and time function. Solution: Switch off the device and restart after a few seconds. ^{1,2}
		0200 0020	Invalid Date/Time The current date and time information is Invalid. Solution: Set the date and time in the Settings menu under Machine Settings, in the Date & Time section. ¹
		0200 0020	Memory Full The memory card for data recording is full. During data recording, the icon  flashes in the status display (50) Solution: Synchronize data with the myLeister app. ^{1,2}
		0200 0008	Memory Card Access A problem with the memory card occurred during data recording. In this case, the test data is no longer recorded. The symbol  flashes in the status display (50). Solution: Switch off the device and restart after a few seconds. ^{1,2}
		0200 0004	WLAN Module Access There is a problem with the WLAN module. Solution: Switch off the device and restart after a few seconds. ^{2,3}

Message type	Display	Warning Message / Error Code	Description and measures
Errors (including, if applicable, the address of the sales and service partner) ⁴		----	Example of an error in the working display (51)
			PCB Temperature Error. At the same time, the red backlight of the LCD module turns on.
		0001 XXXX	PCB Temperature
		0004 XXXX	Hardware error
		0200 XXXX	Communication module error
Service message		----	If the service counter for the unit reaches 1000 operating hours based on motor runtime, the message "Maintenance Servicing" will appear on the display (44) the next time the main switch (1) is turned on. This message is displayed for 10 seconds or can be skipped until the next switch-on by pressing the <i>e-Drive</i> button (43).

¹ If one of the warnings occurs, data recording cannot be used.

² If the warning still appears, contact a Leister sales and service partner.

³ Data recording can be used when these warnings are displayed. Please note that, depending on the circumstances, this issue may prevent data from being transferred from the device to the myLeister app.

⁴ Contact a Leister sales and service partner.

14. Frequently Asked Questions, Causes, and Solutions for the EXAMO 700-LP / EXAMO 705-LP

The device won't turn on or turns off even though the battery is inserted:

- Check the battery's charge level. If the battery voltage is too low, the device cannot be turned on. Charge the battery.
- If the ambient temperature exceeds 50 °C, the battery function may shut down. Let the battery cool down and/or use it at lower ambient temperatures.
- The battery's power consumption is too high. This causes the battery to overheat (> 50 °C), resulting in the battery shutting down. Allow the battery to cool down between tests, or use the battery at lower ambient temperatures.
- At ambient temperatures below -20 °C, the battery function may shut down. Use the device at higher ambient temperatures.

The device won't turn on or turns off even though it's plugged in:

- The mains voltage is too low or too high. The device is designed for voltages between 100 and 240 V. Check the available line voltage.

The device stops automatically during the test

- Excessive tensile forces caused by the use of an incorrect test specimen (coupon). The maximum tensile force at speeds ≤ 150 mm/min is 2500 N, and at speeds > 150 mm/min, it is 1500 N. Test only materials specified in these operating instructions, or contact Leister to determine whether special materials can be tested.
- Excessive torque is present due to a lack of spindle lubrication. The device must be serviced.
- Initial force value is too high. The value must be set to a lower value in the Setup menu.

Elongation of the test specimen (coupon) was calculated incorrectly

- The weld width is entered incorrectly in the Setup menu. Adjust the value in the Setup menu according to the test specimen (coupon).

Force measurement results are implausible

- The device is no longer measuring correctly. Perform the tensile test using **Leister Test Wire** and compare the results with the specifications provided with **Leister Test Wire**. **Leister Test Wire** is available from Leister under item no. No. 173.445. If the results deviate from the specifications, the device must be recalibrated by a Leister service center.

The device stops because the limit switch was triggered

- As the test specimen (coupon) is retracted, it pushes the spring-loaded **eccentric clamp (5)** inward, causing the device to stop. Before retracting, any remaining test specimens (coupons) must be removed. Separate the rockers using the **rocker clamp (6)** and remove it before closing them again.
- The **rocker clamp (6)** moves into the **eccentric clamp (5)** because the zero-point limit switch did not activate. The device must be repaired by a Leister service center.

The rocker clamp (6) no longer retracts

- The **rocker clamp (6)** has extended beyond its maximum stroke. First turn off the EXAMO using the **main switch (1)**, and then turn it back on. After turning on the device, initialize it by pressing the *start/stop* button (30).
- While performing the initialization procedure, press the **rocker clamp (6)** in the direction of the home position. If the rocker clamp starts to move, wait until the referencing process is complete.
- If the procedure described above does not resolve the problem, the device must be repaired by a Leister service center.

Test specimens (coupons) slip out of the eccentric (5) or rocker clamp (6) during the test

- The wrong test specimen (coupon) was used. Test only materials specified in these operating instructions, or contact Leister to determine whether special materials can be tested.
- Before testing, tighten the **star handle (3)** of the **rocker clamp (6)** sufficiently. Press down on the **cylinder handle (2)** of the **eccentric clamp (5)**.
- The free clamping length (overhang) of the test specimens (coupons) is too short. Test specimens (coupons) with longer flaps. The minimum length of the lobes is 22 mm.
- The test specimens (coupons) may be damp. Dry the test specimens (coupons) before clamping them in place.

15. Maintenance

15.1 General Maintenance Instructions for the EXAMO 700-LP / EXAMO 705-LP



Risk of electric shock due to electrical voltage

- Remove the **power cord (17)** and **battery (18)** from the device.
- The device may only be opened by instructed, qualified personnel.



Do not bring the device into contact with aggressive substances (e.g. acetone, diluent, etc.). There is **risk of damage** to the installed **components**.

- Keep the appliance clean.
- Use clean cloths to clean the device.

- Only use original Leister accessories.
- Repairs must be performed exclusively by authorized Leister service centers.

For more information please visit leister.com

Recommended maintenance intervals for the device:

Period of time (operating hours)	Monitoring and maintenance work	Spare parts	Tools
After each use of the device	Cleaning the Spindle Cover (19)	----	a clean cloth, lightly dampened with water
After each use of the device	Removal of Test Specimen Remnants (Coupon)	----	----
Every 1 000 working hours	Spindle Lubrication Carry out through service centers	----	Klüber GBU Y-131 Grease Service Center
Annually	Calibrating the Device	----	Service Center

16. Accessories

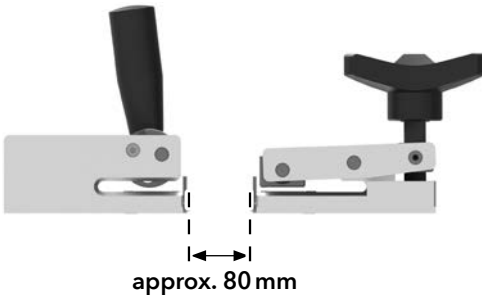
For more information please visit leister.com.

16.1 Leister Test Wire

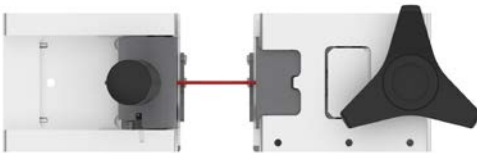
Leister Test Wire (Item number 173.445) is used for quick and reliable verification of the EXAMO's measurement accuracy. It allows the user to verify that the system is functioning properly, thereby providing additional assurance regarding the validity of the measurement results.

Leister Test Wire Test Procedure

1. Set the test speed to 50 mm/min (see  Test Speed [11.3])
2. Use the *Move back* (31) and *Move Forward* (32) buttons to move the clamps to a distance of approximately 80 mm.



3. Place the Leister Test Wire in the center of the clamps. Lightly tighten the **rocker clamp (6)**—just enough so that the wire is held securely and cannot slip out.



4. Start the test by pressing the *start/stop* button (30)
5. Compare the measured maximum force  with the tolerance limits specified in the Leister Test Wire package insert. If the measured value falls within the specified tolerance range, it can be assumed that the EXAMO is operating with the required measurement accuracy.



If the measured maximum tensile force is outside the tolerance range, the device must be recalibrated by Leister sales and service partners.

17. Service and repair

Repairs must be performed exclusively by authorized Leister sales and service partners.
You can find the address of your authorized Leister sales and service partner on the last page of this manual.

For more information please visit leister.com.

Note



When shipping the battery, take care to ensure correct declaration (hazardous goods).

18. Training

The Leister Academy and its authorized Leister sales and service partners offer welding courses and product and service application training.

For more information please visit leister.com.

19. Other applicable documents

EXAMO 700-LP / EXAMO 705-LP – Safety Instructions (Item number: 178.801)

20. Declaration of Conformity

You can find the Declaration of Conformity on the website at leister.link/doc-examo



21. Disposal



Do not dispose of electrical equipment with household refuse

Electrical equipment, accessories and packaging should be recycled in an environmentally friendly manner.
When disposing of our products, consider national and local Regulations.

For the disposal of batteries, observe the  general safety instructions [1.3].

Warranty

- The guarantee or warranty rights granted for this device by the direct distribution partner/salesperson apply from the date of purchase. In the event of a guarantee or warranty claim (verification by invoice or delivery note), manufacturing or processing errors will be rectified by the sales partner through replacement delivery or repair. Heating elements are excluded from warranty obligations or guarantees.
- Other guarantee or warranty claims are excluded within the framework of mandatory law.
- Damage resulting from natural wear, overload, or improper handling is excluded from the warranty.
- Devices that have been converted or modified by the purchaser are not covered by any warranty or guarantee.
- Only use original Leister spare parts and accessories; otherwise, any warranty or guarantee claims will be invalidated.
- In addition to your warranty under sales law, Leister offers an extended warranty of up to 5 years from the date of purchase on Leister brand products (devices and machines) purchased through authorized retailers. To do so, register your product online at leister.link/warranty within 30 days of the purchase date.



Find a nearby dealer



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