



Proceq ZAA 2600.C Automatic Crockmeter

Instruction Manual



Exclusion of liability	5
1 Description of device	6
2 Safety information.....	6
2.1 Symbols used	6
2.2 Safety notes and hints	7
3 Delivery of device	9
3.1 Damages during carriage	9
3.2 Shipment	9
3.3 Standard delivery	10
3.4 Options for crockmeter tests.....	10
3.5 Options for scratch and mar resistance tests	12
3.6 Options for Proceq ZAA 2600.C	12
4 Device overview	13
5 Assembly and starting up	15
5.1 Assembly.....	15
5.2 Startup.....	16
5.3 Shutdown	16
5.4 Disassembly for transport.....	17
6 Crockmeter tests	18
6.1 Preparation.....	18
6.2 Mounting the friction finger sets.....	18
6.2.1 Mounting the friction finger set A.....	19
6.2.2 Mounting the friction finger set B.....	20
6.2.3 Mounting the friction finger set C	21
6.3 Carry out crockmeter tests	22
7 Scratch and mar resistance tests	25
7.1 Preparation.....	25
7.2 Mounting the scratching and mar resistance sets	25
7.3 Carry out scratch and mar resistance tests	26
8 Operation and Menu.....	31
8.1 Main screen.....	31
8.1.1 Manual moving.....	31

8.1.2 Zero the equipment	31
8.1.3 Crockmeter tests	32
8.1.4 Scratch and mar resistance tests	32
8.1.5 Pause	32
8.1.6 Select layout.....	32
8.1.7 Setting the cycle speed	33
8.1.8 Setting the stroke length	33
8.1.9 Position	33
8.1.10 Menu	33
8.1.11 Lock	34
8.2 Menu structure in Crock / Scrub mode	35
8.3 Menu structure in Application mode	36
8.4 Using layouts	37
8.4.1 Selecting a layout.....	37
8.4.2 Editing the selected layout	37
8.4.3 View and edit all layouts.....	37
8.5 Motor settings	38
8.5.1 Manual speed.....	38
8.5.2 Speed mode.....	38
8.5.3 Acceleration mode	38
8.6 Reset	39
8.7 Status messages	39
8.7.1 Overload	39
8.7.2 End switch.....	39
8.7.3 Cycle speed and stroke length cannot be set	39
8.7.4 The motor is overheated	40
8.7.5 Lubrication the guide rods	41
8.7.6 Emergency stop function.....	41
9 Converting from crockmeter into basic unit.....	42
10 Converting from basic unit into crockmeter.....	43
11 Turning the glass plate.....	45
12 Maintenance and cleaning	45

12.1 Maintenance and cleaning work that can be carried out by the user.....	45
12.2 Cleaning	45
12.3 Lubrication of the guide rods	46
12.4 Replacing the fuse.....	47
12.5 Inspection	47
13 Technical specifications.....	48
Glossary	50

Exclusion of liability

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Illustrations, descriptions as well as the technical specifications conform to the instruction manual on hand at the time of publishing or printing.

However, Proceq SA policy is one of continuous product development. All changes resulting from technical progress, modified construction or similar are reserved without obligation for Proceq SA to update.

Some of the images shown in this instruction manual may be of a pre-production model and/or are computer generated; therefore the design / features of the delivered product may differ in various aspects.

The instruction manual has been drafted with the utmost care. Nevertheless, errors cannot be entirely excluded. The manufacturer will not be liable for errors in this instruction manual or for damages resulting from any errors.

The manufacturer will be grateful at any time for suggestions, proposals for improvement and indications of errors.

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1 Description of device

The Proceq ZAA 2600 is an automatic linear abrasion tester with touchscreen and stepless adjustable stroke length for reproducible rubbing tests.

In particular, this instrument has the following features:

- Thanks to its modular construction, the automatic universal unit can be equipped with different kits for carrying out also application, scrub resistance and washability tests as well as recording of the drying time.
- Upgrade can be achieved at any time by simply purchasing an add-on kit.
- Optional adapter for carrying out scratch and mar resistance tests.
- Up to 4 crockmeter tests can be carried out at the same time.
- Fast change of the friction finger sets.
- Storage of various crockmeter profile settings such as stroke length and number of cycles.
- Up to 4.5 kg (9.92 lbs) can be loaded.
- Easy to use.
- Compact design saves counter space.
- Custom-made versions are available on request.

2 Safety information

2.1 Symbols used



This note comprises instructions needed to follow directions, specifications, proper working procedure and to avoid data loss, damage or destruction of the instrument.



This note signifies a warning about dangers to life and limb if the apparatus is handled improperly. Observe these notes and be particularly careful in these cases. Also inform other users on all safety notes. Besides the notes in this instruction manual the generally applicable safety instructions and regulations for prevention of accidents must be observed.

2.2 Safety notes and hints



It is strictly forbidden to open the housing of the Proceq ZAA 2600. If not observed, all the guarantee and liability claims to Proceq SA will be void.



Place the device on a solid, even surface before operation and ensure that the separator (power socket) is accessible and that the instrument can be separated from the power supply at any time.



Never touch any moving parts during operation.



The side panels must always be mounted during operation.



Do not lean over the unit during operation.



Always wear safety glasses during operation.



Only connect the Proceq ZAA 2600 to alternating current of a voltage of 100 – 240 V at 50 to 60 Hz. The voltage must correspond to the information given on the identification plate of the apparatus. The device may only be connected to sockets with a protective earth conductor.



Never use a damaged power cable. Only use power cables with a protective earth conductor. Removable power cables must not be replaced by an insufficiently rated power cable. Only use the power cable provided by the manufacturer.



The Proceq ZAA 2600 Automatic Crockmeter is constructed in accordance with the state of the art and is safe to operate. However, there is always risk when the instrument is handled improperly or differently than intended by the manufacturer.



Depending on the coating material / abrasives used, the test may only be carried out in a ventilated environment.



Always unplug the power cable before assembling and/or converting the unit.



Scrub or crock abrasion tests may produce dust through abrasion. If necessary, appropriate safety related measures must be provided by using a suction device.



The Proceq ZAA 2600 is a multi-function device and is exclusively intended for use in various functions defined in chapter 1 of this manual. Any other use – not authorized by Proceq – is considered as being not in accordance with the intentions of the manufacturer and is conducted at the user's own risk. The manufacturer is not liable for any resulting damages.



Every person operating or maintaining the Proceq ZAA 2600 must have read and understood this instruction manual in its entirety, in particular the safety precautions and warnings.



Unauthorized modifications and changes of the Proceq ZAA 2600 are not permitted.



Reproduction without permission is not allowed.

- ! Before lifting or moving the apparatus, the glass plate must be removed to reduce the total weight. Tilting the device can cause the glass plate to fall out.
- ! All maintenance and repair not explicitly allowed and described in this manual shall only be carried out by Proceq SA or your authorized Proceq agent, failure to comply voids warranty.
- ! **Proceq SA** refuses all warranty and liability claims for damages caused by usage of the Proceq ZAA 2600 in combination with **non-original accessories**, or accessories from 3rd party suppliers.
- ! All local safety regulations apply for the operation of the Proceq ZAA 2600.

The following warning symbols can be seen on the device:



Danger of hand injury: Hands can be bruised, or otherwise injured.



Danger of electrical shock

3 Delivery of device

3.1 Damages during carriage

On receipt of the goods, check for any visible damages on the packaging. If it is undamaged you may sign the receipt of the goods. If you do suspect by visual inspection that damage has occurred, make a note of the visible damage on the delivery receipt and request the courier to countersign it. Moreover, the courier service must be held responsible for the damage in writing.

If a hidden damage is discovered while unpacking, you have to inform and hold the courier liable immediately in the following way: "When opening the parcel we had to notice that ... etc." This superficial checking of the goods has to be done within the time limit set by the carrier, which is normally 7 days. However, the period could vary depending on the courier. Hence, it is recommended to check the exact time limit when receiving the goods.

If there are any damages also inform your authorized Proceq agent or **Proceq SA** immediately.

3.2 Shipment

Should the device be transported again, it must be packaged properly. Preferably use the original packaging for later shipments. Additionally use filling material in the package to protect the device from any shock during carriage.






To protect persons and the apparatus, proper care must be taken when lifting or carrying it. It is recommended to hold and carry the Proceq ZAA 2600 on both sides of the housing. Always remove the glass plate before lifting or tilting the device.








3.3 Standard delivery

The following parts are included in the delivery:

- automatic Crockmeter with touchscreen
- tool holder
- reversible, double sided glass plate: printing blanket and glass surface
- 4 rubber feet
- spirit level
- power cable
- 3 mm and 2,5 mm Allen key
- certificate of manufacturer
- instruction manual




3.4 Options for crockmeter tests

<p>Friction finger set A acc. to DIN 55654 1 friction finger holder 1 friction finger A (22 mm x 22 mm / 0.87" x 0.87") 1 set rubbing cloth clamp 1 set of 2 pieces elastic strap 10 pieces felt insert</p>	 A photograph of the friction finger set A, showing a metal holder with a black adjustment knob and a silver-colored finger assembly.
<p>Friction finger set B with Ø 16 mm (0.63") for tests according to:</p> <ul style="list-style-type: none">- DIN 55654- AATCC test method 8- EN DIN 13523-11- EN ISO 105-X12- Volkswagen PV 3906- based on ASTM F1319 <p>1 friction finger holder 1 friction finger B with Ø 16 mm (0.63") 1 rubbing cloth clamping ring</p>	 A photograph of the friction finger set B, showing a metal holder with a black adjustment knob and a silver-colored finger assembly with a clamping ring.
<p>Friction finger set C for tests according to:</p> <ul style="list-style-type: none">- DIN 55654- BMW AA-0134 <p>1 friction finger holder 1 friction finger C 1 set rubbing cloth clamp 1 set of 2 pieces elastic strap</p>	 A photograph of the friction finger set C, showing a metal holder with a black adjustment knob and a silver-colored finger assembly.





2 sets cellular rubber	
Weight for test force 9 N The test weight is only achieved with a Proceq friction finger set.	
Weight for test force 22 N The test weight is only achieved with a Proceq friction finger set.	
Weight 50 g	
Weight 100 g	
Weight 500 g	
Felt cloth	
Cotton rubbing cloth acc. to ASTM F1319 and ISO 105-F09	

A guideline for selecting the suitable equipment according to the desired standards can be found in the document „Equipment for crockmeter tests“, available at: www.proceq.com

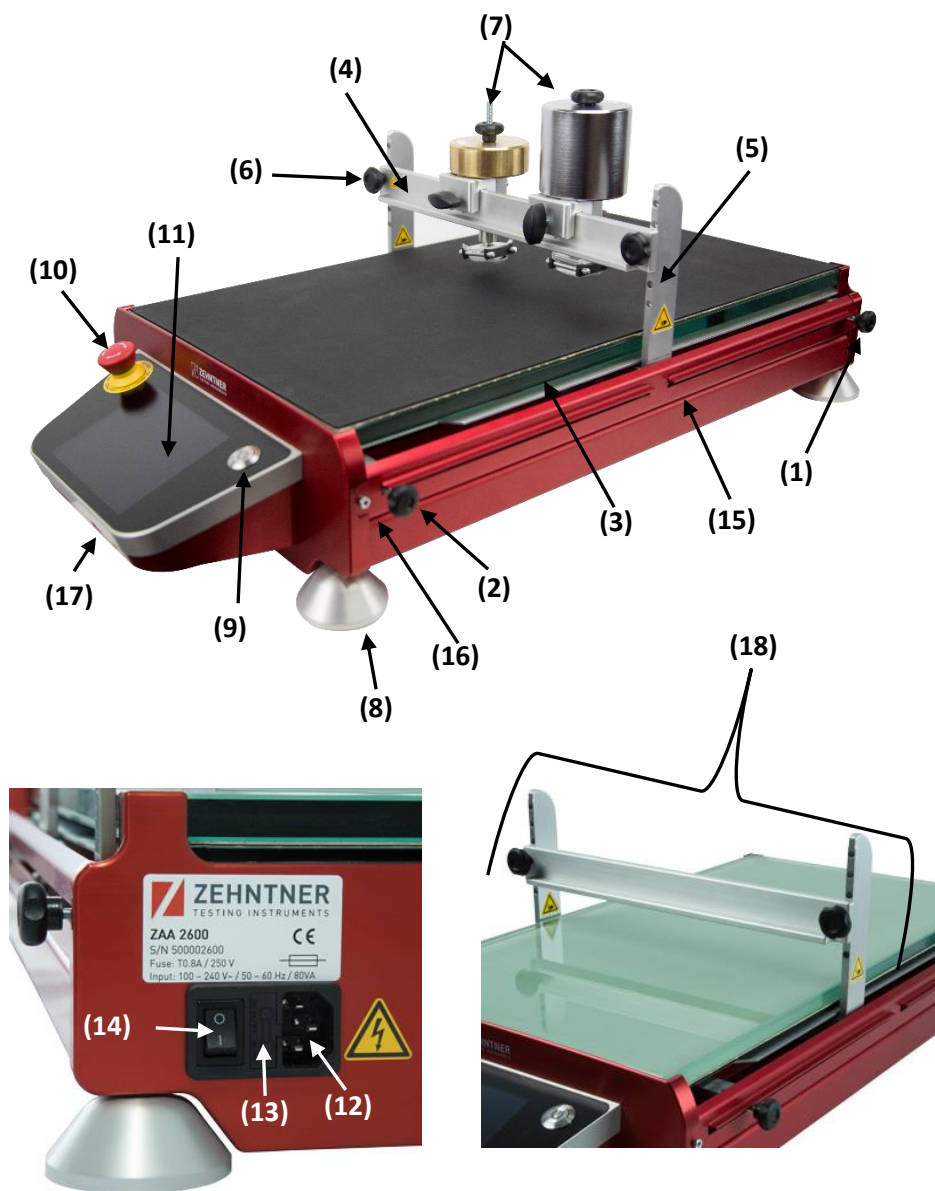
3.5 Options for scratch and mar resistance tests

ZHT 2093 Pocket Hardness Tester with rubber wheels	
ZST 2095 Mar Resistance Tester	
Adapter for scratch and mar resistance tests (Holder for ZHT 2093 and ZST 2095)	

3.6 Options for Proceq ZAA 2600.C

Modification set „Application“	
Modification set „Heatable Application“	
Modification set „Scrub Tester“	
Maintenance Proceq ZAA 2600	

4 Device overview



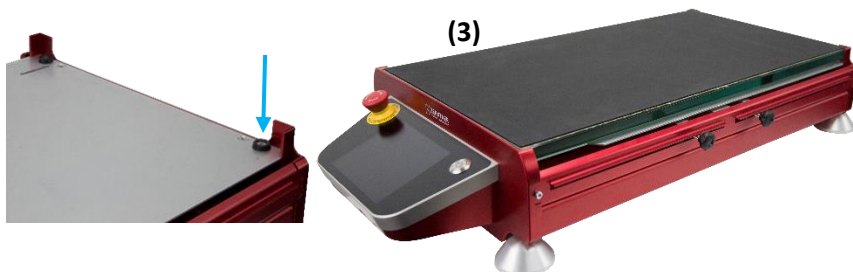
- (1) **Start stop**
- (2) **End stop**
- (3) **Glass plate**
- (4) **Tool holder bridge**
- (5) **Tool holder side part**
- (6) **Height adjustment for tool holder**
- (7) **Friction finger set**
- (8) **Levelling feet**
- (9) **Power button**
- (10) **Emergency stop button**
- (11) **Touchscreen**
- (12) **Power supply** 100 V – 240 V / 50 Hz – 60 Hz
- (13) **Delay-action fuse** 0.8 A / 250 V
- (14) **Main switch** (On / Off)
- (15) **Side panel**
- (16) **Fixing screw of the side panel**
- (17) **USB Port** (for future use)
- (18) **Tool holder**

5 Assembly and starting up

5.1 Assembly

Before the first use the apparatus has to be assembled or converted from another application:

- Check if the four rubber feet are mounted.
- Place the glass plate (3) with the required side facing up in the unit.



- Remove the start stop (1) and the end stop (2).
- Loosen the fixing screws of the side panels (16) and remove the side panels (15).



- Mount the tool holder-side parts (5) and the tool holder bridge (4).



- Remount the side panels (15), the one with slit on the right side, the other one on the left side.
- Remount the start stop (1) and the end stop (2).
- Move the start stop (1) backwards and the end stop (2) forward as far as possible. Fasten the screws of the stops (1) and (2).



- ! To protect persons and the apparatus, proper care must be taken when lifting or carrying it. It is recommended to hold and carry the Proceq ZAA 2600 on both sides of the housing. Always remove the glass plate before lifting or tilting the device.

5.2 Startup

Connect the device to a power socket with the supplied power cable and turn on the main switch (15).

Switch on the device by pressing the power button (10). The device will be ready after a short start-up phase.

5.3 Shutdown

Turn off the device by pressing the power button (10). The display will turn off and the device is shutting down. Before removing the power cable, turn off the main switch (15).

5.4 Disassembly for transport



Always switch off the device and unplug the power cable before disassembling.

To prevent transport damage, the device must be disassembled as follows:

- Remove all friction finger sets from the tool holder bridge (4).
- Remove the start stop (1) and the end stop (2).
- Loosen the fixing screws of the side panels (16) and remove the side panels (15).
- Remove the tool holder bridge (4) and the tool holder side parts (5).
- Remount the side panels (15), the one with slit on the right side, the other one on the left side.
- Remount the start stop (1) and the end stop (2), move them to the centre of the device and fasten them.
- Remove the glass plate.

Shipping condition:



The glass plate (3) must be removed for shipping.

6 Crockmeter tests

6.1 Preparation

Before the apparatus is prepared for crocking tests, you should have decided:

- according to which standard the crocking test should be carried out
- which friction finger set, friction material and/or friction medium if necessary you will be using
- on the number of double strokes
- on the evaluation procedure
- on the time between the friction stress and the evaluation of the friction lane

Up to 4 identical or different friction sets can be used at the same time, depending on the friction material, the sample surface, the speed and the test load.

The highest possible test load is depending on the friction material, the sample surface and the speed.

6.2 Mounting the friction finger sets

To carry out crocking tests, at least one friction finger set and one weight are needed. Some standards or test procedures require additional equipment and auxiliary material.

For available options for crockmeter tests please refer to chapter 3.4 “Options for crockmeter tests” on page 10.

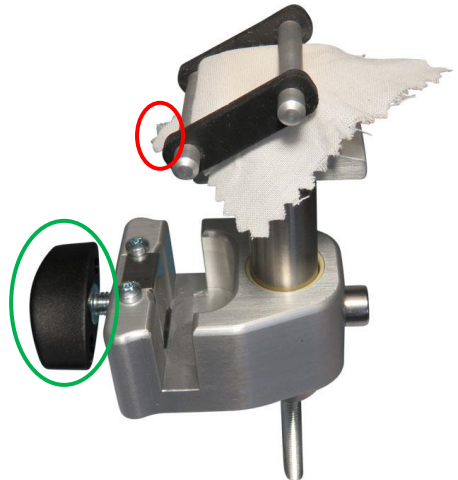
A guideline for selecting the suitable equipment according to the desired standards can be found in the document „Equipment for crockmeter tests“. Available at:

www.proceq.com

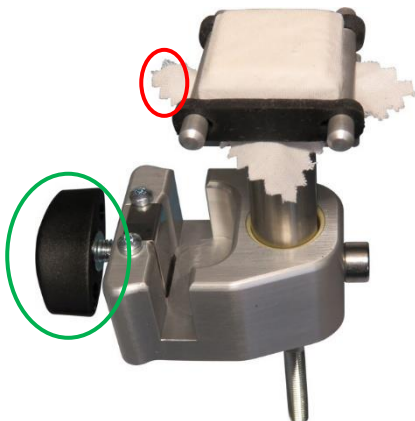
6.2.1 Mounting the friction finger set A



1) Place the felt stamp.



2) Place the rubbing cloth on the felt stamp with one corner (circled in red) facing the holder screw (circled in green).



3) Clamp the rubbing cloth smoothly.



4) Slide on the weight and screw it in place.



If your friction finger set does not look like picture 3, meaning one corner of the rubbing cloth (circled in red) does not face the holder screw (circled in green), you need to redo step 2.



The test load of 22 N will only be reached if the knurled nut is mounted.

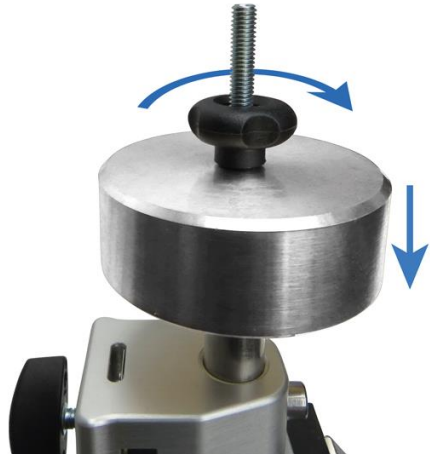


To avoid ejection of weights (accidentally falling down) they have to be screwed to the holder.

6.2.2 Mounting the friction finger set B



- 1) Compress the ring to enlarge its diameter and push it over the rubbing cloth.



- 2) Slide on the weight and screw it in place.



The test load of 9 N will only be reached if the knurled nut is mounted.



To avoid ejection of weights (accidentally falling down) they have to be screwed to the holder.

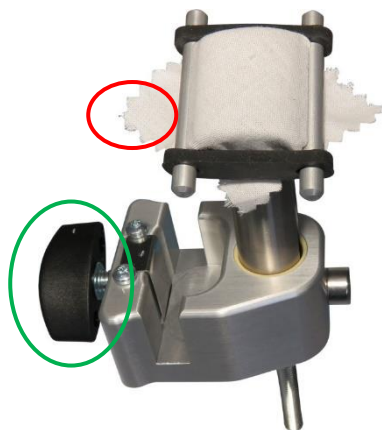
6.2.3 Mounting the friction finger set C



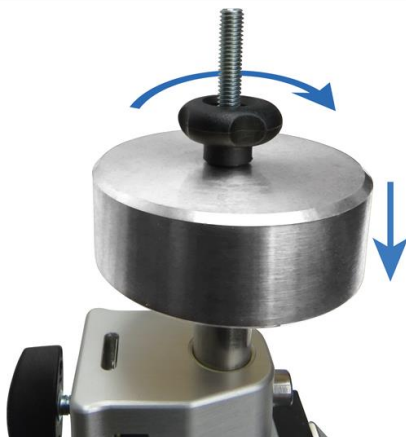
1) Check the cellular rubber for damages.



2) Place the rubbing cloth on the cellular rubber with one corner (circled in red) facing the holder screw (circled in green).



3) Clamp the rubbing cloth smoothly. 4) Slide on the weight and screw it in place.



If your friction finger set does not look like picture 3, meaning one corner of the rubbing cloth (circled in red) does not face the holder screw (circled in green), you need to redo step 2.



The test load of 9 N will only be reached if the knurled nut is mounted.



To avoid ejection of weights (accidentally falling down) they have to be screwed to the holder.

6.3 Carry out crockmeter tests



Never touch any moving parts during operation.



The side panels must always be mounted during operation.




Do not lean over the unit during operation.



Risk of injury: Never hold the sample by hand during operation. It has to be fixed with an appropriate means, e.g. double sided adhesive tape.




Crockmeter tests are carried out in machine mode „Crock/Scrub“. Press menu on the touchscreen -> Setup -> Machine mode, choose „Crock/Scrub“, the sign  appears in the display.

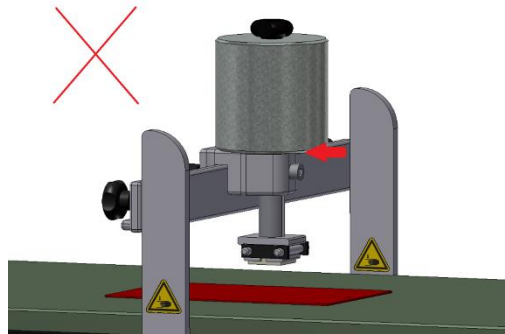
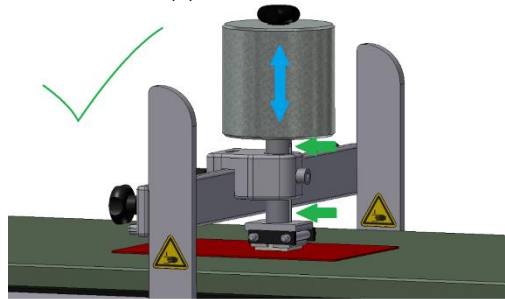
- Place the device on a solid, even surface.
- Level the apparatus using the included spirit level. To do so, place the spirit level on the sample tray and adjust the levelling feet (8) until the Proceq ZAA 2600 is levelled perfectly. The glass plate must be firmly in place.
- Place the sample.
 - Use the glass plate with the glass side facing up for very thin samples.
 - Use the glass plate with the printing blanket facing up for thicker samples.



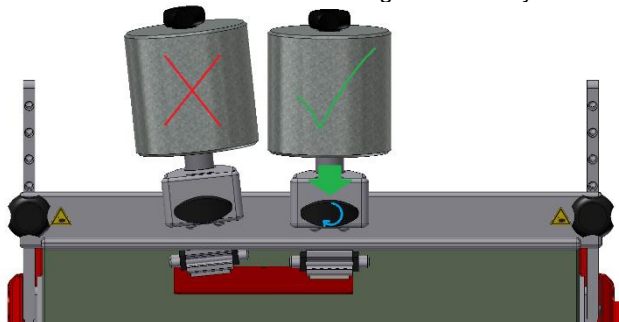
Fix the samples with a double sided adhesive tape on the glass plate in order to get homogeneous friction lanes.

- Move the tool holder (18) either with  or manually to the back position of the sample.
- Mount the chosen friction finger set (see chapter 6.2 “Mounting the friction finger sets” as from page 18.

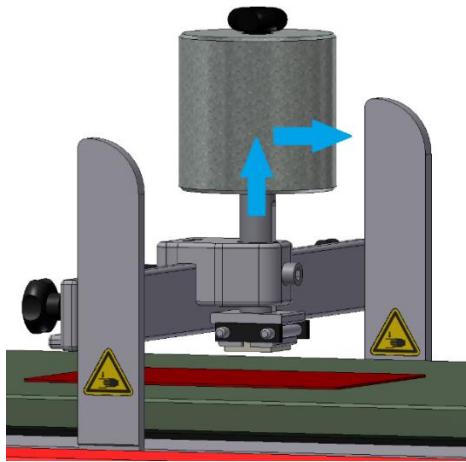
- Adjust the correct height of the tool holder-bridge (4) with the height adjustment for tool holder (6).








- ! The friction finger must be able to move up and down – as shown on the picture – it must not sag.
- ! Make sure that the tool holder-bridge (4) is mounted horizontally. It must not be tilted.
- Fix the friction finger set onto the tool holder-bridge (4) and fasten it with the screw. The holder has to bear on the bridge horizontally.



- ! The holder has to be vertical when fixing it.
- If necessary, adjust the position of the friction finger set above the sample by lifting the weight and pushing the tool holder-bridge (4).



- Press the „Zero“ symbol  on the touchscreen to set the start position.
Note: Do not zero directly at the start stop (1), but at least ca. 3 mm in front.
- Set the number of double strokes and stroke length on the touchscreen.
(refer to chapter 8.1.8 “Setting the stroke length” on page 33).
-  Set the right stroke length: The testing head has to remain on the sample over the whole stroke length.
-  Check the correct fit of the friction finger set before starting the procedure.
-  Do not lean over the unit during operation in order to avoid touching the tool holder (18).
- Start the crocking procedure by tapping on the symbol .
- Create the evaluation and test report according to the standard.

7 Scratch and mar resistance tests

7.1 Preparation

To carry out scratch and mar resistance tests, at least one scratching set is needed. Some standards or test procedures require additional equipment and auxiliary material.

For available options for scratch and mar resistance tests please refer to chapter 3.5 "Options for scratch and mar resistance tests" on page 12.

7.2 Mounting the scratching and mar resistance sets

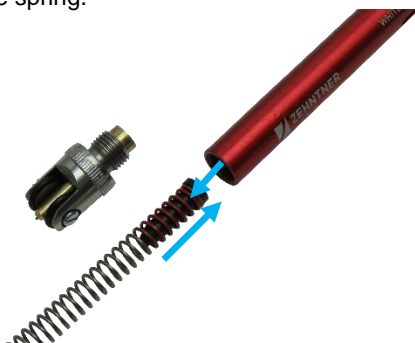
The assembly and operation of ZHT 2093 and ZST 2095 are identical.

For further information on operation please refer to the instruction manual of the particular testing instrument. The mounting is shown on ZHT 2093.

- Loosen the head by turning it anti-clockwise.

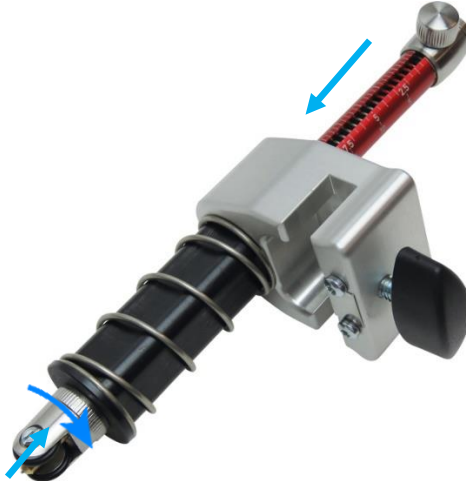


- Remove the spring.



- Choose the required spring (See separate manual.)
- Insert the plastic pin delivered with the adapter into the spring on the side of the marking.

- Insert the spring with the pin ahead into the grip.



- Insert the grip into the black telescope bar of the adapter.
- Screw the head onto the grip and fasten it.



- Turn the head clockwise until the wheels point in the direction of movement in relation to the grip.

7.3 Carry out scratch and mar resistance tests



Never touch any moving parts during operation.




The side panels (15) must always be mounted during operation.



Risk of injury: Never hold the sample by hand during operation. It has to be fixed with an appropriate means, e.g. double sided adhesive tape.




Scratch tests are carried out in machine mode „Applicator“ in moving mode „Single“. Go to the menu on the touchscreen -> select Setup, set the machine mode to „Applicator“, visible through an arrow  on the touchscreen.

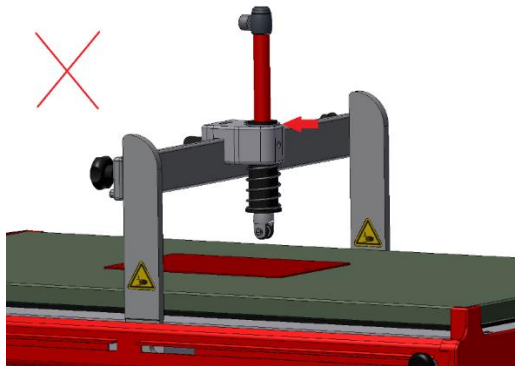
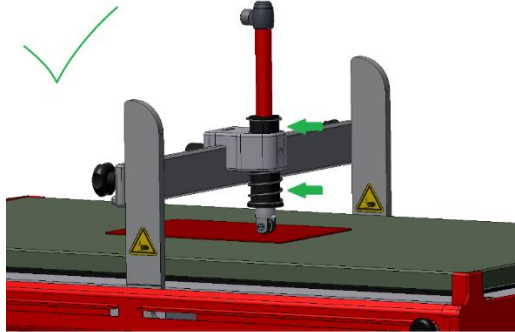
- Place the device on a solid, even surface.
- Level the apparatus using the included spirit level. To do so, place the spirit level on the sample tray and adjust the levelling feet (8) until the Proceq ZAA 2600 is levelled perfectly. The glass plate must be firmly in place.
- Place the sample.
 - For very thin samples use the glass plate with the glass side facing up.
 - For thicker samples use the glass plate with the printing blanket facing up.



In order to get straight scratch marks fix the samples with a double sided adhesive tape.

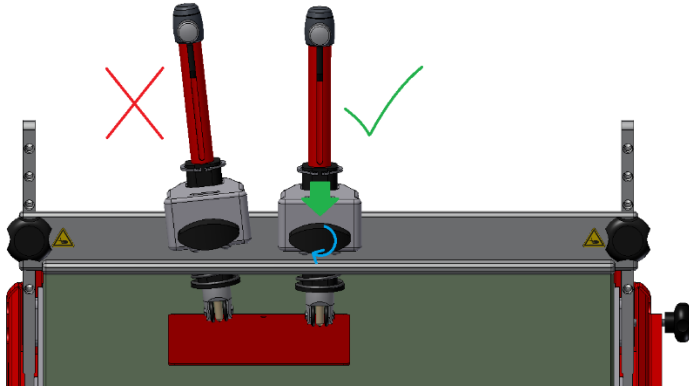
- Move the tool holder (18) either by tapping the symbol  or by hand to the back part of the sample.
- Pre-assemble the chosen scratching tool (see chapter 7.2 “Mounting the scratching and mar resistance sets” as from page 25).

- Adjust the height of the tool holder-bridge (4) with its height adjustment (6).



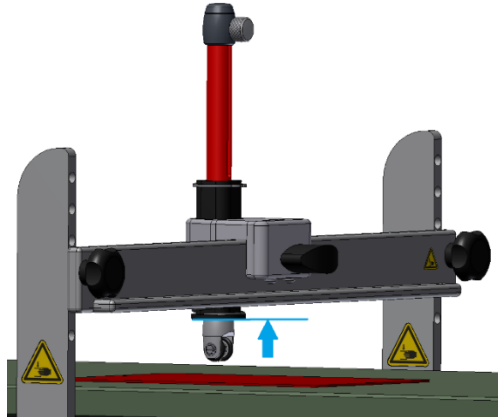
- ! The scratching tool has to bear on the wheels and must not be at the telescopic stop.
- ! Make sure that the tool holder-bridge (4) is mounted horizontally. It must not be tilted.


- Fix the scratching set onto the tool holder-bridge (4) and fasten it with the screw. The holder has to bear on the bridge horizontally.



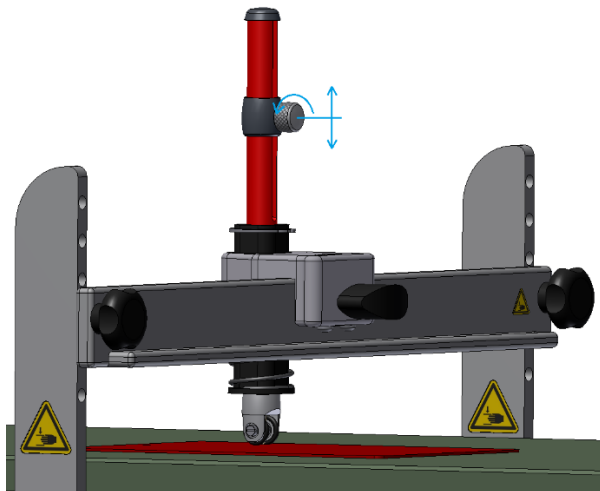
The holder has to be vertical when fixing it.


- If necessary, adjust the position of the scratching set above the sample by lifting the adapter and moving it on the tool holder-bridge (4).



- Press the „Zero“ symbol  on the touchscreen to set the start position.
Note: Do not zero directly at the start stop (1), but at least ca. 3 mm in front.

- Set the spring load.



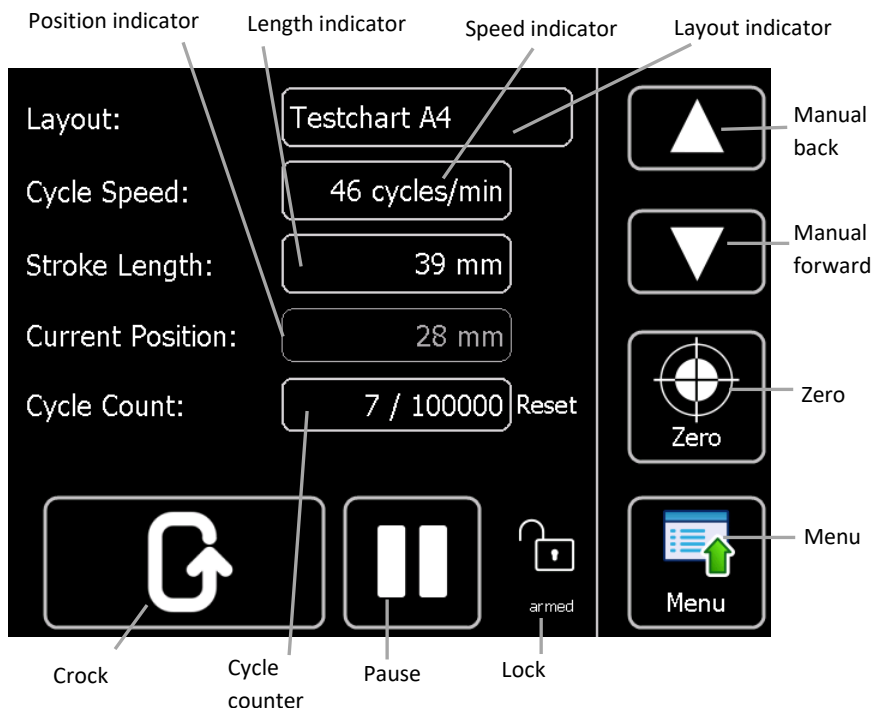
- Set the stroke length on the display (see chapter 8.1.8 “Setting the stroke length” on page 33).
- ⚠ Set the right scratching length: The testing head has to remain on the sample over the whole stroke length.
- ⚠ Check the correct fit of the scratching set before starting the procedure.
- ⚠ Do not lean over the unit during operation in order to avoid touching the tool holder (18).
- Start the scratching test by tapping on the symbol .
- Create the evaluation and test report according to the standard.

8 Operation and Menu



8.1 Main screen

The Proceq ZAA 2600 is equipped with a capacitive touch screen with a glass front. The touch screen is configured to allow operation with gloves up to 1 mm thickness.

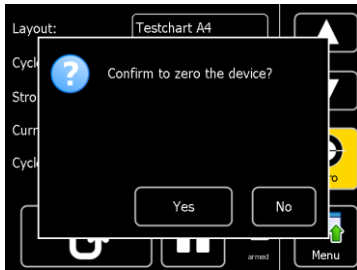
The most important settings can be accessed directly from the main screen. The menu is used for any additional settings.




8.1.1 Manual moving

The tool holder (18) can be moved using the „Manual forward“  and „Manual back“  buttons. If one of these buttons is pressed, the tool holder (18) starts to move slowly. If the button is held for more than a second, the speed will increase. Alternatively the tool holder (18) can also be moved by pushing it forward or backwards manually at the middle of the holder.


8.1.2 Zero the equipment



The current position of the tool holder (18) can be set to 0 by pressing the „Zero“ symbol . Confirm the appearing message with „yes“. Should this button be pressed accidentally during the procedure, you can abort the process by pressing “no”.


Note: Do not zero directly at the start stop (1), but at least ca. 3 mm in front.

8.1.3 Crockmeter tests

Pressing the „Crock“ symbol  starts the procedure. The meter counts the double strokes made. The crocking procedure stops automatically when the preset number of double strokes has been reached.


One double stroke equates to one forward and backward movement of the tool holder (18). Go to the menu on the touchscreen -> Choose setup and set the machine mode to „Crock / Scrub“.



8.1.4 Scratch and mar resistance tests

The scratching procedure starts when tapping the symbol „Applicator“ in moving mode „Single“ .

Go to the menu on the touchscreen -> select Setup, set the machine mode to „Applicator“ and the moving mode to “Single”.

8.1.5 Pause

The procedure interrupts when tapping the “Pause” symbol .



The procedure continues when tapping either the symbol “Crock”  or „Applicator“ in moving mode „Single“ .

8.1.6 Select layout

The layout indicator shows the name of the currently selected layout. A layout is a renameable memory slot storing speed and stroke length. This is especially useful for recurring tasks where the same speed and length are required again.



The current layout can be selected by tapping the layout field.

8.1.7 Setting the cycle speed

The double stroke speed (cycle speed) can be set by tapping the Speed field. A slider will appear on the right side of the touch screen to change the value. The value can also be changed by using the  and  button.

The preset double stroke speed will automatically be saved in the currently selected layout.

8.1.8 Setting the stroke length


The stroke length can be set by tapping the Length field. A slider will appear on the right side of the touch screen to change the value. The value can also be changed by using the  and  buttons.

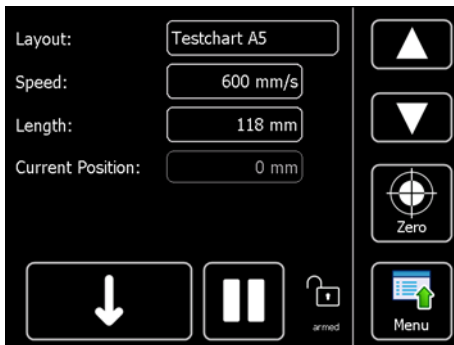
The preset stroke length will automatically be saved in the currently selected layout.

8.1.9 Position

The Position field shows the current position of the tool holder (18) relative to the previously defined zero position.

8.1.10 Menu

The menu can be opened using the „Menu“  button. Various settings can be changed from here.



If the device is equipped with the appropriate modification set, also other tests like crocking, scratching or applications can be carried out with the Proceq ZAA 2600 universal unit.


To carry out scratching tests the application mode has to be used.

To get back to the machine mode „Crock / Scrub“ choose „setup“ in the menu, then select machine mode „Crock / Scrub“.

8.1.11 Lock

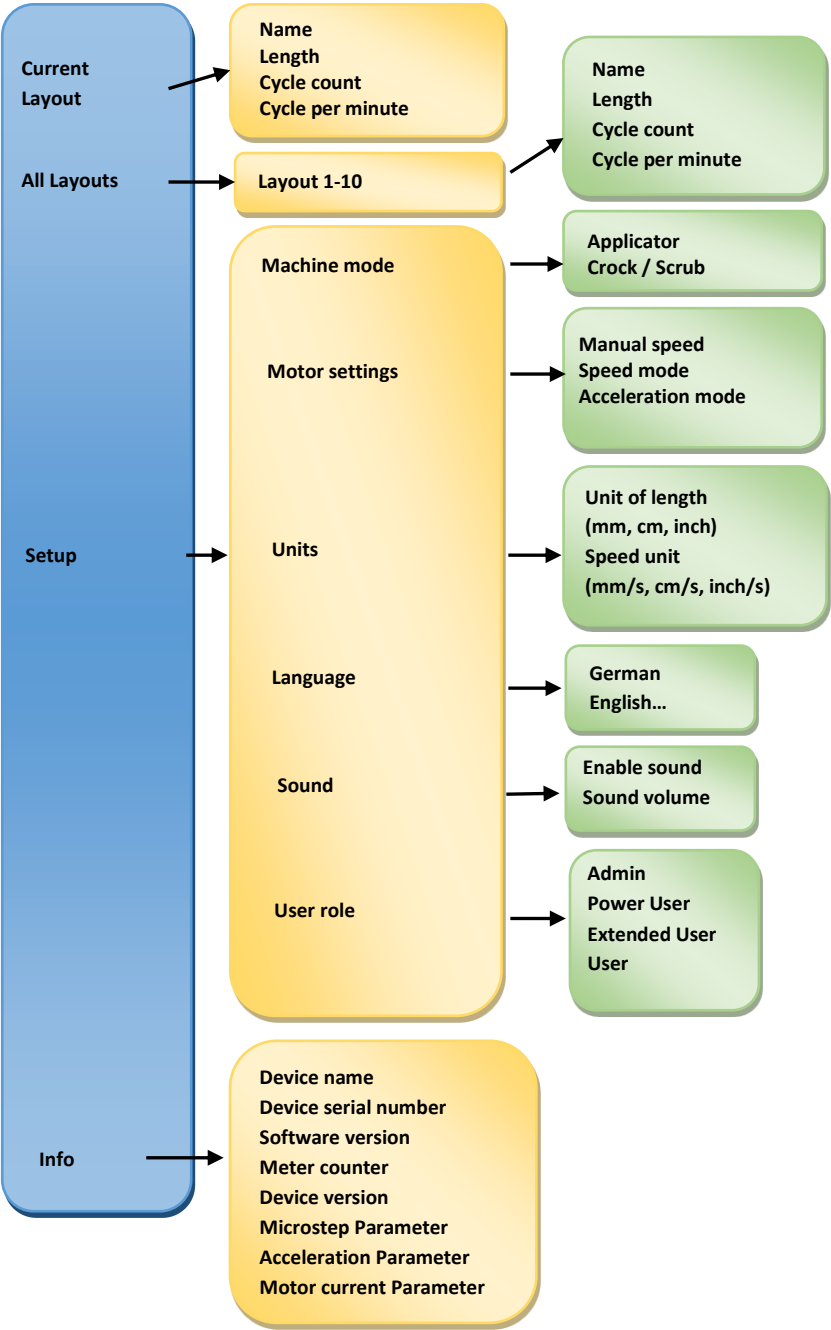
The lock blocks all movement commands of the tool holder (18). It can be activated and deactivated by tapping the lock button.

If the button is in the „armed“  setting, all functions are active.

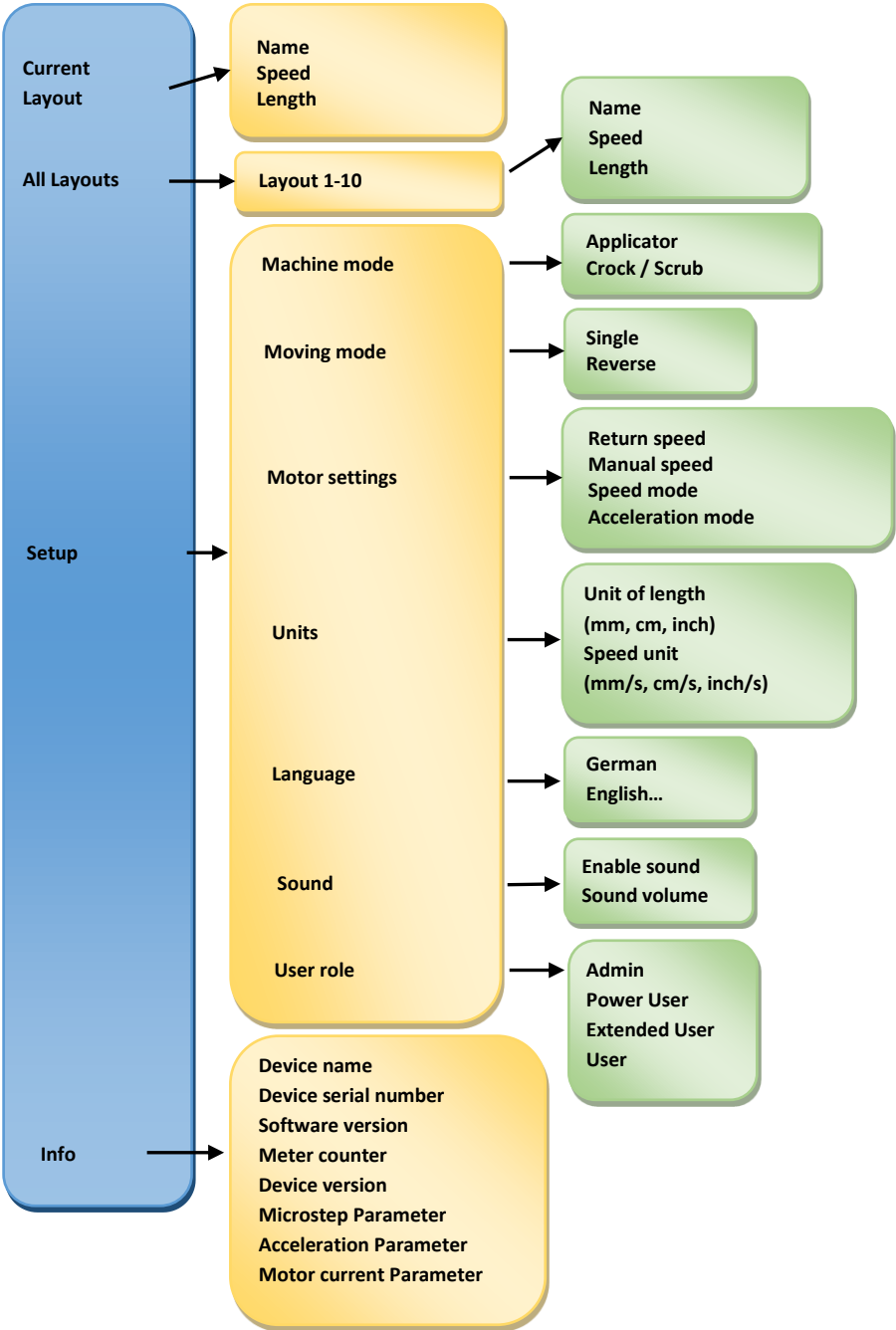
If the button is in the „locked“  setting, the functions „Crock“, “Manual forward” and “Manual back” are locked.

The „locked“ setting prevents the moving of the tool holder (18) when touching the screen accidentally.


8.2 Menu structure in Crock / Scrub mode




8.3 Menu structure in Application mode



Open the menu by pressing the „Menu“  button.

Go back a level by pressing the „Back“  button.

Return to the main screen by pressing the „Home“  button.

8.4 Using layouts

Layouts are memory slots with a custom set name which store a saved application profile (cycle speed and stroke length). Using layouts for recurring tasks, these parameters can easily be saved and recalled at a later point.

There are 10 layout slots available. Layout settings can be changed as follows.

8.4.1 Selecting a layout

The current layout can be selected by tapping the layout field on the main screen.



8.4.2 Editing the selected layout

To edit the currently selected layout, choose „Selected layout“ in the menu. The parameters „Name“, „Speed“ and „Length“ can be adjusted by tapping the values, entering the desired adjustment and confirming it with “OK”.




The image shows three side-by-side screenshots of the editing interface. Each screen has a title bar with 'Cancel' and 'OK' buttons. The first screen is for 'Name', showing a text field with 'Testchart A5' and a QWERTY keyboard. The second screen is for 'Speed', showing a text field with '500.0' and a numeric keypad. The third screen is for 'Length', showing a text field with '118.0' and a numeric keypad.

Return to the main screen by tapping the „Home“  button.


The speed and length settings can also be changed directly from the home screen. To adjust the values tap on the speed or the length field and either use the slider or the  and  buttons. These settings will be saved automatically in the selected layout.

8.4.3 View and edit all layouts



To show all existing layouts, select „All layouts“ in the menu . A list of all saved layouts will be displayed. The active layout will be shown as “selected”.

To change the name or settings of a layout, tap the relevant entry in the list. The values can then be changed in the same way as described in chapter 8.4.2 “Editing the selected layout” on page 37.

8.5 Motor settings

Various settings for the drive motor can be changed via „Settings“ -> „Motor settings“ in the menu .

8.5.1 Manual speed

Manual drive speed sets the speed at which the tool holder (18) moves when using the „manual back“  or „manual forward“  buttons.

8.5.2 Speed mode

There are two speed modes:

- Normal 0 – 300 mm/s:** The normal speed mode is appropriate for most uses.
- Schnell 0 – 600 mm/s:** The fast mode is for procedures requiring high drawing speed.

If not specifically required otherwise, it is recommended to use the „Normal“ speed mode for the procedures.

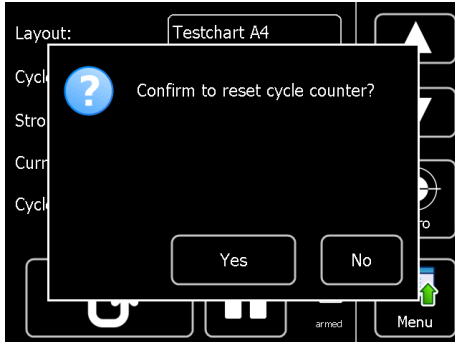
8.5.3 Acceleration mode

There are three different acceleration modes:

- Normal:** The normal mode is appropriate for most uses.
- Increased:** The increased acceleration is for uses where the top speed of the tool holder (18) needs to be reached quickly.
- High:** The high acceleration mode is only appropriate for uses with very high speed, requiring the top speed of the tool holder (18) to be reached as fast as possible.
High acceleration mode can lead to a jerk at the start of the process.

If not specifically required otherwise, it is recommended to use the „Normal“ acceleration mode for most procedures.

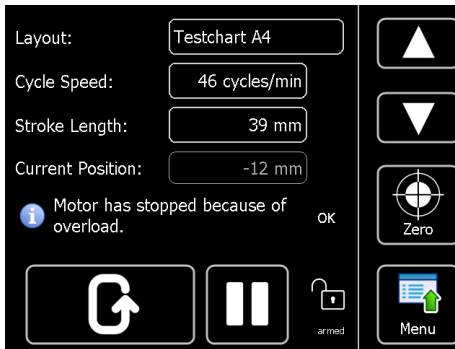
8.6 Reset




With the „Reset“ button the cycle counter (double stroke counter) will be reset. This cannot be undone. If the „Reset“ button has been tapped this message appears which has to be either confirmed or rejected.

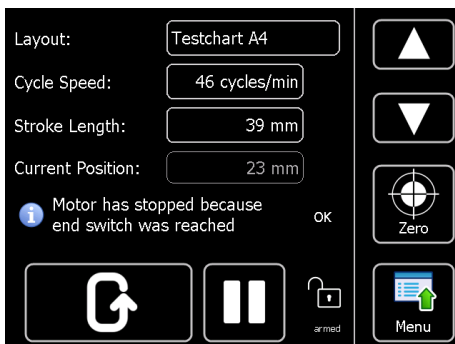
8.7 Status messages

8.7.1 Overload




"Motor has stopped because of overload. "This message is only an information, you can tap either on "OK" or move forward with . Should the message be displayed repeatedly during a procedure, the resistance is probably too high. A possible solution could be to increase the acceleration mode. Select "Setup" and "Motor Settings", then "Acceleration mode" and tap „Elevated“ in the menu.

8.7.2 End switch

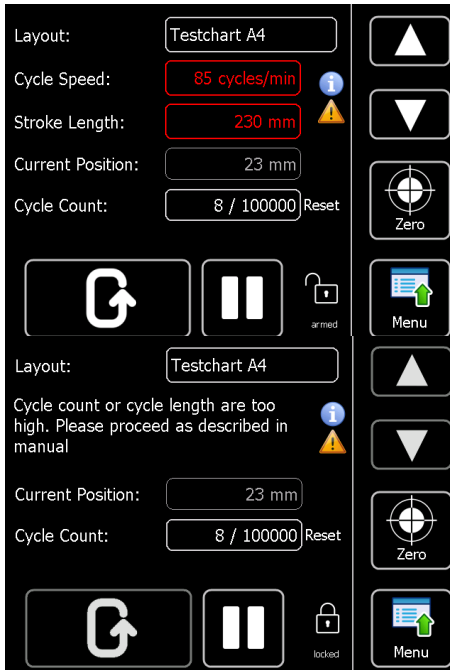



"Motor has stopped because end switch was reached". The preset stroke length exceeds the position of the end switch. It is recommended to always move the end stop (2) completely to the front and the start stop (1) completely to the back part of the device.

Solution: Move the end stop (2) completely to the front of the device and press „OK“ or „Scrubbing“ 

afterwards.

8.7.3 Cycle speed and stroke length cannot be set



The fields for cycle speed and stroke length are marked red. After tapping on the information symbol  a message will appear that either the cycle counts or the cycle speed are too high.

Solution: The motor cannot reach the preset number of double strokes with the preset stroke length and speed. Either the double stroke (cycle) speed or the stroke length has to be reduced. Alternatively, the acceleration mode or speed mode of the motor can be adjusted too. For this see chapter 8.5 "Motor settings" on page 38.

8.7.4 The motor is overheated



If the motor of the unit is overheated, this message appears and the current action will be interrupted. Confirm the message with OK, the device switches off. Let the device cool down before switching it on again. Arrange for enough ventilation around the device. The unit must not be operated outside of the allowed temperature range.

8.7.5 Lubrication the guide rods



After a service performance of about 2'000 km a message will appear at start-up reminding you of lubrication the guide rods. Carry out the lubricating as described in chapter 12.3 "Lubrication of the guide rods" on page 46.

To switch off the reminder until the next interval, choose "Do not show this message again" and close with "OK".

8.7.6 Emergency stop function

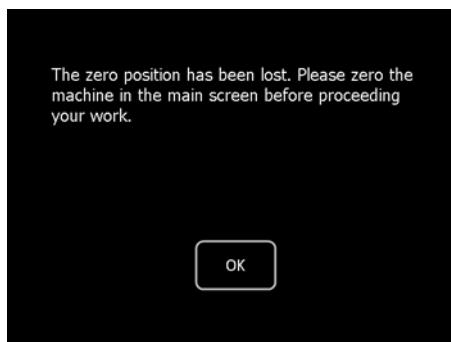
Pressing the Emergency Stop button (10) immediately stops the motor. The power supply of the motor is interrupted so that the tool holder (18) can be moved by hand.



The touchscreen and control unit of the Proceq ZAA 2600 remain active since only the power supply is interrupted.

To unlock the Emergency Stop button (10), turn it counterclockwise.

The following message will be displayed after unlocking the Emergency Stop (10):



The Zero position must be reset. Move the tool holder (18) to the desired starting position and press the „Zero“



button.

9 Converting from crockmeter into basic unit

Thanks to its modular construction, the automatic universal unit can be equipped with different kits for carrying out applications, washability, crocking and scratch resistance tests.



Before mounting an optional modification set, the device has to be converted to basic unit.



Always unplug the power cable before assembling and/or converting the unit.

- Push the start stop (1) and the end stop (2) to the centre of the device and remove them afterwards.
- Loosen the fixing screws of the side panels (16) and remove the side panels (15).
- Loosen the Allen screws of the tool holder-side part (5) and remove the tool holder (18).
- Remount the side panels (15), the one with slit on the right side, the other one on the left side.
- Remount the screws of the start stop (1) and end stop (2).
- Check if the four rubber feet are mounted.



Basic unit

10 Converting from basic unit into crockmeter



Always unplug the power cable before assembling and/or converting the unit.

- Check that the four rubber feet are mounted.



- Place the glass plate (3) in the unit with the required side facing up.



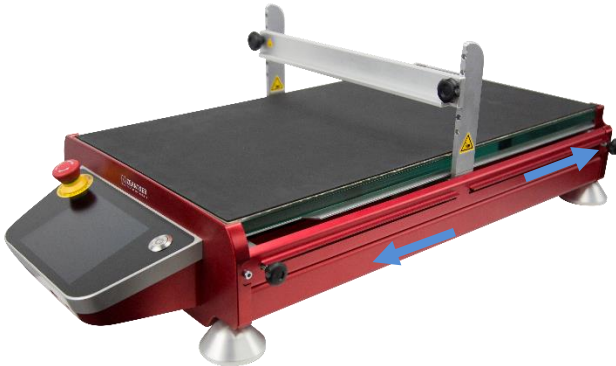
- Remove the start stop (1) and the end stop (2).
- Loosen the fixing screws of the side panels (16) and remove the side panels (15).



- Mount the tool holder-bridge (4) and the tool holder-side parts (5).



- Remount the side panels (15), the one with slit on the right side, the other one on the left side.
- Remount the start stop (1) and the end stop (2).
- Move the start stop (1) backwards and the end stop (2) forward as far as possible. Fasten their screws.



- ! To protect persons and the apparatus, proper care must be taken when lifting or carrying it. It is recommended to hold and carry the Proceq ZAA 2600 on both sides of the housing. Always remove the glass plate before lifting or tilting the device.

11 Turning the glass plate


- Switch off the device.
- Push the tool holder (18) to the back.
- Carefully lift the glass plate (3) at the front edge and pull it out of the apparatus.
- Turn the glass plate (3) over and carefully place it back into the holder with the required side facing up.

12 Maintenance and cleaning

12.1 Maintenance and cleaning work that can be carried out by the user

Only the following maintenance and cleaning work shall be carried out by the user:

- Outer cleaning of the apparatus (see chapter 12.2 on page 45)
- Periodical lubrication of the guide shafts (see chapter 12.3 on page 46)
- Replacing of the fuse (see chapter 12.4 on page 47)
- Inspection (see chapter 12.5 on page 47)

 All other maintenance and repair work shall only be carried out by **Proceq SA** or your authorized Proceq agent otherwise all guarantee and liability claims are void.


12.2 Cleaning


In order to ensure a perfect function, the Proceq ZAA 2600 should be kept as clean as possible. Remove eventual stains caused by friction media, coating materials or adhesives immediately before they can dry. Later they can often only be removed with difficulty.

For **cleaning of the apparatus** use commercially available cleaning agents such as cleaning agent for glass, benzine, acetone. Do not use strong acids or alkaline liquids!

For **cleaning of the printing blanket** use only cleaning agents which do not affect the printing blanket. Unsuitable for this purpose are solvents containing ketone such as acetone, or nitro-cellulose diluents.

 The edge of the printing blanket must not get wet.

 Before cleaning the Proceq ZAA 2600, always switch off the apparatus and unplug it. Never immerse the apparatus in water or other liquids: Danger of short circuit.

 While cleaning, take care that no cleaning liquid penetrates the interior of the apparatus. The function of electrical or mechanical components could be impaired.



If the device has to be disinfected, do not use disinfectants that contain sodium hydroxide.

12.3 Lubrication of the guide rods

After a service performance of about 2'000 km a message will appear at start-up reminding you of lubricating the guide rods. The guide rods have to be lubricated latest if this message appears or at least once per year.



Before lubricating the guide rods of the Proceq ZAA 2600, always switch off the apparatus and unplug it.



No oil shall be sprayed into the apparatus. The function of electrical or mechanical components could be impaired.

For lubricating proceed as follows:

- Remove the glass plate (3) (see chapter 11 "Turning the glass plate" on page 45).
- Loosen the fixing screws of the side panels (16) and remove the side panels (15).
- Turn the apparatus carefully to one side so that the side opening of the cover becomes accessible.
- Put some drops of sewing machine oil on your finger and spread it over the whole length of the guide rods.
- Repeat this for the other side of the apparatus.
- Adjust the start stop (1) at the very beginning and the end stop (2) at the very end and move the tool holder (18) back and forth several times, so that the oil gets evenly distributed over the whole length of the rods.
- Remount the side panels (15) and replace the glass plate (3).

12.4 Replacing the fuse

If the apparatus cannot be switched on this could be due to a defect fuse. You can replace the fuse yourself by opening the fuse holder (13) on the back of the apparatus between the main switch (14) and the power supply (12) carefully using a screw driver or a similar tool.



Before replacing the fuse of the Proceq ZAA 2600, always switch off the apparatus and unplug it.



Replace the microfuse (14) only by an equivalent fuse of the same type with the same specification. Observe that the inscription at the connection caps of the fuse corresponds to one of the following designations:

- T 0.8 A / 250 V
 - T 800 mA / 250 V
 - T 800 / 250 V.
-
- Clamp the new fuse into the fuse holder (13) and put it back in its place.

Should it still be impossible to switch on the apparatus, please contact **Proceq SA** or your authorized Proceq agent.

12.5 Inspection

The instrument should be checked for proper condition by a qualified electrician at an interval of 2 years. Alternatively, this test may also be performed by Proceq SA.

13 Technical specifications

Traverse speed:	1-600 mm/s, (0.04-23.62") up to 100 double strokes / min
Resolution:	1 mm/s
Traverse speed accuracy:	±1 %
Touchscreen-display:	5.7", TFT (LCD) colour, VGA resolution LED backlight
Material:	Housing: red anodized aluminium
Dimensions device (LxWxH):	695 x 355 x 210 mm (27.36 x 13.98 x 8.27")
Dimensions glass plate (LxWxH)	553 x 300 x 15 mm (21.77 x 11.81 x 0.59")
Weight without glass plate:	14 kg (30.86 lbs) (without friction finger sets)
Weight with glass plate:	20.4 kg (44.97 lbs) (without friction finger sets)
Stroke length:	1-393 mm ± 2 mm (0.04 – 15.47 ± 0.08")
Width of the testing lanes:	300 mm (11.81")
Max. dimensions sample plate:	550 x 300 x 72 mm (21.65 x 11.81 x 2.83")
Power supply:	115 VAC –230 VAC ± 10%, 50 Hz / 60 Hz
Power consumption:	108 W
Fuse power supply:	0.8A / 250 VAC delay-action
Standards for scratch tests:	DIN 55656, DIN SPEC 91064
Standards for crockmeter tests:	DIN 55654, DIN EN 13523-11, ASTM D6279, EN ISO 105-X12, AATCC Test method 8-2007 is based on: ASTM F1319

Ambient conditions for operation

Temperature range:	5°C to +45°C (41 °F to 113 °F)
Relative humidity:	20% to 80%, no condensation
Sunlight:	Do not expose to strong sunlight for long period

Ambient conditions for transport and storage:

Temperature range:	-20°C to +85°C (-68 °F to 185 °F)
Relative humidity:	20% to 80%, no condensation
Sunlight:	Do not expose to strong sunlight for long period

General:

Excess voltage category: II

Degree of soiling: 2

Protection class: 1

Altitude: up to 2.000 m above sea level

For indoor use only.

Glossary

A	
Acceleration mode	38
Ambient condition	
Operation	48
Ambient conditions	
Storage	48
Transport	48
Assembly	
Crockmeter	15
Friction finger set A	19
Friction finger set B	20
Friction finger set C	21
Friction finger sets	18
Assembly and starting up	15
C	
Cleaning	45
Converting	
from basic unit into crockmeter ..	43
from crockmeter into basic unit ..	42
Crockmeter tests	18, 32
Carry out	22
Preparation	18
D	
Damages during carriage	9
Device	
Delivery	9
Description	6
Overview	13
Standard delivery	10
Startup	16
Switching off	16
Turning on	16
Disassembly for transport	17
E	
Emergency stop function	41
End switch	39
Exclusion of liability	5
Extent of delivery	10
F	
Features	6
Friction finger sets	
Assembly	18
Fuse	
Replacing	47
G	
Guide rods	
Lubrication	46
I	
Inspection	47
Instrument	
Delivery	9
Description	6
Overview	13
Shutdown	16
Standard delivery	10
Switching on	16
L	
Layouts	
All layouts	37
Editing	37
Selecting	37
Using	37
Lock	34
Lubrication of the guide rods	46
M	
Main screen	31
Maintenance and cleaning	45
Manual moving	31
Manual speed	38
Menu	33
Menu structure	

Application mode	36
Crock / Scrub mode	35
Motor settings	38
Mounting	
Friction finger set A	19
Friction finger set B	20
Friction finger set C	21
Friction finger sets	18
Scratching and mar resistance sets	25

O

Operation and Menu	31
Options	
Crockmeter	12
Crockmeter tests	10
Scratch and mar resistance tests	12
Overload	39

P

Pause	32
Position	33

R

Replacing the fuse	47
Reset	39
Double stroke counter	39

S

Safety information	6
Scratch and mar resistance tests . 25, 32	

Carry out	27
Preparation	25
Select layout	32
Setting	
Cycle speed	33
Stroke length	33
Shipment	9
Shutdown	16
Speed mode	38
Standard delivery	10
Startup	16
Status messages	
Cycle speed cannot be set	40
End switch	39
Lubrication the guide rods	41
Motor is overheated	40
Overload	39
Stroke length cannot be set	40
Storage	48

T

Technical specification	48
Temperature	
Operation	48
Transportation damages	9
Turn on	16
Turning off	16
Turning the glass plate	45

Z

Zero the equipment	32
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