

TQC Automatic Film Applicator Compact AB3650, AB3655

Entry level film applicator



WARRANTY

TQC will grant a warranty for a period of 12 months for the TQC Automatic Film Applicator Compact and 12 months for all related equipment from the date of delivery in respect of any evidence of faulty workmanship and materials.

Should a delivered consignment prove to be contrary to contract upon inspection, the customer shall grant TQC the opportunity hereunder of removing the fault, or else the customer may demand replacement. Because of size and weight of the instrument TQC will strive to give remote support. Should the supply or delivery of any improvement or replacement not prove possible, the customer may choose between having the purchase price reduced or in demanding the contract of sale to be rescinded (conversion). Damage resulting from natural wear and tear, mechanical or chemical damage, an act of God or non compliance with the operating instructions shall be excluded from the warranty as well as mechanical interference by the customer or by third parties with TQC Automatic Film Applicator Compact and related equipment without TQC's written permission. No liability will be accepted for defects, damage or injury caused due to use not carried out in accordance with the manufacturer's user instructions.

To claim warranty, the rejected product has to be sent to TQC together with the original invoice, any exchange before the product has been returned to TQC is not possible. TQC reserve the right to repair, exchange or supply an equivalent substitute. TQC is not liable for handling or transport costs. Warranty on the purchase price is limited, all liability for consequential damages or changes in technology is expelled.

This product complies to

- Machinery Directive 2006/42 / EC
- Low Voltage Directive 2006/95 / EC
- EMC Directive 2004/108 / EC



This product is RoHS 2 compliant (2011/65/EU)

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1 GENERAL

1.1 Importance of operating manual

This manual is written in order to become familiar with all the functions and possible applications of the instrument. It contains important instructions about how to use the instrument safely and economically; according to the purpose designated. Following these instructions is not only essential to avoid risks. It also reduces repair costs and down-time and increases the products reliability and service-life.

Anyone who works with the instrument shall follow the instructions in this manual, particularly the safety related instructions. Additionally local rules and regulations relating to environmental safety and accident prevention should be observed. It is mandatory that users have read and understand this manual prior to first operation of the TQC Automatic Film Applicator Compact.

1.2 User-responsibility

The user should

- a) Only allow persons to work with the instrument who are familiar with the general instructions on how to work safely and to prevent accidents. The use of the instrument should have been instructed duly. The safety chapter and the warnings in this manual should have been read and understood; acknowledged as evidenced by their signature.
- b) Regularly check the safety-awareness of personnel at work.

1.3 Responsibility of personnel

Before commencing work anyone appointed to work with the instrument should pay attention to the general regulations relating to working safety and accident prevention. The safety chapter and the warnings in this manual should have been read and understood; acknowledged as evidenced by their signature.

1.4 Dangers

This instrument has been designed and constructed in accordance with state-of-the-art technology and the acknowledged safety regulations. Nevertheless, working with the instrument may cause danger to the life and health of the operator or to others, or damage to the instrument or other property. Therefore the instrument should only be used for its designated purpose, and in a perfect technical condition. Any defect that could have a negative effect on safety should be repaired and recorded.

1.5 Designated purpose

The TQC Automatic Film Applicator Compact is exclusively designed to apply thin films of liquid or pastes on test specimen. Other applications constitute improper use. TQC will not be held liable for damage resulting from improper use.

Designated purpose also includes properly observing all instructions in the operation manual, and adherence to inspection and maintenance schedules. TQC is entitled to request these form when warranty claims are made and during inspections to ensure safe operation and evaluate correct usage.

1.6 Copyright

The copyright of this operating manual remains with TQC. This operating manual is intended solely for the user and his personnel. Its instructions and guidelines may not be duplicated, circulated or otherwise passed on to others, neither fully, nor partly. Infringement of these restrictions may lead to legal action may be taken if this restrictions are infringed upon.

1.7 Manufacturer's/Supplier's address

TQC – Molenbaan 19
2908 LL Capelle aan den IJssel
The Netherlands
T +31(0)10 7900 100
F +31 (0)10 7900 129

2 SAFETY INSTRUCTIONS

2.1 Meaning of Symbols

The following symbols for dangers are used in this instruction manual.



Possible immediate danger to the life or health of personnel.

If this guideline is not noted it can lead to severe danger to health, up to fatal injury.



A dangerous situation could be caused.

Non observance of this guideline can lead to injury or to damage to equipment.



Special tips and particular information.

Guidelines to make optimal use of the instrument.

2.2 Availability of Safety Information

The instruction manual should be kept in proximity to where the instrument operates and should be visible and accessible at any time of operation.

In addition to the information contained in the instruction manual, general and local regulations for accident prevention and environmental protection shall be kept available and observed. Always ensure all guidelines in respect of safety and dangers on the instrument are in readable condition.

In case of danger the instrument has to be switched off by means of the on / off switch at the left back side of the instrument or by unplugging the mains power, then the danger should be eliminated.

2.3 Dangers from Electrical Energy

- Work on the electrical supply may only be done by a qualified electrician.
- The electrical equipment of the instrument must be checked regularly. Loose connections and cables damaged by heat must be corrected immediately.
- Always make sure the instrument's power is turned off while adjusting any electrical component.



Make sure that no paint or other liquids are spilled on the electronics

2.4 Modifications to the Equipment

- Any modifications or additions or alterations to the instrument may solely be made with permission from the manufacturer otherwise the warranty will be void.
- Instruments which are not in fault-free condition must immediately be switched off
- Only use replacement parts from the original supplier. Parts used from other sources aren't guaranteed to take the loading and meet the safety requirements.

3 TRANSPORT AND STORAGE

3.1 Packing

- Please take note of pictorial symbols on the packing.

3.2 User: Check on Receipt

- Check packing for damage
- After unpacking check complete supply.

3.3 Reporting Transport Damage and Documentation

- Any damage should be documented as accurately as possible (possibly photographed) and reported to the relevant insurers or, in the case of sales “delivered to customers works”, to the supplier.

3.4 Storage and Protective Measures when not in use

- The instrument must be stored in a dry place at a temperature between 10 - 40°C.
- If packing is damaged upon receipt immediately inform the forwarder and make a note on the packing list and have it signed by the forwarder. Ideally make some pictures of the damage as well.
- Store instrument in the original packing if possible.

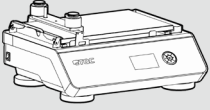
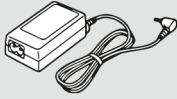


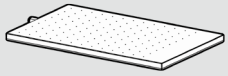
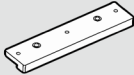



4 INSTRUMENT DATA

4.1 Name / Article

TQC Automatic Film Applicator Compact – Entry level film applicator

4.2 Scope of Supply

Standard supplied

| Standard supplied | | | Only supplied with AB3650 | Only supplied with AB3655 |
|---|---|---|--|---|
|  |  |  |  |  |
| TQC Automatic Film Applicator Compact | 24V Adapter | Paper Support | Glass Bed | Vacuum Bed |
|  |  |  |  |  |
| Drip Pan | Weight | Manual | Rubber Mat | Tube (1m) |

4.3 Technical Data

| | |
|--------------------------|---------------------------------|
| Traverse speed: | 1 - 150 mm/s / 0.03 - 5.90 in/s |
| Traverse speed accuracy: | < 1% |
| Stroke length: | 250 mm / 9.84 in |
| Stroke length accuracy: | < 1 mm |

| | |
|---|---|
| Max. test substrate thickness: | 8 mm / 0.31 in incl. coating |
| Max. width alternative film applicators: | 200 mm / 7.87 in |
| Max. test chart dimensions: | 216 mm X 355 mm (or with paper sheet support 500 mm) X 8 mm (incl. coating thickness) |
| Max. height alternative film applicators: | 40 mm / 1.57 in |
| Min. Wire bar length: | > 220 mm / > 8.66 in |
| Wire bar diameter: | 6 - 12,7 mm / 0.23 - 0.5 in |
| Volume drip pan: | 30 ml |

| | |
|--------------------------------|---|
| Drawn down speeds: | 1 - 150 mm/s / 0.03 - 5.90 in/s free selectable |
| Min. vacuum: | -100 mbar required for vacuum model |
| Diameter vacuum holes: | 1.3 mm / 0.05 in |
| Distance between vacuum holes: | 22 mm / 0.86 in |
| Number of vacuum holes: | 117 |
| Vacuum connection: | 6 mm / 0.23 in quick connect |

4.4 Dimensions and Weight

| | |
|-------------|--------------------|
| Depth: | 335 mm / 13.18 in |
| Width: | 400 mm / 15.74 in |
| Height: | 190 mm / 7.48 in |
| Net weight: | 12,5 kg / 27.55 in |

4.5 Basic Unit

| | |
|--------------------|---|
| Power Supply: | 24 VDC |
| Power consumption: | Max. 40 Watt |
| Display: | 128 x 64 pixels graphic, 70 mm x 40 mm / 2.75 x 1.57 in white illuminated |
| Menu languages: | English |
| Function: | Navigation switch |

4.6 Accessories and Spares

Accessories

Vacuum Pumps

AB3675 Vacuum Pump, 23 l/min, 1750rpm 115VAC

AB3676 Vacuum Pump, 18 l/min, 1450rpm 230VAC

Optional Weight

AB3680 Optional Weight 250 g

Wire Bar Coaters

AB3720 Wire Bar Coater 4µm, film width 230mm, total width 290mm

AB3721 Wire Bar Coater 6µm, film width 230mm, total width 290mm

AB3722 Wire Bar Coater 8µm, film width 230mm, total width 290mm

AB3723 Wire Bar Coater 10µm, film width 230mm, total width 290mm

AB3724 Wire Bar Coater 12µm, film width 230mm, total width 290mm

AB3725 Wire Bar Coater 14µm, film width 230mm, total width 290mm

AB3726 Wire Bar Coater 16µm, film width 230mm, total width 290mm

AB3727 Wire Bar Coater 20µm, film width 230mm, total width 290mm

AB3728 Wire Bar Coater 24µm, film width 230mm, total width 290mm

AB3729 Wire Bar Coater 30µm, film width 230mm, total width 290mm

AB3730 Wire Bar Coater 34µm, film width 230mm, total width 290mm

AB3731 Wire Bar Coater 38µm, film width 230mm, total width 290mm

AB3732 Wire Bar Coater 40µm, film width 230mm, total width 290mm

AB3733 Wire Bar Coater 50µm, film width 230mm, total width 290mm

AB3734 Wire Bar Coater 56µm, film width 230mm, total width 290mm

AB3735 Wire Bar Coater 60µm, film width 230mm, total width 290mm

AB3736 Wire Bar Coater 76µm, film width 230mm, total width 290mm

AB3737 Wire Bar Coater 100µm, film width 230mm, total width 290mm

AB3738 Wire Bar Coater 120µm, film width 230mm, total width 290mm

AB3739 Wire Bar Coater 150µm, film width 230mm, total width 290mm

AB3740 Wire Bar Coater 200µm, film width 230mm, total width 290mm

AB3741 Wire Bar Coater microns on request, film width 230mm, total width 290mm

AB3742 Wire Bar Coater plain polished, film width 230mm, total width 290mm

Spare parts

AB3670 Spare Glass Bed for Automatic Film Applicator Compact

AB3667 Spare Vacuum Bed for Automatic Film Applicator Compact

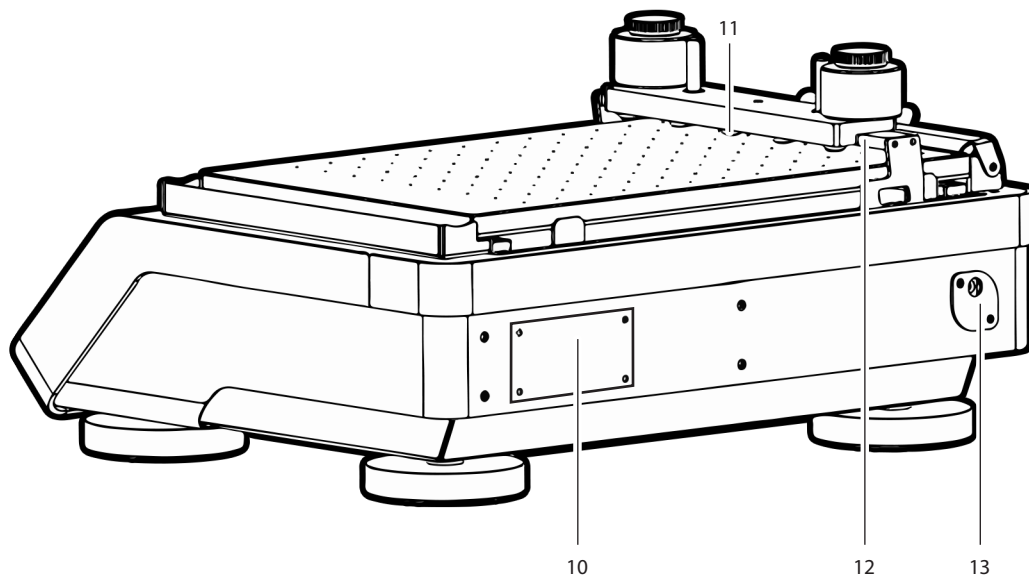
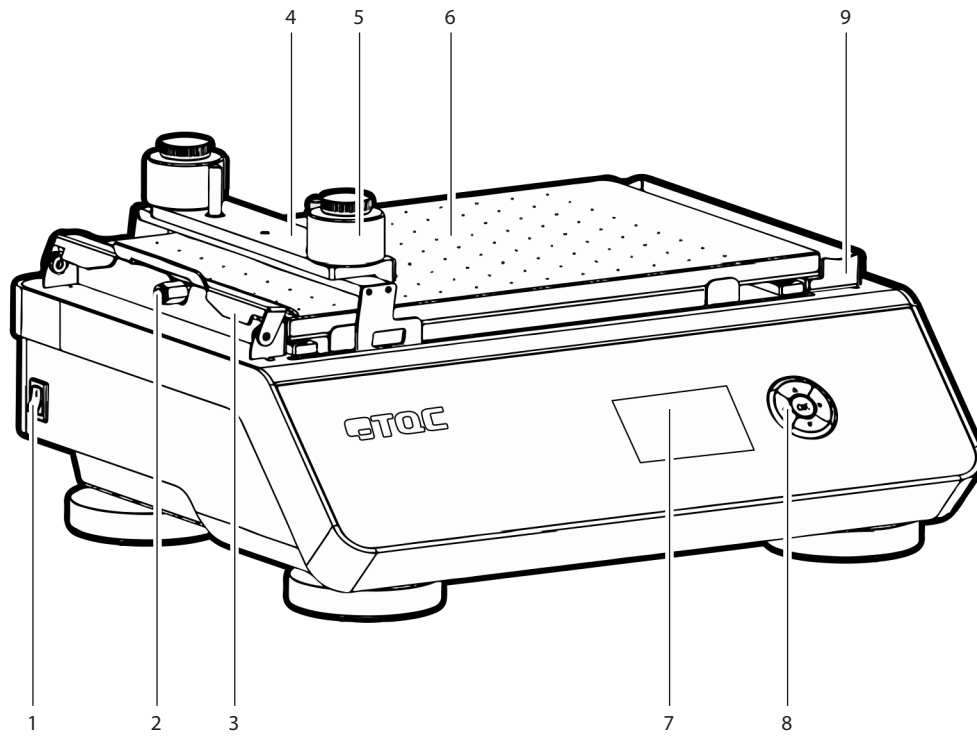
AB3657 Spare Drip Pan

AB3662 Spare Paper Support

A large range of applicators are suitable for the TQC Automatic Film Applicator Compact.

For more information about the applicators we refer you to our website.

5 INSTRUMENT CONTROLS AND FUNCTIONS



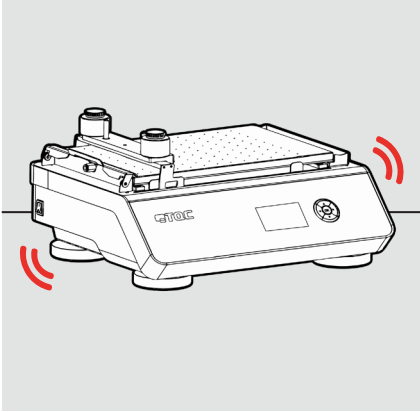
- 1 Power Switch
- 2 Vacuum Tube Fitting
- 3 Test Chart Clamp
- 4 Applicator Weight

- 5 Optional 250 g Weight
- 6 Vacuum Bed at AB3655 or
Glass Bed at AB3650
- 7 Display

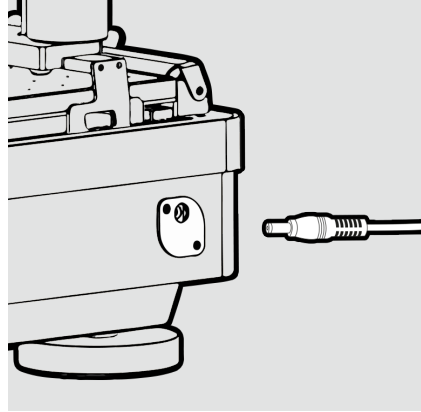
- 8 5-key Navigation Switch
- 9 Drip Pan or Paper Holder
- 10 Machine iD-tag
- 11 5x Anti-slip Rubber Bumpers

- 12 Red Pushbar
- 13 Power Entry

6 INSTRUMENT PREPARATIONS



① The instrument has to be installed on a sturdy table or work area.



② Connect the power cable.

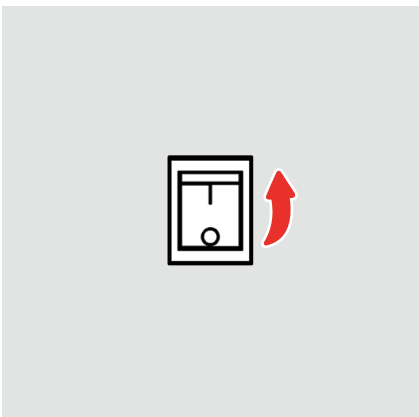
7 OPERATION

7.1 Navigation

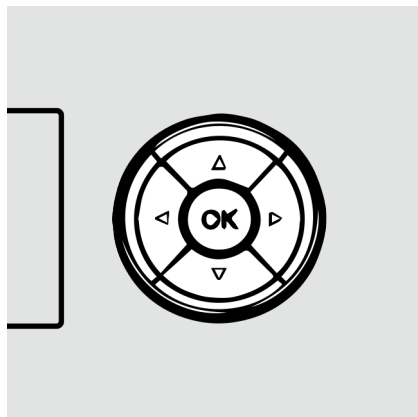
The TQC Automatic Film Applicator Compact is quite simple to operate by means of the menu in the display and the 5-key navigation switch. Use the 5-key navigation switch to highlight the function of choice in the menu and confirm by pressing the "OK" button.

The 5-key navigation switch is equipped with the unique Triple i function (Intelligent Illumination Interface). Triple i enhances the intuitive operation of the TQC Automatic Film Applicator Compact by illuminating just those keys that are active in combination with the position in the operating menu.

7.2 Starting the machine



① Switch on the machine by using the switch button on the left side of the machine.

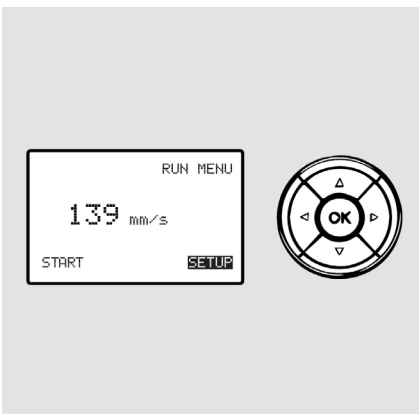


② Press "OK" to start-up the machine. (Machine will perform an internal calibration)

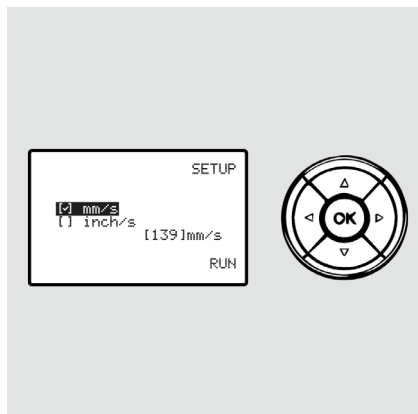


③ The display shows the current set test duration.

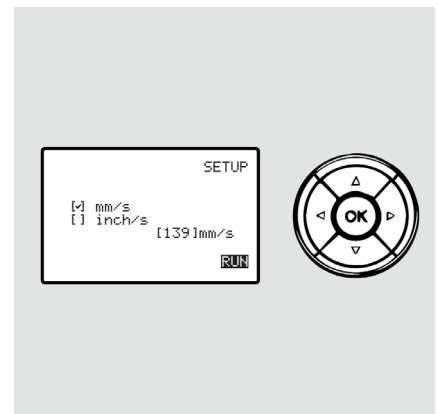
7.3 Setting test duration



① To alter the notation of the speed or the actual speed navigate with the arrow key to "SETUP" and press "OK".

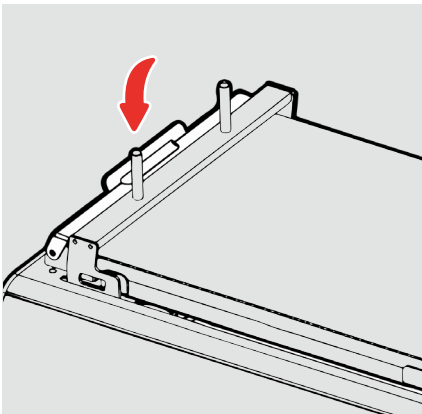


② If the notation of the speed need to be changed from mm/s into inch/s or vice versa navigate the cursor to the desired choice and press "OK".

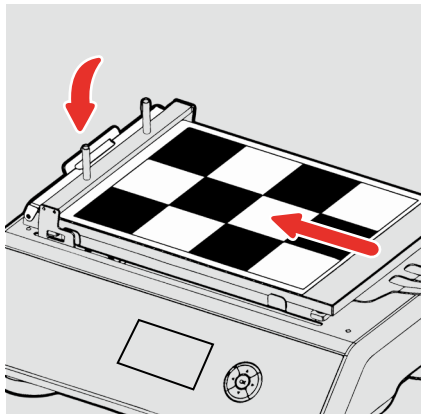


③ If the speed needs to be altered navigate the cursor to the correct digit and change the digit using the up and down keys. Move the cursor to the "RUN" option and activate the "RUN" option. You will return to the RUN MENU screen with the "START" option.

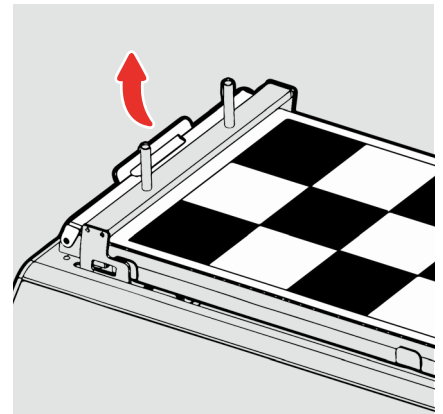
7.4 Prepare a draw down - Glass Bed Model (AB3650)



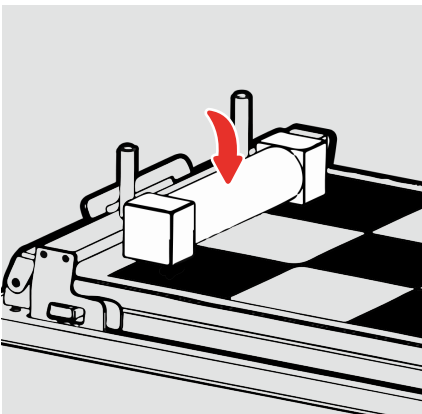
① Press the clamp down to open.



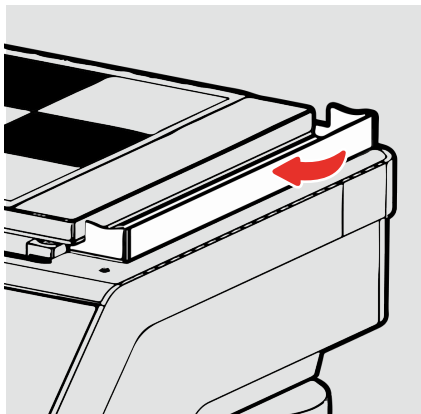
② While pressing the clamp position the test chart or other specimen on the glass bed and shift it under the clamp to the far left side.



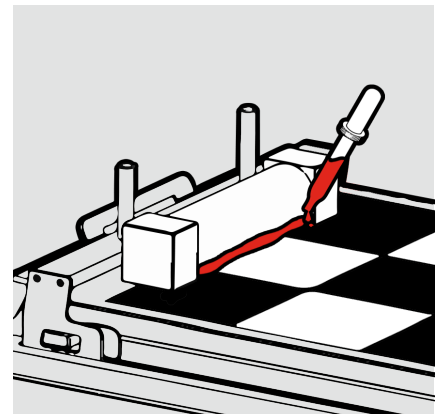
③ Release the clamp mechanism.



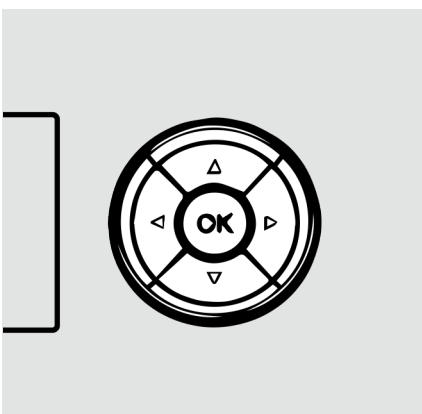
④ Place the application tool as described in paragraph 7.6.



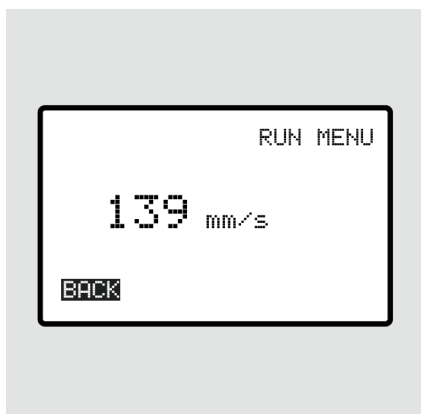
⑤ Position a sheet of paper to collect the surplus of paint or make sure the drip pan is in position and not full. See also paragraph 7.7 and 7.8.



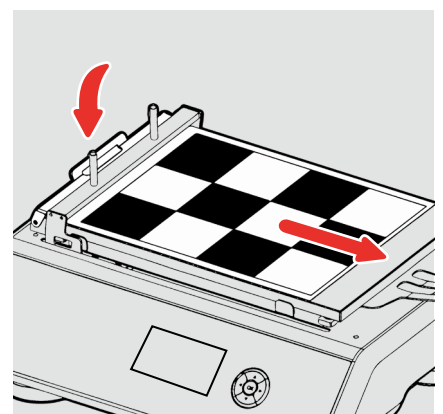
⑥ Apply the right amount of paint in front of the application tool.



⑦ Make sure the traverse and application tool are free to move and press the "OK" button to start the application.

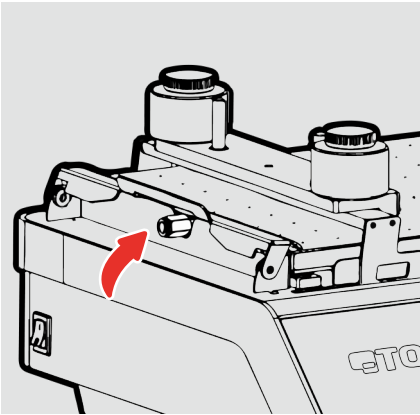


⑧ Once the draw down is made remove the application tool and return the traverse by activating the "BACK" option.

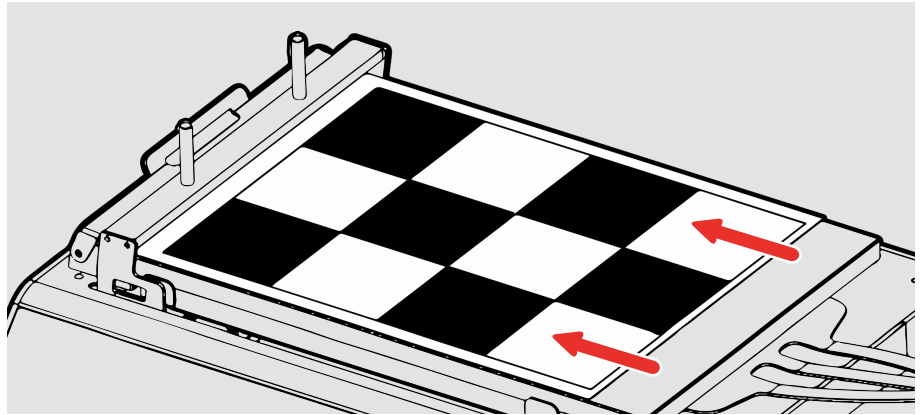


⑨ Remove the test card by releasing the clamp.

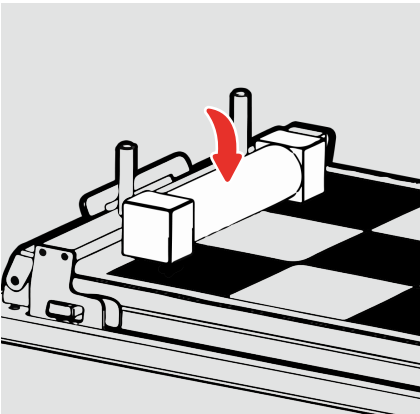
7.5 Prepare a draw down - Vacuum Bed Model (AB3655)



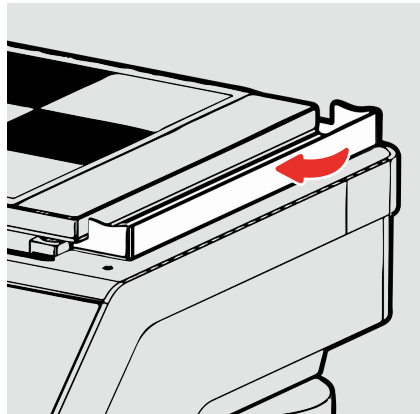
① Make sure the vacuum bed is connected to a proper and active vacuum source.



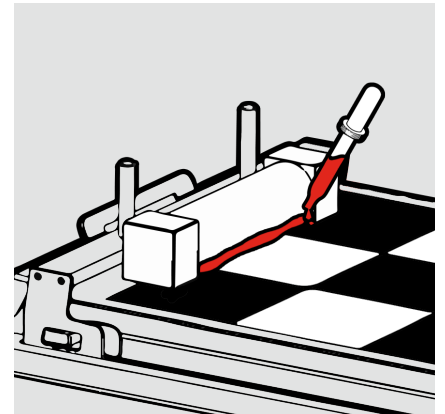
② Position the test chart on the vacuum bed and make sure it is fully flat and covers all the holes.
* Note that if the chart is too small to cover all the holes the remaining open holes have to be closed down by means of adhesive tape (use a tape that can be easily removed)



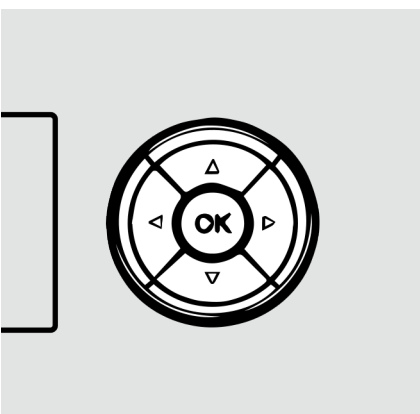
③ Place the application tool as described in paragraph 7.6.



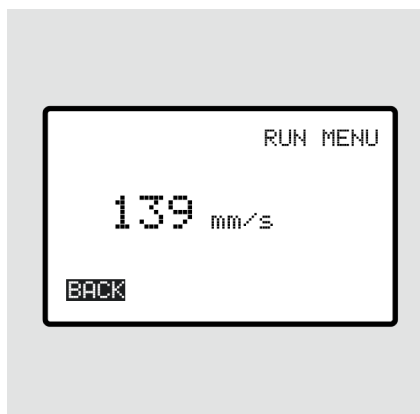
④ Position a sheet of paper to collect the surplus of paint or make sure the drip pan is in position and not full. See also paragraph 7.7 and 7.8.



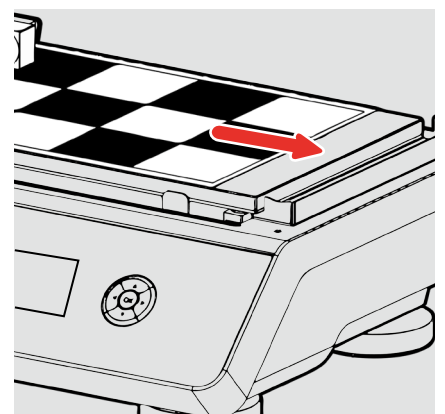
⑤ Apply the right amount of paint in front of the application tool.



⑥ Make sure the traverse and application tool are free to move and press the "OK" button to start the application.

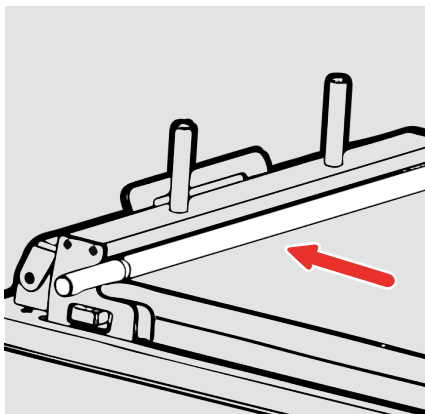


⑦ Once the draw down is made remove the application tool and return the traverse by activating the "BACK" option.

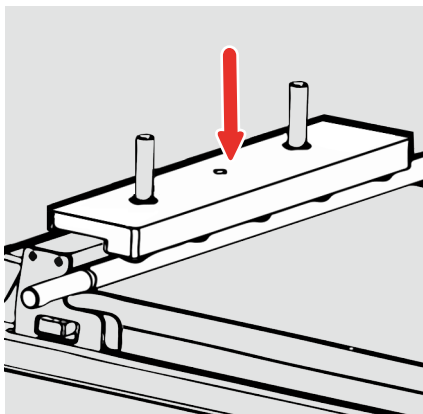


⑧ Switch off the vacuum and remove the test chart.

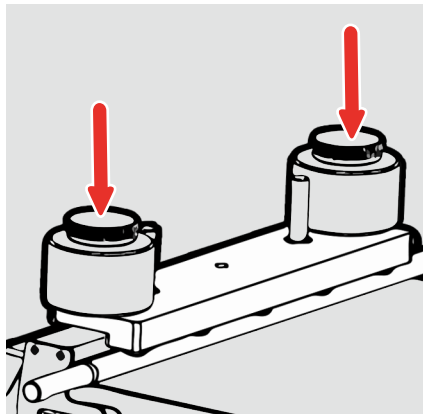
7.6 Placing an application tool



① Position the appropriate bird applicator, wire bar, square applicator, reservoir or quadruplex or other applicator bar in front of the red pushbar.



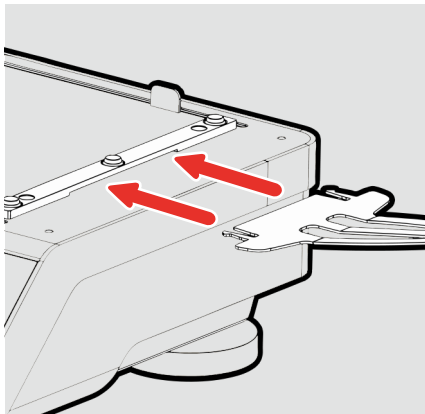
② To keep the wire bar from rotating and when additional weight is needed for other applicators, set the weight over the pins of the push bar such that the rubber feet of the weight bar are resting on the application tool or wire bar.



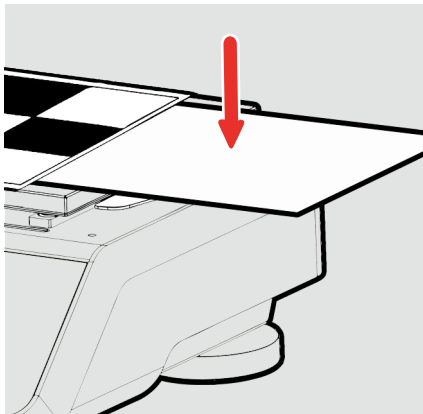
③ If required additional option weights can be mounted on the standard weight.

7.7 Using paper to collect the surplus of paint

TQC advises to use this method instead of the drip pan. This method does not require any cleaning, just disposal of contaminated sheets.



① Assemble the paper support on the right hand side of the machine by sliding it under the clamp bracket.



② When making a drawdown place a thin sheet of paper just under the trailing edge of the test-chart so any surplus of paint will end up on the sheet of paper.

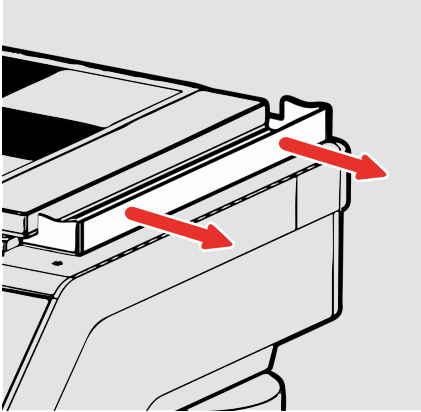


③ Just discard the contaminated sheet in the appropriate waste bin and use a new sheet for the next drawdown.

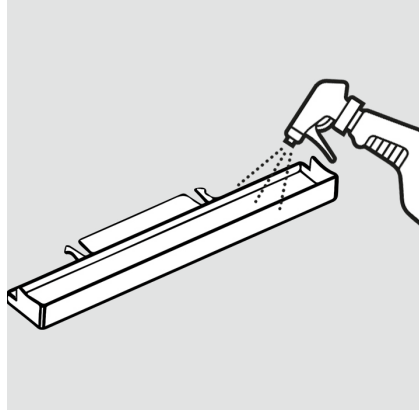
7.8 Cleaning the drip pan



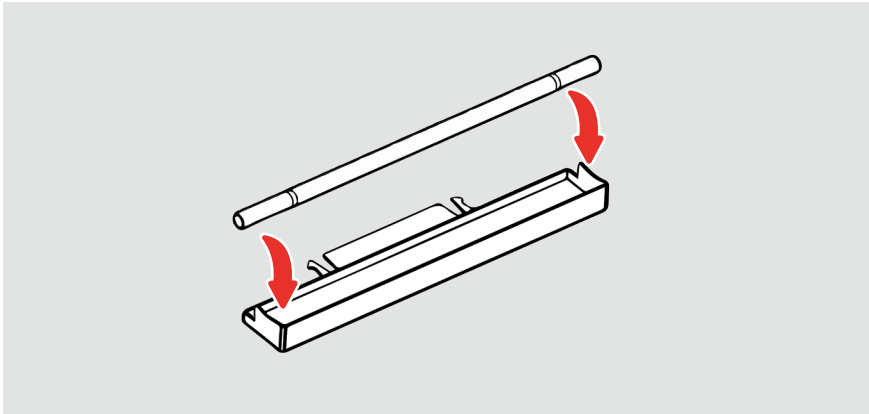
Please note that the drip pan can hold a limited volume of 30 ml of paint. It is important to empty and clean this at a regular basis.



- ① To remove the pan just pull it horizontally away from the vacuum bed using two hands.



- ② The pan is entirely made of stainless steel so can be cleaned using water or when required more aggressive media.



The drip pan is designed in such a way that the wire bar applicator rests above it and any leftover paint leaks into it.

8 CARE AND MAINTENANCE

- Though robust in design, this instrument is precision-machined. Never drop it or knock it over.
- Always clean the instrument after use.
- Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Be careful when using compressed air to clean the instrument.
- Generally the Automatic Film Applicator Compact does not require any maintenance.



Make sure that no paint or other liquids are spilled on the electronics or left in the holes.

10.1 Disposal of Materials

Disposal of materials used in the operation of the instrument or for auxiliary functions and exchanged items should be dealt with safety and in a manner that will not harm the environment. Follow the local regulations.

10.2 Customer Service

Customer service is provided on request by
TQC – Molenbaan 19 , 2908LL Capelle aan den IJssel - The Netherlands,
T +31(0)10 7900100, F +31 (0)10 7900129 or by local representatives.





9 DISCLAIMER

The right of technical modifications is reserved.

The information given in this manual is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this manual without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Whilst we endeavor to ensure that all advice we give about the product (whether in this manual or otherwise) is correct we have no control over either the quality or condition of the product or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development.

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