SCREENING EAGLE | proceq

ZAA2300

Versions

ZAA2300, ZAA2300.F, ZA2300.FF
ZAA2300.H, ZAA2300.FH, ZA2300.FFH

Automatic Film Applicator

Instruction Manual

Document Information

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Revision History

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3.0	Sep 21, 2021	PEGG	Released Document
3.1	Aug 4, 2022	PEGG	Correction swivelling holders

Content

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The features described in this instruction manual represent the complete technology of this instrument. These features are either included in the standard delivery or available as options at additional costs.

Illustrations, descriptions as well as the technical specifications conform to the instruction manual at 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 to update.

Some of the images shown in this instruction manual are of a pre-production model and/or are computer generated; therefore the design/features on the final version of this instrument 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 references to errors.

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.

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 product on both sides of the housing. Always remove the glass plate / heating plate before lifting or tilting the device.

1 Safety information

1.1 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.

1.2 Safety notes and hints

It is strictly forbidden to open the housing of the ZAA 2300. 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.

Only connect the ZAAA 2300 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 cable with protective earth conductor. Removable power cables must not be replaced by an insufficiently rated power cable. In the application "heatable application" together with heating plates, only power cables with correspondingly increased temperature resistance (≥155 ° C) may be used as supply cable. Only use the power cable provided by the manufacturer.

Never touch the hot plate, always wait until the heating plate has cooled.

Only coating materials or products with a flash point >250 °C can be applied.

Materials with a combustion point <250 °C must not get in touch with the heating plate.

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

Heating of substances can lead to risks of explosion, implosion or the release of toxic or flammable gases. If heating of a product can lead to the release of hazardous substances, it is necessary to use an appropriate extraction system.

During operation the distance to walls and other objects must be at least 10 cm.

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

The Automatic Film Applicator ZAA 2300 is constructed in accordance with the state of the art and is safe in use. However, there is always risk when the instrument is handled improperly or otherwise as intended by the manufacturer.

ZAA 2300 is exclusively intended for the preparation of coatings. Any other use 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 ZAA 2300 must have read and understood this instruction manual in its entirety, in particular the safety precautions and warnings.

Unauthorized modifications and changes of the ZAA 2300 are not permitted.

- Before lifting or moving the apparatus, the glass plate / heating plate must be removed to reduce the total weight. Tilting the device can lead to falling out of the glass plate.
- All maintenance and repair not explicitly allowed and described in this, shall only be carried out by Proceq SA or your authorized agent, failure to comply voids warranty.
- **Proceq SA** refuses all warranty and liability claims for damages caused by usage of the ZAA 2300 in combination with **non-original accessories**, or accessories from 3rd party suppliers.
- All local safety regulations apply for the operation of the ZAA 2300.

The following warning symbols can be seen on the device:

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

Risk of burning on hot surfaces. Touching such marked surfaces is prohibited.

Danger of electric shock.

Risk of inflammation of substances through heat (heating plate).

2 Product Description

Automatic laboratory equipment for accurate and reproducible application of coating materials, adhesives and similar products with almost all film applicators.

2.1 Applications and area of use

- Laboratory apparatus for the paint, printing and adhesive industries, as well as for research and development and the chemical industry in general.
- For quality control and for research and development.
- For the preparation of uniform layers independent from the individual user.

In particular, this apparatus has the following features:

- Multifunctional use with reversible, double sided glass plate: on one side printing blanket for wire-bar applicators and profile applicators, on the other side glass surface for other applicators, to be turned simply and without tool.
- Adjustable application area with adjustable start and stop positions.
- Also suitable for use with different applicators up to the maximum outer width of 300 mm (11.81”), profile rods and wire-bar applicators with a minimum length of 340 mm (13.39”) and a maximum diameter of 13.5 mm (0.53”) in the support area.
- Also suitable for thick substrates up to 11 mm (0.43”).
- Optional precision-vacuumplate for fixing thin substrates of different sizes; the object to be held will be fixed absolutely plane by the suction power.
- Optional modification set equipped with isolation plate for use with heatable precision-vacuumplates or heating plates.
- Easy to handle.
- Reliable results.

2.2 Introduction

Films with constant and well-defined thickness are a precondition for testing and analysis of coating materials and coatings. The properties of these materials and films are dependent on the film thickness.

It is important to notice, that the maximal achievable wet film thickness is not equal to the gap height selected on the application for physical reasons.

The following can serve a guideline for the selection of the gap height:

Gap height	Wet film thickness
15 µm – 100 µm	Approx. 50% of the gap height
100 µm – 300 µm	Approx. 60% of the gap height
300 µm – 500 µm	Approx. 80% of the gap height
More than 500 µm	Up to 90% of the gap height

For the selection of the appropriate gap height please also consider that the dry film thickness can be less than the wet film thickness. This is depending on the weight content of solids.

Various applicators with variable an fix gap heights are available as accessories.

2.3 Versions

The ZAA2300 is available in various configurations: 3 different speeds with or without heatable plate.

Speed	Standard	Heatable
Slow	ZAA2300	ZAA2300.H
Medium	ZAA2300.F	ZAA2300.FH
Fast	ZAA2300.FF	ZAA2300.FFH

2.4 Standard delivery

The following parts are included in the delivery:

- Automatic film applicator incl. power supply cable and material for mounting
- reversible, double sided glass plate: printing blanket and glass surface
- 4 rubber feet
- polyester mat
- weight lifter ACC1436 (set of 2)
- spirit level
- power cable
- Allen key (2.5 mm and 3 mm)
- Certificate of manufacturer
- Instruction manual

2.5 Accessories for all ZAA2300

	Description	
ACC121 ACC211	Precision-vacuumplates with a series of holes of 1 mm (0.04”) Precision-vacuumplates with a series of holes of 0.5 mm (0.02”)	
ACC039 ACC122	Vacuum pumps with hose – 230 V Vacuum pumps with hose – 115 V	
ACC378 ACC586	Profile rod Wire-bar film width: approx. 320 mm (12,6”), total length: 405 mm (15,94”), with 1 wet film thickness according to your choice	
ACC1348	fixing unit for profile rods and wire-bar applicators	
ZUA2000	Film applicators up to a maximum film width of 300 mm (11.81”)	
	Calibration and Certification ZAA 2300 (incl. Calibration Certificate)	

2.6 ZAA 2300.H for “Heatable Application”

Depending on the properties of the material to be applied, the plate has to be heated in order to achieve optimal results.

The ZAA 2300.H for heatable applications is suited for such materials.

The ZAA 2300.H consists of a ZAA 2300 and a modification set and a heatable plate. Diese Heizplatte ist auch als Präzisions-Vakuumplatte erhältlich:

ACC1576 modification set "Heatable Application" for ZAA 2300

In combination to the ACC1576 modification set "Heatable Application" either a heatable precision-vacuum plate or a heating plate can be selected.

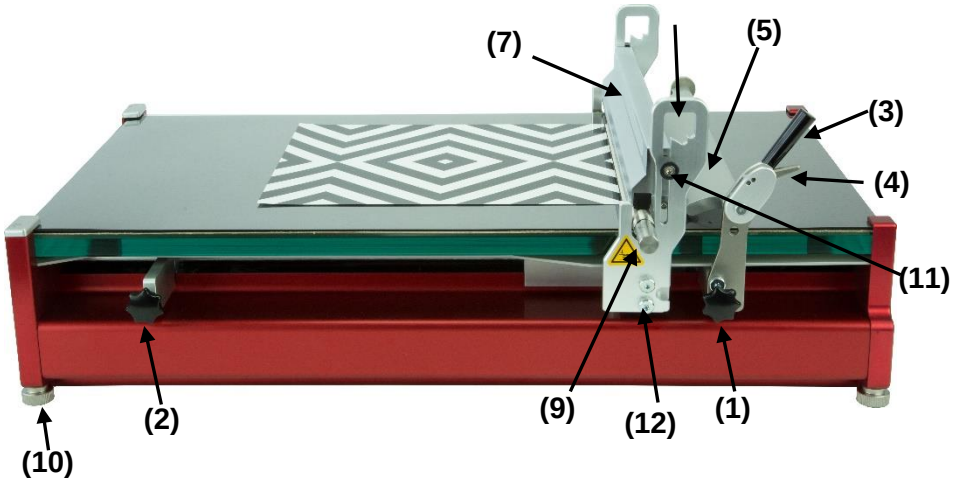
All available options are listed below:

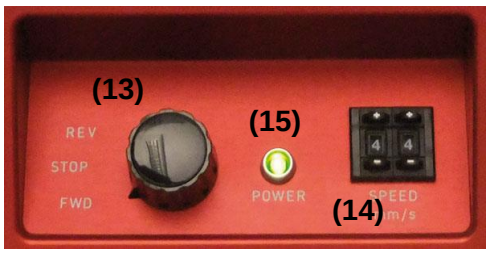
Precision-vacuumplates, heatable up to 150 °C		
ACC1505.230V	with holes of 1 mm (0.04”), 230 V	
ACC1505.115V	with holes of 1 mm (0.04”), 115 V	
ACC1509.230V	with holes of 0.5 mm (0.02”), 230 V	
ACC1509.115V	with holes of 0.5 mm (0.02”), 115 V	
Heating plates for temperature up to 150 °C		
ACC1477.230V	Version for 230 V mains supply	
ACC1477.115V	Version for115 V mains supply	

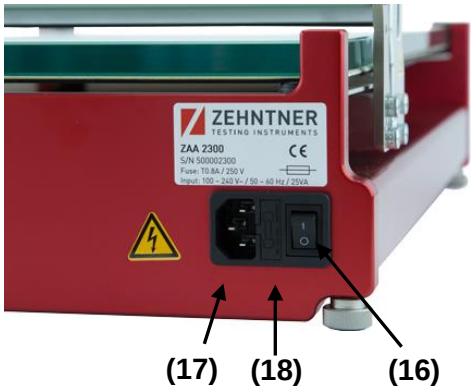
Proceq SA refuses all warranty and liability claims for damages caused by usage of the ZAA 2300 in combination with **non-original accessories**, or accessories from 3rd party suppliers

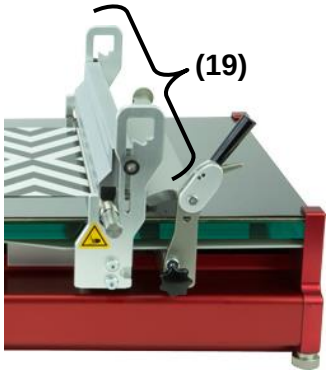
3 Device overview

3.1 ZAA2300



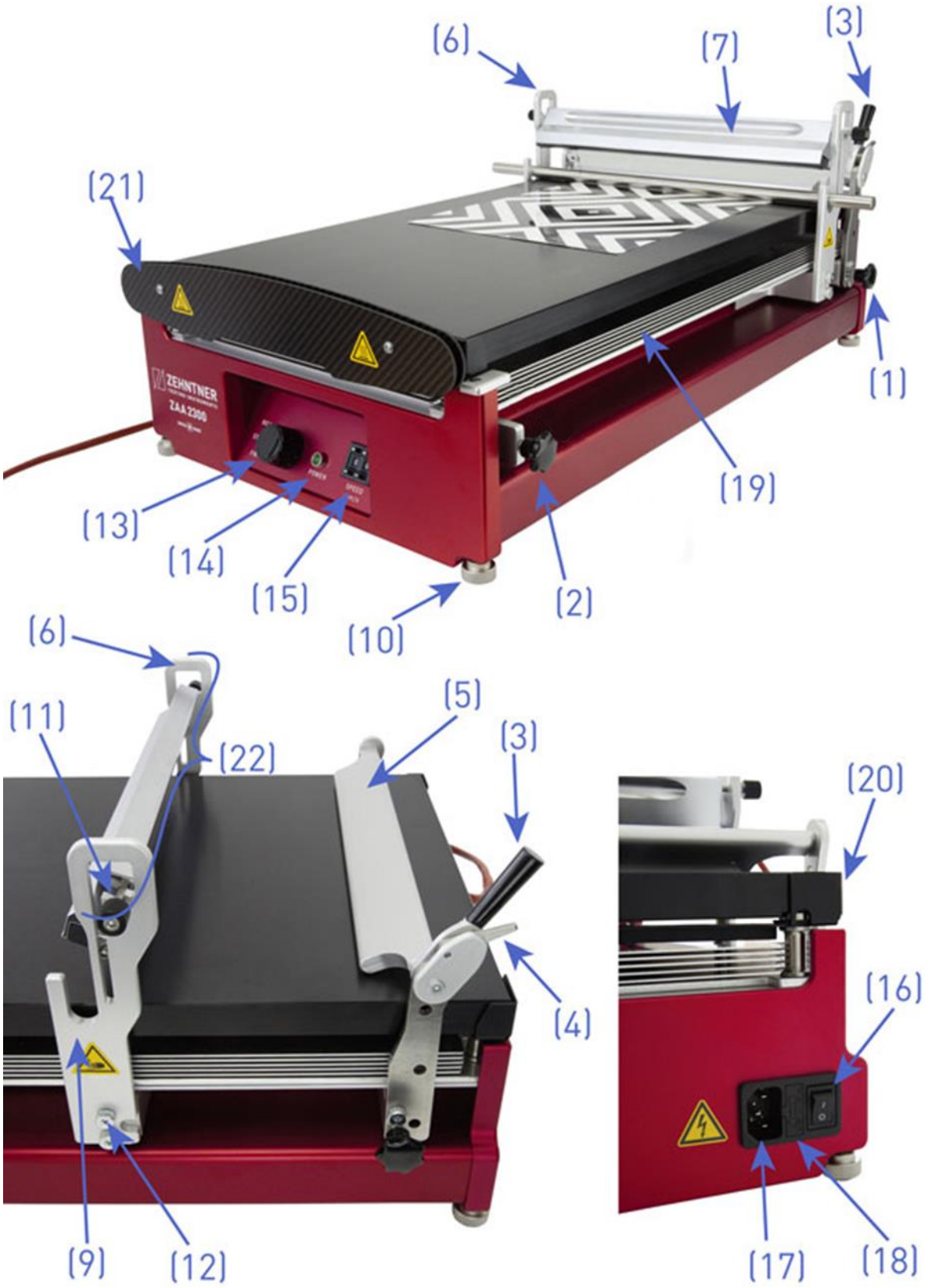


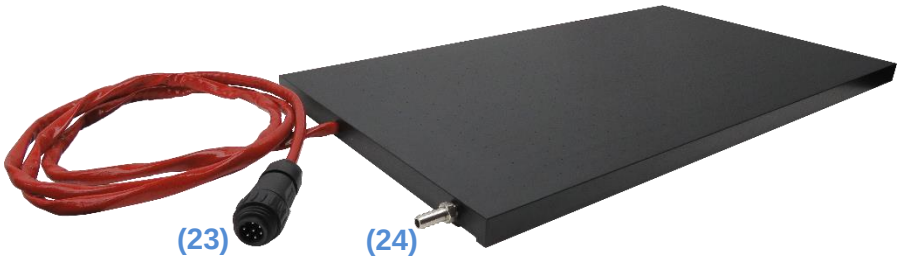




1. Start stop
2. End stop
3. Clamping grip
4. Release lever
5. Clamping device for the substrate
6. Lifting and lowering device for weight (7)
7. Weight
8. Not used
9. Holding device for wire-bars and profile rods
10. Levelling feet
11. Knurled screw
12. Fixing screw of the holding device
13. FWD-STOP-REV button
14. SPEED buttons
15. Operation light POWER
16. Main switch
17. Power supply 100 V – 240 V / 50 Hz – 60 Hz
18. Delay action fuse 0.8 A / 250 V
19. Drawing unit

3.2 ZAA2300.H





1. Start stop
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4. Release lever
5. Clamping device for the substrate
6. Lifting and lowering device for weight (7)
7. Weight
8. Not used
9. Holding device for wire-bars and profile rods
10. Levelling feet
11. Knurled screw
12. Fixing screw of the holding device
13. FWD-STOP-REV button
14. SPEED buttons
15. Operation light POWER
16. Main switch
17. Power supply 100 V – 240 V / 50 Hz – 60 Hz
18. Delay action fuse 0.8 A / 250 V
19. Isolation plate
20. Back heating plate holder
21. Front heating plate holder
22. Drawing unit
23. Temperature controller connection
24. Hose connection for vacuum

4 Assembly and starting up

4.1 Initial assembly

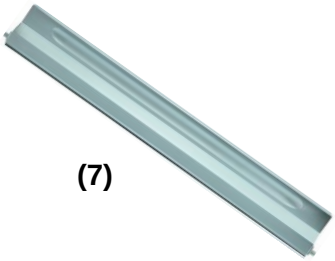
Before the first use the apparatus has to be assembled:

4.1.1 ZAA2300

1. Place the device on a solid, even surface at its intended location. Loosen the start stop (1).
2. Make sure that the four black rubber feet are mounted.
3. Open the clamping device (5), by pressing the release lever (4) and the clamping grip (3) together until you hear a click, then tilt the clamping grip (3) backwards. The clamping device (5) can be moved to the back at the same time.

4. Place the glass plate into the device with the required surface up. Use the printing blanket when working with a wire-bar applicator or profile rod, the glass surface when working with a gap applicator.

5. Insert the weight (7) into the guides of the holding device (9) with the black rubber part facing forward as shown below.



6. Rotate the weight (7) so that the black rubber part faces down, then fix it with the two knurled screws (11).

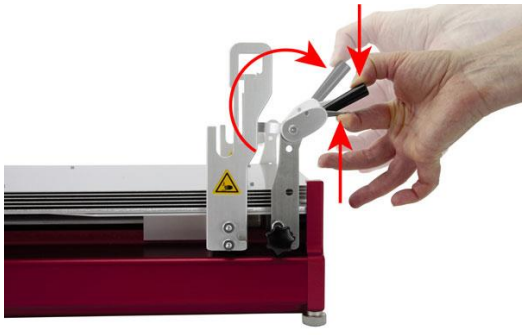
7. Level the apparatus using the included spirit level. To do so, place the spirit level and adjust the levelling feet (10) until the ZAA 2300 is levelled perfectly. The glass plate must be firmly in place.

4.1.2 ZAA2300.H

Before the first use the apparatus has to be assembled:

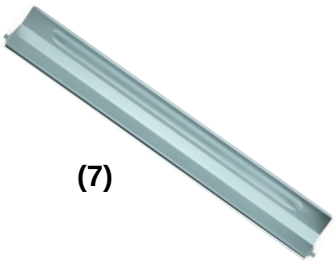
1. Place the device on a solid, even surface at its intended location. Loosen the start stop (1).

2. Open the clamping device (5), by pressing the release lever (4) and the clamping grip (3) together until you hear a click, then tilt the clamping grip (3) backwards. The clamping device (5) can be moved to the back at the same time.



3. Insert the heatable precision-vacuumplate or the heating plate by first guiding the cable under the clamping device (5).

4. Insert the weight (7) into the guides with the black rubber part forward-facing first one side of the weight then the other as shown below.



(7)

5. Rotate the weight (7) so that the black rubber part faces down, then fix it with the two knurled screws (11).

(11)

6. Connect the ACC754 Temperature Controller as described in the separate instruction manual.

7. Level the apparatus using the included spirit level. To do so, place the spirit level and adjust the levelling feet (10) until the ZAA 2300 levels perfectly. The plate must be firmly in place.

To protect persons and the apparatus, proper care must be taken when lifting or carrying it. It is recommended to hold and carry the ZAA 2300 on both sides of the housing. Always remove the glass plate / heating plate before lifting or tilting the device.

4.2 Disassembly

To prevent transport damage, the weight (7) and the glass plate / heating plate have to be removed:

4.2.1 ZAA2300

1. Loosen and remove the knurled screw (11) to remove the weight (7). First turn the weight upwards by 90 ° and – in reversed order as at the assembly - first take one side of the weight then the other out of the guides.
2. Remove the glass plate.
3. Slide the clamping device (5), the drawing unit (19) and both stops (1 & 2) to the middle of the device.
4. Only transport the device in its original packaging.

Disassembled device before and after transport:

4.2.2 ZAA2300.H

To prevent transport damage, the weight (7) and the glass plate / heating plate have to be removed:

1. Loosen and remove the knurled screw (11) to remove the weight (7). First turn the weight upwards by 90 ° and – in reversed order as at the assembly -first take one side of the weight then the other out of the guides.
2. Remove the glass plate / heating plate.
3. Slide the clamping device (5), the drawing unit (22) and both stops (1 & 2) to the middle of the device.
4. Only transport the device in its original packaging

Disassembled device before and after transport:

(11)

4.3 Switching on

- Make sure that the apparatus is connected to a power socket with the supplied power cable (17).
- Turn the FWD-STOP-REV button (13) to the STOP position.
- Switch on the main switch (16) at the back of the apparatus. The operation light (15) glows green, the device is ready to use.
- Switch off the device after the last application at the main switch (16). The operation light (15) extinguishes, the device is off.

4.4 Switching off

- Switch off the device after the last application at the main switch (16). The operation light (15) extinguishes, the device is off.

5 Operation: Film Application

5.1 Preparation

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

- which type of applicator you will be using
- which substrate you will be using
- which base plate you will be using
  - precision-vacuumplate
  - heatable precision vacuum plate (only versions with special isolation plate)
  - heating plate (only versions with special isolation plate) or
  - glass plate

The heatable precision-vacuum plate and the heating plate can be used with all rods. If the glass plate is used (i.e. no heatable application is performed), the following should be noted:

If using a wire-bar or profile rod, use the printing blanket side of the glass plate. For other applicators, use the glass plate with the glass surface up (see chapter 6 “Turning the glass plate” on page 27).

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

⚠ Heating of substances can lead to risk of explosion, implosion or the release of toxic or flammable gases. If heating of a product can lead to the release of hazardous substances, it is necessary to use an appropriate extraction system.

⚠ During operation, the distance to walls and to other objects must be at least 10 cm.

5.2 Application with wire-bar or profile rod

When using the glass plate (i.e. in case of non-heatable applications) note the followings:

- Make sure that the printing blanket side of the glass plate is facing up.
- Ensure that the printing blanket is covered with the polyester mat.
- Lift up the weight (7) and hinge it into the top position.

Set the start stop (1) as follows:

- Move the open clamping device (5) and the drawing unit (19, 22 resp. for the ZAA2300.H) to the back of the apparatus.
- Place your substrate (e.g. test chart / film) at the desired place on the plate and fix it with the clamping device (5), by pulling on the clamping grip (3).

- Place the drawing unit (19, 22) above the upper edge of the substrate – for the ideal positioning together with your rod – so, that the rod rests at the desired starting position of the application on the substrate.
- Move the start stop (1) directly behind the drawing unit (19, 22) and fasten it with the screw.

Hint: If the substrate is too small to use the clamping device (5), use a piece of adhesive tape to fix it.

Adjust the end stop (2) as follows:

- Loosen the screw of the end stop (2).
- Position the end stop (2) behind the desired drawing area and lock it with the screw.
- Adjust the FWD-STOP-REV button (13) to REV (backward) position and let the drawing unit (22) move to the start stop (1).
- Place the wire-bar or profile rod into the holding device (9).
- Lower the weight (7) until it sits on the wire-bar / profile rod and holds it in place.
- Hint: Place a piece of paper at the end of your substrate to absorb any excess coating material.
- Set the desired drawing speed in mm/s with the SPEED button
- Apply the desired quantity of coating material on the substrate in front of the applicator rod.

- Start the drawing procedure by turning the “FWD-STOP-REV button (13) to the FWD (forward) position.

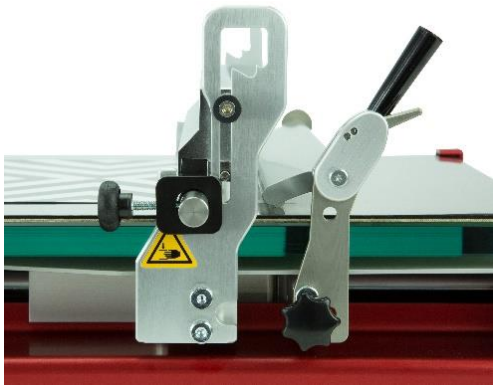
The drawing unit (19, 22) now moves forwards and draws a uniform film on the substrate. Let the drawing unit (19, 22) move to the end stop position (2) where it will stop automatically.

- Lift the weight (7) and hinge it into the top position.
- Remove and clean the applicator rod.
- Move the drawing unit (19, 22) back to the initial position by turning the FWD-STOP-REV button (13) to the REV (backwards) position.
- Remove your substrate. If the device is not needed anymore switch it off with the main switch (16).

Should the wire bar or profile rod rotate during application, then use the optional ACC1348 fixing unit for profile rods and wire-bar applicators.

5.2.1 ACC1348 fixing unit for profile rods and wire-bar

- Put the wire-bar or profile rod into the holder (9).
- Fix the ACC1348 fixing unit for profile rods and wire-bar applicators as shown below.



5.3 Application with gap applicator

When using the glass plate (i.e. in case of non-heatable applications) note the followings:

- Make sure that the glass plate is mounted with its glass surface facing up. Alternatively a precision-vacuumplate can be used.

Set the start stop (1) as follows:

- Place your substrate (e.g. test chart / film) at the desired place on the glass plate. Keep in mind that the gap applicator will be placed in front of the weight (7).
- Set your gap applicator to the desired gap height and place it on the substrate at the desired starting position of the application area.
- Lower the weight (7) to the bottom position.
- Move the drawing unit (22) to the gap applicator.
- Open the clamping device (5) and loosen the screw of the start stop (1).
- Move the start stop (1) directly behind the weight (7) and refasten it with the screw.
- Fix the substrate with the clamping device (5), by pulling on the clamping grip (3).

  Hint: If the substrate is too small to use the clamping device (5), use a piece of adhesive tape or the optional precision vacuum plate to fix it.

Set the end stop (2) as follows:

- Loosen the screw of the end stop (2).
- Move the drawing unit (22) forward and stop it with the end stop (2) as soon as the desired drawing area has been reached.
- Lock the end stop (2) by refastening the screw.
- Move the drawing unit (22) back to the starting position and place the applicator in front of the weight (7) again.

Refer to the separate manuals of the applicators you are using (e.g. ZUA 2000) for any applicator specific considerations.

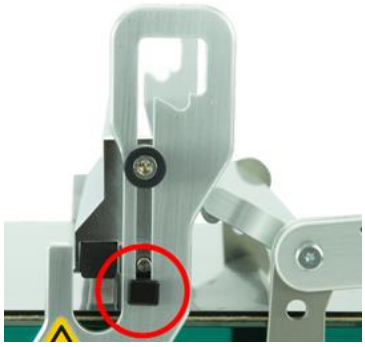
Hint: Place a piece of paper at the end of the substrate to absorb any excess coating material.

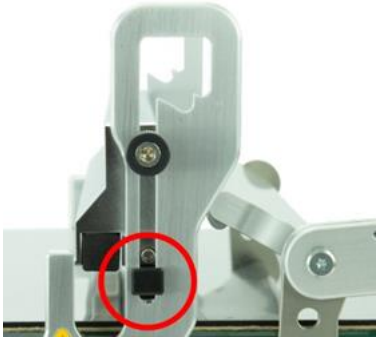
- Set the desired drawing speed in mm/s with the SPEED button (14).
- Apply the desired quantity of coating material on the substrate in front of the application blade.
- Start the application procedure by turning the FWD-STOP-REV button (13) to the FWD (forward) position.

- Move the drawing unit (19, 22) back to the starting position by turning the FWD-STOP-REV button (13) to the REV (backward) position.
- Remove and clean the gap applicator.
- Remove your substrate. If the unit is not needed anymore, switch it off with the main switch (16).

For substrates between 4 mm and 11 mm thickness, use the included weight lifter. To install it, remove the weight (7) and place the weight lifter in the holding device (9) with the top marker facing up, then place the weight (7) back in the holding device (9).

If the weight (7) needs to be lifted even higher, place the weightlifter with the top marker facing down in the holding device (9). The resulting height difference can be seen below.





6 Turning the glass plate

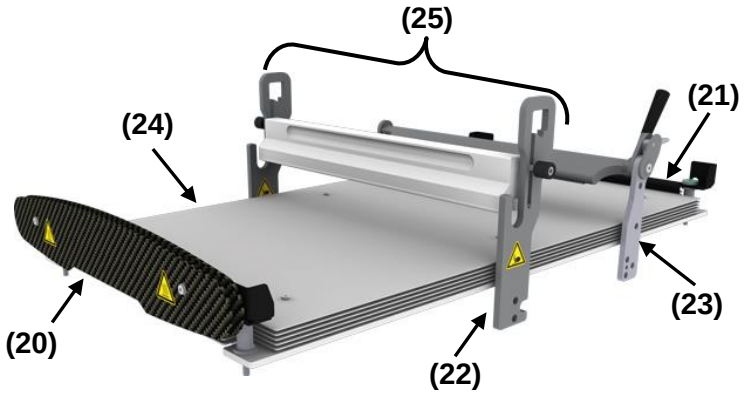
- Make sure that the start stop (1) and the drawing unit (22) are positioned in the very back of the device and that the clamping device (5) is released.
- Lift the weight (7) and hinge it into the top position of the holding device (9).

- Remove the polyester foil.
- Carefully lift the heating plate at its front edge and pull it out of the apparatus.

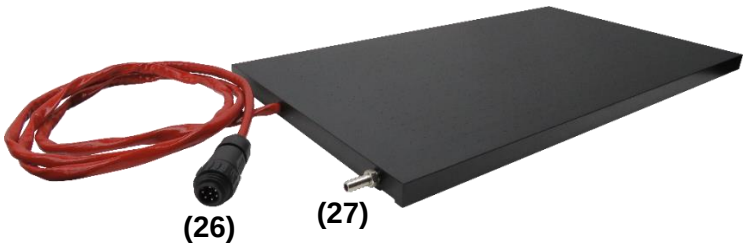
- Remove the glass plate and carefully place it on the apparatus with the desired side up.

7 Heating application

It is possible to retrofit the ZAA 2300 with the ACC1576 modification set „Heatable Application“.



20. Front heating plate holder
21. Back heating plate holder
22. Side plate of drawing unit for „Heatable application“
23. Fixation for „Heatable application“
24. Isolation plate
25. Drawing unit for „Heatable application“



26. Connector for temperature regulator
27. Vacuum pump connector

7.1 Change to ZAA2300.H

The ZAA 2300 must be converted to use it with the modification set for heatable applications.

To do so, proceed as follows:

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

- Remove the glass plate as described in chapter 6 on page 27.
- Loosen the knurled screws (11) and remove them together with the weight (7). First turn the weight upwards by 90 ° and – in reversed order as at the assembly - first take one side of the weight then the other out of the guides.
- Loosen the screws of both side parts (12) and remove the side parts.
- Remove the screw of the adjustable start stop (1).
- Loosen the screws of the clamping device and remove the clamping device (5).
- Remove the four rubber feet.

ℹ Under no circumstances lift off the bottom plate. It is forbidden to open the housing of the ZAA 2300! If not observed, all the guarantee and liability claims to Proceq SA will be void.

- Mount the clamping device „Heatable Application“ (23).
- Refasten the screw of the adjustable start stop (1).
- Mount the side parts of the drawing unit „Heatable Application“ (22).

- Insert the isolation plate (24).

- Mount the back heating plate holder (21).

- Mount the front heating plate holder (20).

- Move back the drawing unit „Heatable Application“ (25) and the clamping device „Heatable Application“ (23).
- Insert the heatable precision-vacuum plate / heating plate in the device by first guiding the cable under the clamping device (23).

- Insert the weight (7) into the guides with the black rubber part facing forward first one side of the weight then the other as shown below.

- Rotate the weight (7) so that the black rubber part faces down, then fix it with the two knurled screws (11).

- Connect the ACC1477 temperature controller as described in the separate instruction manual.
- The application itself is carried out in the same way as for non-heatable applications.

- The disassembly is carried out in reverse order. However, it is sufficient to remove the heating plate and insert the glass plate with the desired side facing up.

7.2 Changing the heating plate of the ZAA2300.H

- Make sure that the start stop (1) and the drawing unit (22) are positioned in the very back of the device and that the clamping device (5) is released.
- Lift the weight (7) and hinge it into the top position of the holding device (9).
- Carefully lift the heating plate at its front edge and pull it out of the apparatus.

- Insert the glass plate into the device with the required side facing up. If using a wire-bar or profile rod, use the printing blanket side of the glass plate. For applications with gap applicators use the glass plate with its glass side facing up.

8 Maintenance and cleaning

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

- Outer cleaning of the apparatus (see 8.1).
- Periodical lubrication of the guide rods (see 8.2).
- Replacing of the fuse (see 8.3).
- Inspection (see 8.4).

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

8.1 Cleaning

In order to ensure a perfect function, the film applicator should be kept as clean as possible. Remove eventual stains of 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 of the glass plate must not get wet.

Before cleaning the ZAA 2300, always switch off the apparatus and unplug it. Never immerse the apparatus in water or other liquids: Danger of short circuit.

Never touch the hot plate, always wait until the heating plate has cooled.

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.

8.2 Lubrication of the guide rods

From time to time it can be necessary to lubricate the guide rods with some sewing machine oil or something similar.

⚠ Before lubricating the guide rods of the ZAA 2300, 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 inserted plate (see also chapter 6 “Turning the glass plate” on page 27).
- Turn the apparatus carefully on 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 drawing unit (22) back and forth several times, so that the oil gets distributed evenly over the whole length of the rods.
- Insert the required plate.

8.3 Replacing the fuse

If the apparatus cannot be switched on (operation light POWER (15) is not glowing, this could be due to a defect fuse. You can replace the fuse by yourself by opening the fuse holder (18) on the back of the apparatus between the main switch (16) and the power supply socket (17) carefully using a screw driver or a similar tool.

⚠ Before replacing the fuse, always switch off the apparatus and unplug it.

⚠ **Replace the fine fuse (18) only by an equivalent fuse of the same type with the same specification.** Make sure 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 (18) and put it back in its place.

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

8.4 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 or an authorized partner.

9 Technical Specification

Material	Aluminum	Red anodized
	double-sided glass plate	Glass
	Printing blanket	Rubber coated cotton
	Polyester mat	Polyester
Dimensions (LxBxH)	Apparatus: 565 mm x 382 mm x 190 mm (22.2” x 15” x 7.5”) Glass plate: 553 mm x 300 mm x 15 mm (21.8” x 11.8” x 0.6”)	
Weight	complete 20 kg (44.1 lbs) Glass plate 6.4 kg (14.1 lbs)	
Weight Modification Set	2.292 g (5.05 lbs)	
Application length	1 - 400 mm (0.04” – 15.7”)	
Application width	Up to 300mm (11.8”) (depending on applicator)	
Substrate thickness	Up to 11mm (4.43”)	

	ZAA2300 *ZAA2300.H*	*ZAA2300.F* *ZAA2300.HF*	*ZAA2300.FF* *ZAA2300.FFH*
Drawing speed	0-99 mm/s	0- 247.5mm/s	0-495 mm/s
Tolerance of drawing speed	0 - 90 mm/s: ±1 % >90 mm/s: ±3 %	0 - 225 mm/s: ±1 % >225 mm/s: ±3 %	0 - 450 mm/s: ±1 % >450 mm/s: ±3 %
Resolution of drawing speed	1 mm/s	2.5 mm/s	5 mm/s

Power supply	100 V –240 V / 50 Hz – 60 Hz	
Power consumption	25 VA	
Fuse	T 0.8 A / 250 V	
Standards	depending on used accessories: ASTM D823	
Ambient condition		
Operating conditions	Temperature range Relative humidity Sunlight	0°C bis +45°C (32 °F to 113 °F) 20% bis 80%, non condensing Do not expose to strong sunlight for long period
Storage and transport conditions	Temperature range Relative humidity Sunlight	-20°C bis +85°C (-68 °F to 185 °F) 20% bis 80%, non condensing Do not expose to strong sunlight for long period
Excess voltage category	Cat II (according to EN 61010-2-030)	
Degree of soiling	2 (according to EN 61010-1) For indoor use only.	
Protection class	1 (according to EN 61140)	

For safety and liability information, please download at
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