

Manual

Cleaning the MF5R1 and the MF5R1BM

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1 Cleaning the MF5R1 and the MF5R1BM



DANGER

Lead dust

Avoid the creation of and the exposure to lead dust.

- a) Wear protective gloves, protective goggles, protective mask and suitable protective clothing.
- b) Use wet pieces of cloth for cleaning and for absorbing lead dust.
- c) Use a brush and pressurised air only if necessary.
- d) Do not consume, store or process food, beverages or foodstuffs during or close to the cleaning.
- e) Wash and rinse your hands and face thoroughly after cleaning the Electronic Scoring Target (EST).
- f) Separate strictly protective clothing from other clothing.
- g) Adhere to all applicable safety regulations and applicable regulations for avoiding lead dust on your shooting range.



NOTICE

Heavy pollution

If the Electronic Scoring Target (EST) is too heavily polluted, it cannot register shots. Shots can be missed.

- a) Calibrate the EST before competitions, important phases of competitions and before single positions of competitions.
- b) Verify the values for Amplification.
- c) If levels with medium amplification appear, clean the EST after the phase of the competition.
- d) If levels with maximum amplification appear, clean the EST immediately.
- e) Calibrate the EST again after cleaning.

Normal cleaning of the EST

Clean the aperture plates and the perspex screens regularly to avoid

- ensure optimal functioning
- avoid missed shots

Meyton suggests a cleaning every 1000 to 5000 shots and if required.

Proceed as follows

- Removal of target lighting [▶ 12]
- Cleaning the EST [▶ 20]
- Emptying the bullet collector
- Placement of target lighting [▶ 27]

Do not remove the EST from the bullet catcher.

Complete cleaning of the EST

Clean the EST and the bullet catcher regularly.

Meyton suggests a complete cleaning every 10 normal cleanings and if required.

Follow the complete instructions.

2 Verification of the EST with Control-PC

Verify if a cleaning of the EST is necessary. Verify the EST

- before competitions
- before important phases of competitions
- before single positions of competitions
- after competitions
- after training

Applicable to ESTs with ESTA-Control and ESTA-Pro.

2.1 Calibrating the EST

If you calibrate an Electronic Scoring Target (EST) the device is configuring for optimal functioning. The values for optimal functioning depend on the parameters of the environment. The EST is calibrating automatically while booting the Control-PC.



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- a) Calibrate the EST before competitions, important phases of competitions and before single positions of competitions.
- b) Verify the values for *Amplification*.
- c) If levels with medium amplification appear, clean the EST after the phase of the competition.
- d) If levels with maximum amplification appear, clean the EST immediately.
- e) Calibrate the EST again after cleaning.

Requirement: The program Competition control is open.

- a) Select the lanes. Draw the mouse while clicking left over the lanes that you want to select.

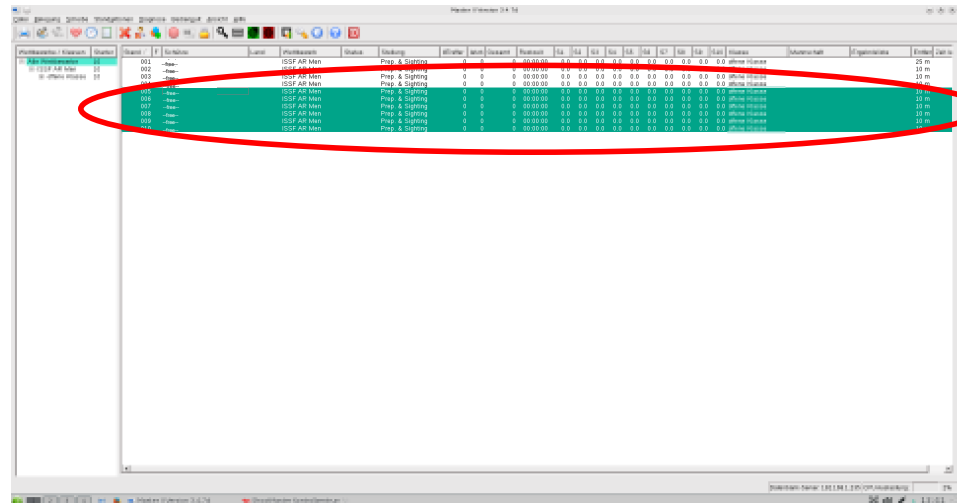


Illustration 1: Several lanes selected

b) Click on Diagnostics ->calibrate the measuring frame.

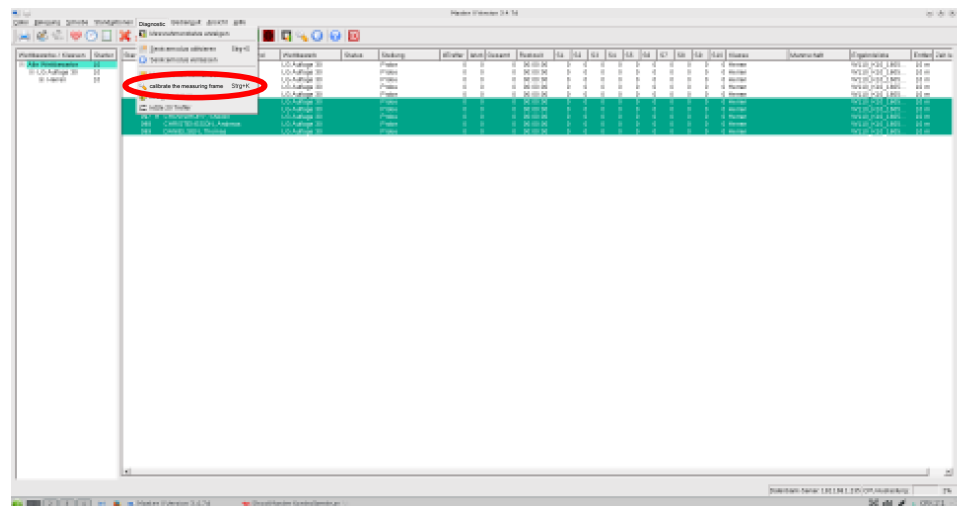


Illustration 2: calibrate the measuring frame

c) Confirm the calibration of the ESTs.

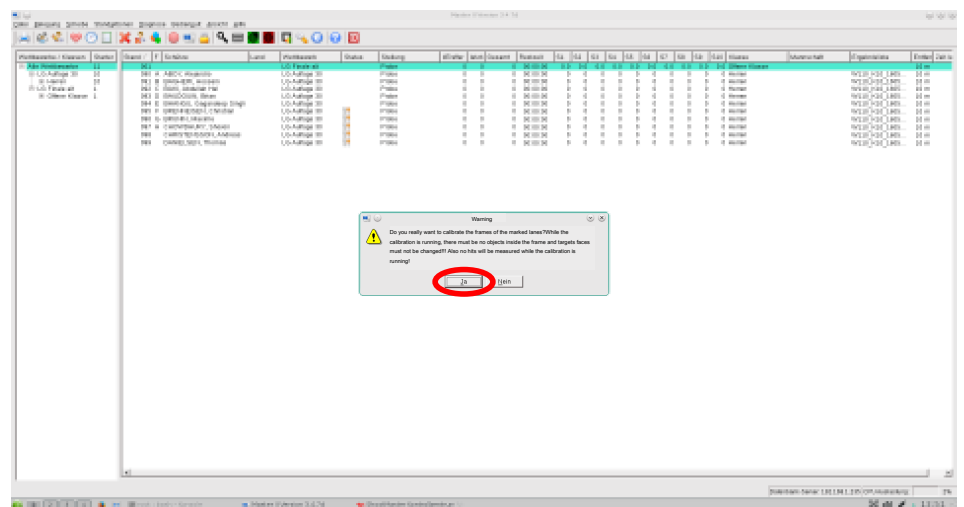


Illustration 3: Confirming the calibration of the EST

Result: The service mode is active. The ESTs are calibrating.

Display on the Control-PC

During the calibration of the EST the Control-PC is displaying the following screen:



Illustration 4: Calibration of the EST on the Control-PC

2.2 Reading the display during the calibration



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- a) Calibrate the EST before competitions, important phases of competitions and before single positions of competitions.
- b) Verify the values for Amplification.
- c) If levels with medium amplification appear, clean the EST after the phase of the competition.
- d) If levels with maximum amplification appear, clean the EST immediately.
- e) Calibrate the EST again after cleaning.

Requirement: The EST is calibrating

Requirement: The Control-PC displays the following screen.

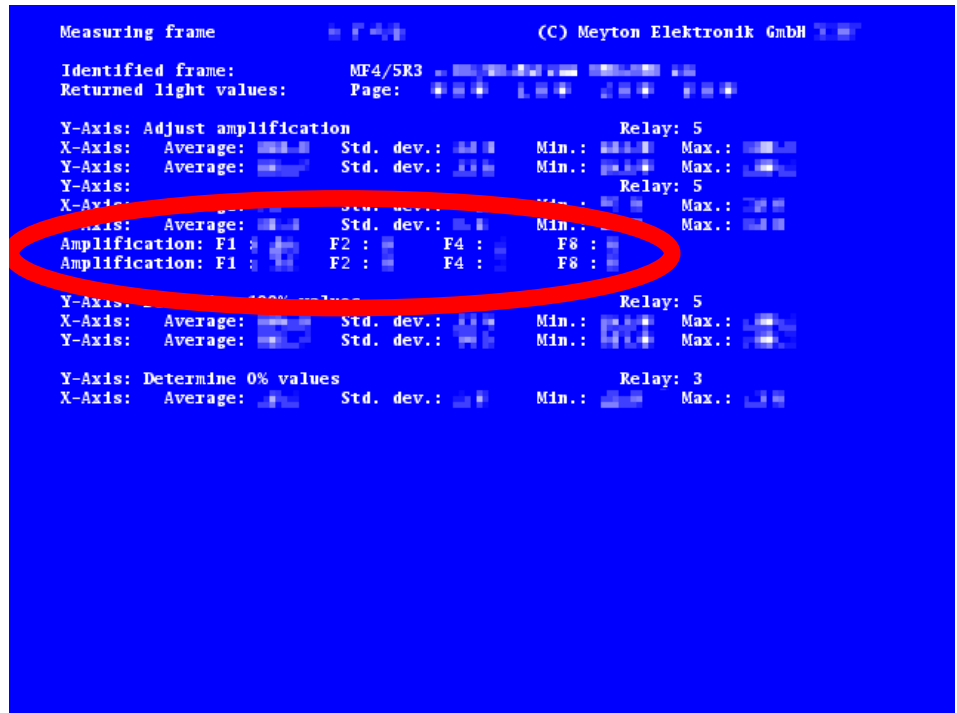


Illustration 5: Calibration of the EST on the Control-PC

- Verify the values for Amplification.
- Verify the values after F4.
- Verify the values after F8.
- Press the button Competition to leave the screen

The Amplification shows how much the light of a light barrier has to be amplified so that the light-barrier can detect hits. The amplification is measured in 4 levels:

- F1 is the level without amplification
- F2 is the level with the least amplification
- F4 is the level with the medium amplification
- F8 is the level with the maximum amplification

The display on the Control-PC counts how many light-barriers are in the different levels. The first line is counting the light-barriers on the horizontal axis of the EST. The second line is counting the light-barriers on the vertical axis of the EST. The sum of all numbers is the number of all light-barriers in the EST. The number of light-barriers depends on the model of EST.

A perfectly clean EST has only light-barriers with the amplification F1.

A clean EST has about 90% light-barriers with the level F1 and 10% light-barriers with the level F2.

Lightbarriers with more than 15% level F2 indicate pollution.

Light-barriers with the level F4 indicate heavy pollution.

Light-barriers with the level F8 indicate extremely heavy pollution.

3 Verification of the EST with ESTA5

Verify if a cleaning of the EST is necessary. Verify the EST

- before competitions
- before important phases of competitions
- before single positions of competitions
- after competitions
- after training

Applicable to ESTs with ESTA-Mobile.

3.1 Showing the light sensor values

Requirement: The menu is open.

- a) Press on `Technical Service Menu`.
- b) Press on `Sensor Values`.

Interim result: ESTA5 shows the condition of the light sensors.

- c) Press on `Exit` sub-menu to return to the menu.

3.2 Reading the light sensor values



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If the Electronic Scoring Target (EST) is too heavily polluted, it cannot register shots. Shots can be missed.

- a) Calibrate the EST before competitions, important phases of competitions and before single positions of competitions.
- b) Verify the values for `Amplification`.
- c) If levels with medium amplification appear, clean the EST after the phase of the competition.
- d) If levels with maximum amplification appear, clean the EST immediately.
- e) Calibrate the EST again after cleaning.

- a) Verify the values.

- b) Count the numbers of the light-barriers in the different levels.

The `Sensor Values` shows how much the light of a light barrier has to be amplified so that the light-barrier can detect hits. The amplification is measured in 4 levels:

- `Good`: is the level without amplification
- `A Bit Dark`: is the level with the least amplification
- `Dark`: is the level with the medium amplification
- `very dark`: is the level with the maximum amplification

The display shows how many light-barriers are in the different levels. The lines represent the different axes of the ESTs. The number of light-barriers depends on the model of EST.

A perfectly clean EST has only light-barriers with the amplification `Good:`.

A clean EST has about 90% light-barriers with the level `Good:` and 10% light-barriers with the level `A Bit Dark:`.

Light-barriers with more than 15% level `A Bit Dark:` indicate pollution.

Light-barriers with the level `Dark:` indicate heavy pollution.

Light-barriers with the level `very dark:` indicate extremely heavy pollution.

3.3 Calibrating the EST

Requirement: The menu is open.

- a) Press on `Technical Service Menu`.
- b) Press on `Calibrate EST`.
- c) Confirm with `OK`.
- d) Wait until the calibration is finished.

Interim result: ESTA5 shows the condition of the light sensors.

- e) Press on `Exit` sub-menu to return to the menu.

4 Removal of target lighting

Remove the target lighting.

Requirement: Applicable for all target lightings

Requirement: Electronic Scoring Target disconnected from power supply

a) Remove the plug.

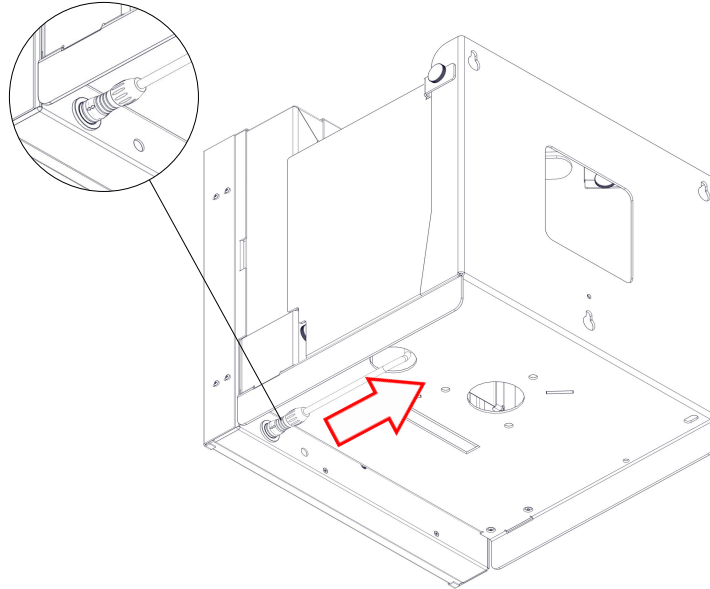


Illustration 6: Remove the plug

b) Put the plug through the hole bullet catcher.

c) Remove the target lighting.

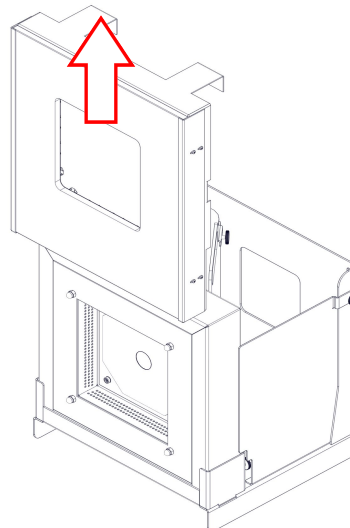


Illustration 7: Remove the target lighting

Result: The target lighting is removed.

5 Remove the EST

Remove the Eletronic Scoring Target from the bullet catcher.

Requirement: Eletronic Scoring Target disconnected from power supply

Requirement: target lighting removed

a) Loosen the screw left. Remove the cover.

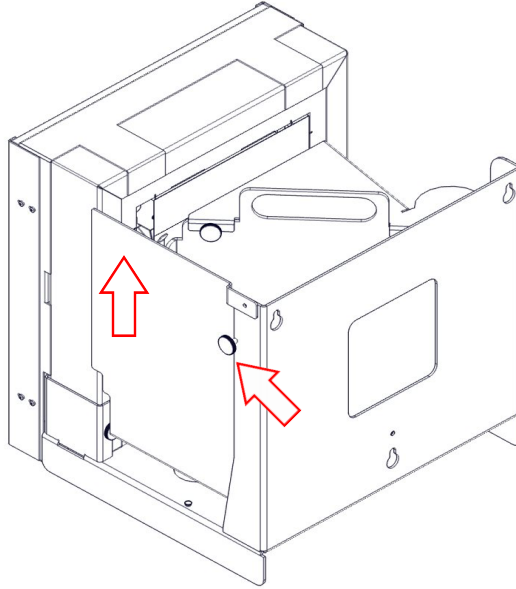


Illustration 8: Remove the cover

b) Loosen the screws. Remove the cover.

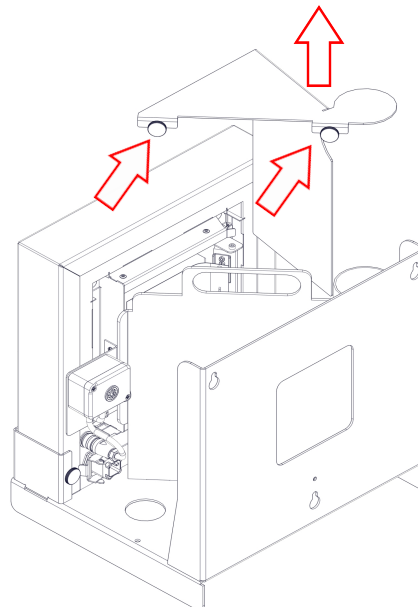


Illustration 9: Remove the cover

c) Loosen the screw left.

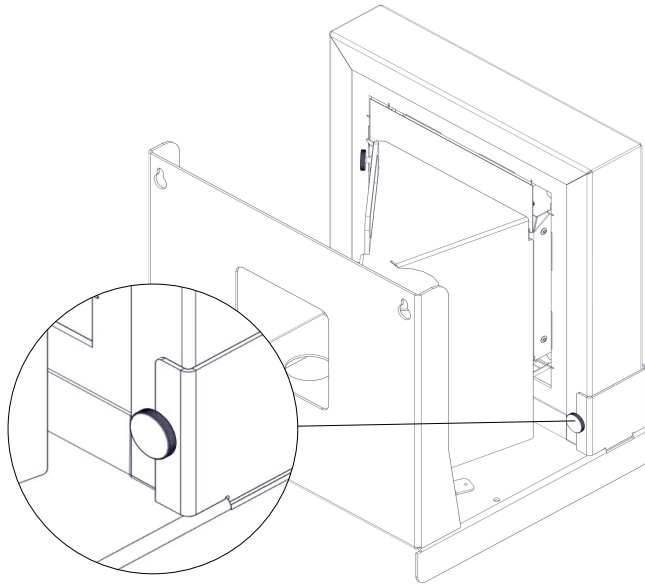


Illustration 10: Loosen the screw

d) Loosen the screw right.

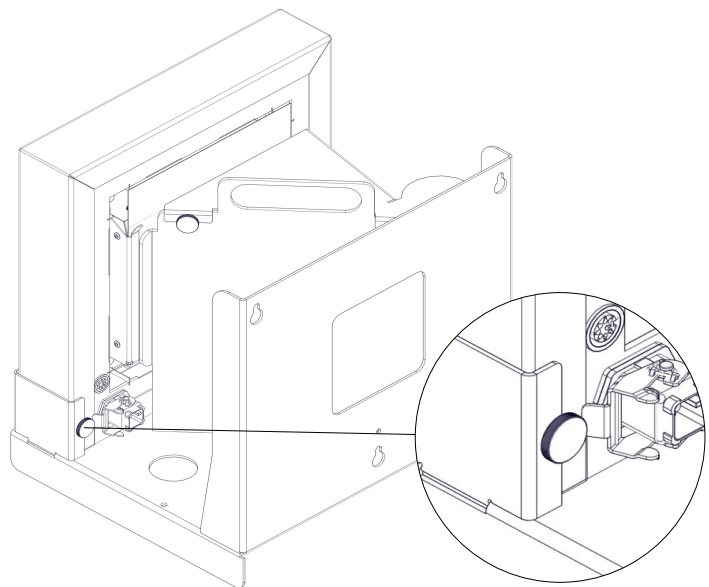


Illustration 11: Loosen the screw

e) Remove the Electronic Scoring Target.

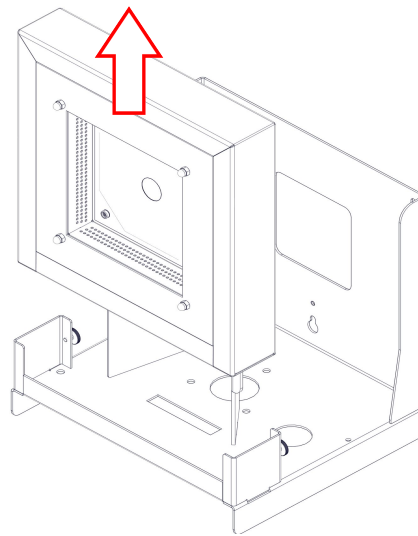


Illustration 12: Remove the Electronic Scoring Target

Result: The Electronic Scoring Target is removed from the bullet catcher.

6 Cleaning the bullet catcher



DANGER

Lead dust

Avoid the creation of and the exposure to lead dust.

- a) Wear protective gloves, protective goggles, protective mask and suitable protective clothing.
- b) Use wet pieces of cloth for cleaning and for absorbing lead dust.
- c) Use a brush and pressurised air only if necessary.
- d) Do not consume, store or process food, beverages or foodstuffs during or close to the cleaning.
- e) Wash and rinse your hands and face thoroughly after cleaning the Electronic Scorint Target (EST).
- f) Separate strictly protective clothing from other clothing.
- g) Adhere to all applicable safety regulations and applicable regulations for avoiding lead dust on your shooting range.

Requirement: scraper

Requirement: pressurised air

Requirement: wet cloth

- a) Remove, empty and clean bullet collector

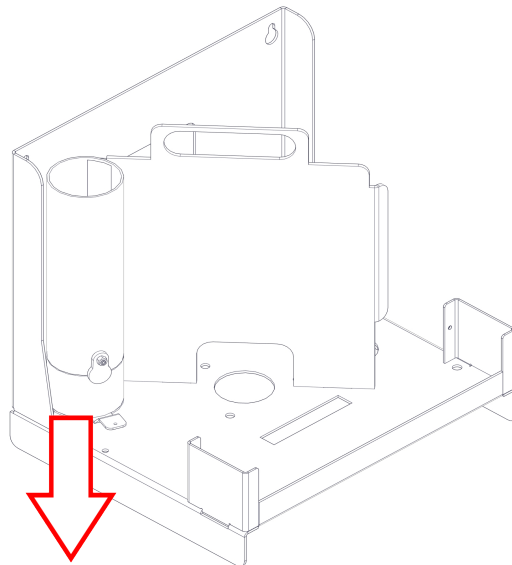


Illustration 13: Removing bullet collector

- b) Remove lead from the deflector plate.

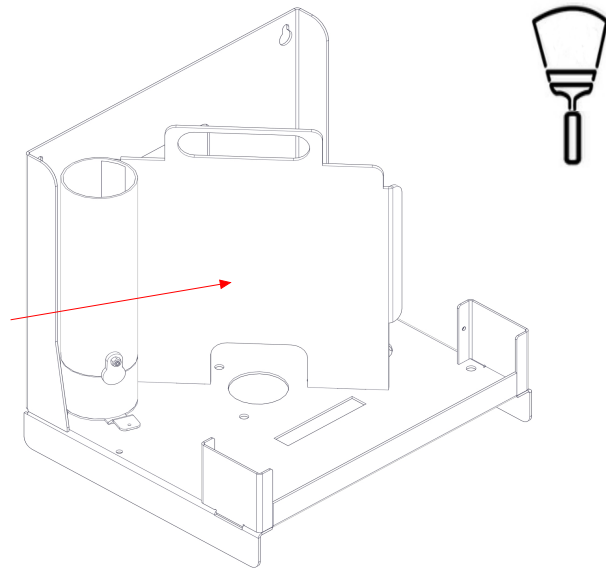


Illustration 14: Cleaning deflector plate

c) Clean the bullet catcher with pressurised air.

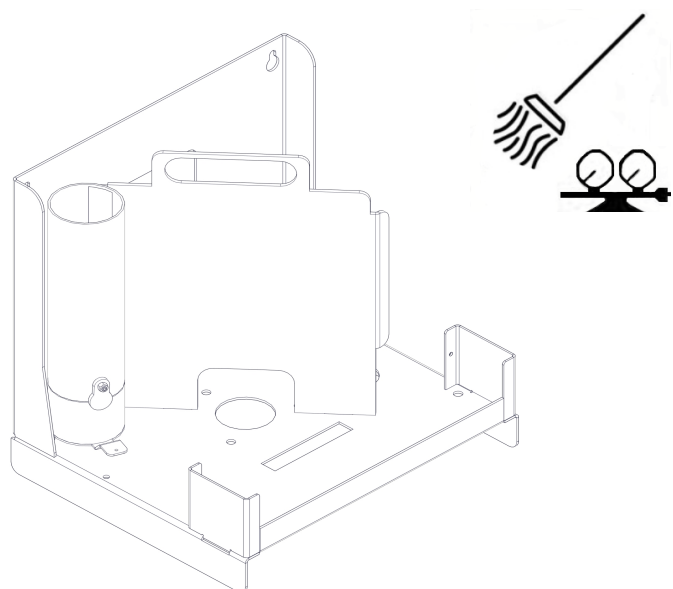


Illustration 15: Cleaning the bullet catcher with pressurised air

d) Clean the interior of the bullet catcher with a wet cloth.

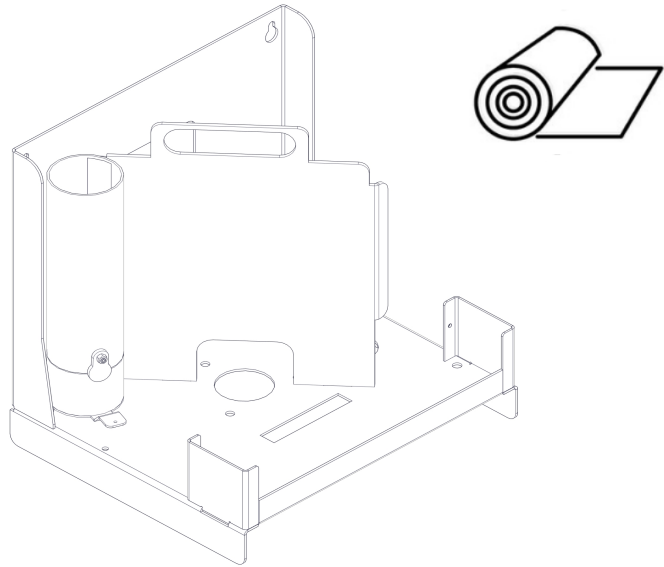


Illustration 16: Cleaning the bullet catcher with a wet cloth

e) Place the bullet collector. Secure the bullet collector.

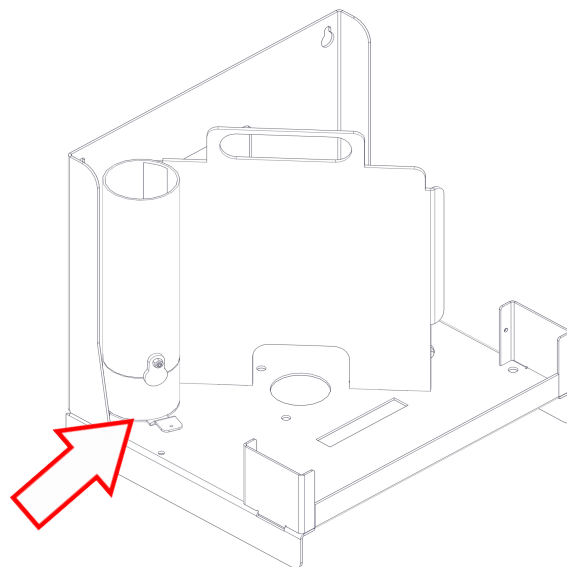


Illustration 17: Placing and securing the bullet collector

Result: The bullet catcher is clean.

7 Removal of the front panel

Remove the front panel from the EST.

Requirement: M6 socket wrench

a) Remove the 4 nuts. The following figure shows the 4 nuts.

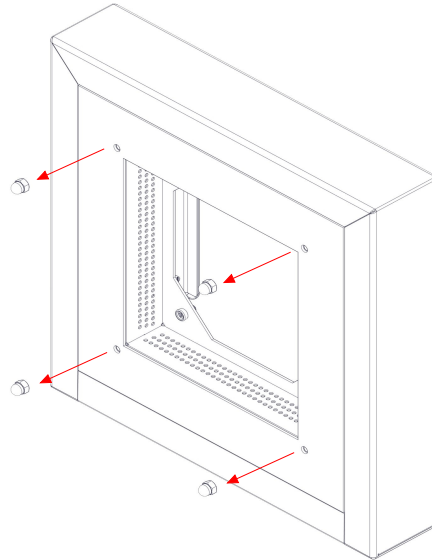


Illustration 18: Remove the nuts

b) Remove the front panel.

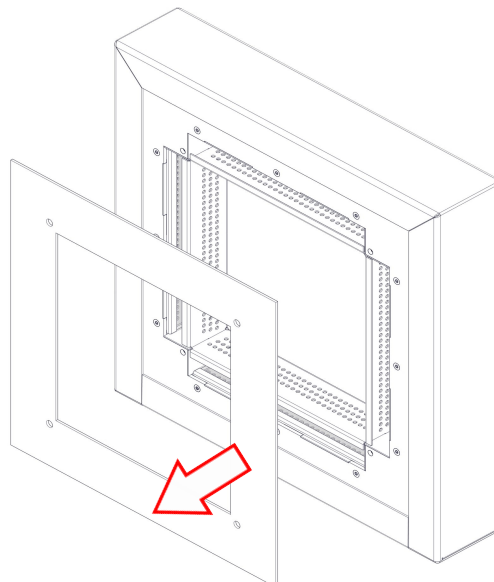


Illustration 19: Remove the front panel

Result: The front panel is removed.

8 Cleaning the EST



DANGER

Lead dust

Avoid the creation of and the exposure to lead dust.

- a) Wear protective gloves, protective goggles, protective mask and suitable protective clothing.
- b) Use wet pieces of cloth for cleaning and for absorbing lead dust.
- c) Use a brush and pressurised air only if necessary.
- d) Do not consume, store or process food, beverages or foodstuffs during or close to the cleaning.
- e) Wash and rinse your hands and face thoroughly after cleaning the Electronic Scorint Target (EST).
- f) Separate strictly protective clothing from other clothing.
- g) Adhere to all applicable safety regulations and applicable regulations for avoiding lead dust on your shooting range.

Requirement: brush

Requirement: wet cloth

- a) Clean the upper surface of the upper aperture plate with a brush.

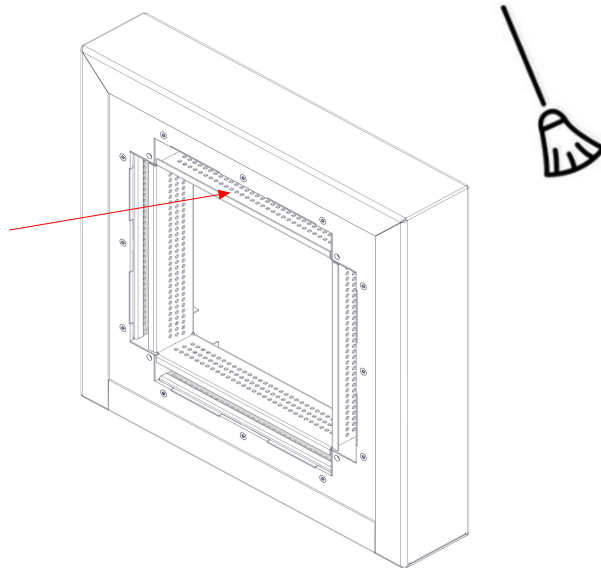


Illustration 20: Clean the upper surface of the upper aperture plate

- b) Clean the inner aperture plates with a wet cloth.

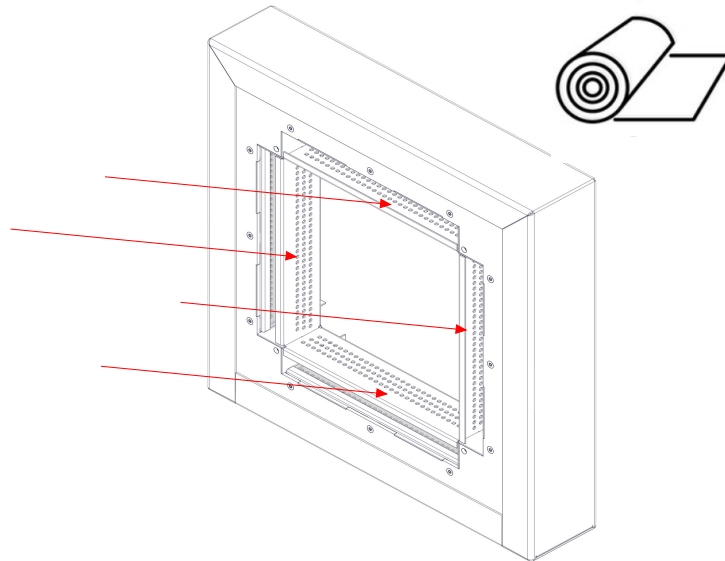


Illustration 21: Clean the inner aperture plates

- c) Clean all perspex screens with a brush. Do not scratch the perspex screens.

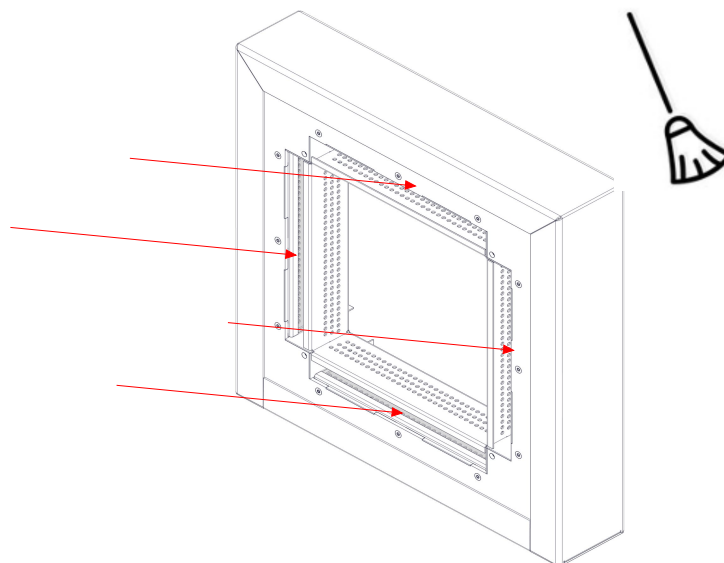


Illustration 22: Clean all perspex screens with a brush

- d) Clean all perspex screens with a wet cloth. Do not scratch the perspex screens.

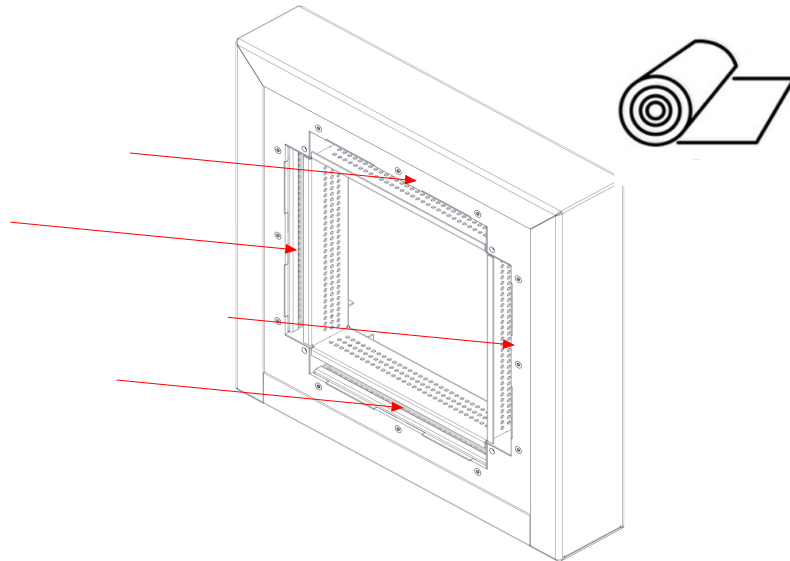


Illustration 23: Clean all perspex screens with a wet cloth

e) Clean the exterior of the EST with a wet cloth.

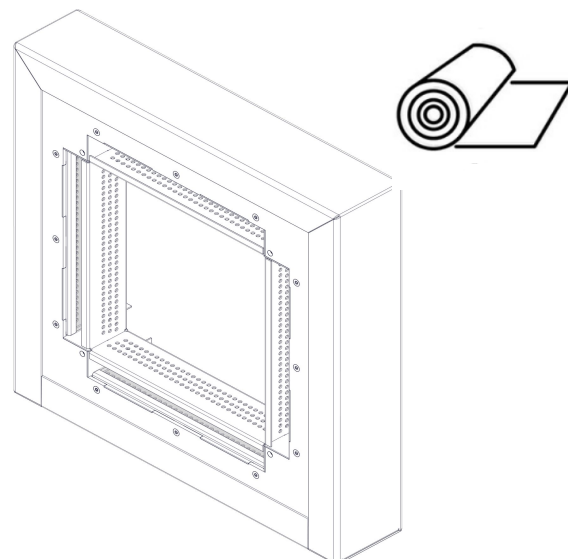


Illustration 24: Clean the exterior of the EST

Result: The EST is clean.

9 Place the front panel

Place the front panel on the EST.

Requirement: M6 socket wrench

a) Position the front panel

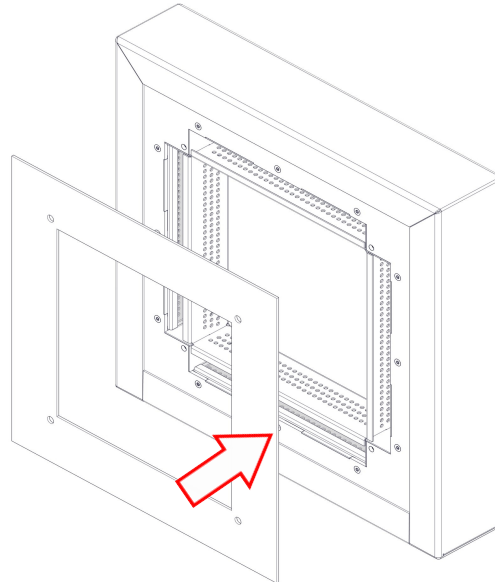


Illustration 25: Position the front panel

b) Tighten the 4 nuts. The following figure shows the 4 nuts.

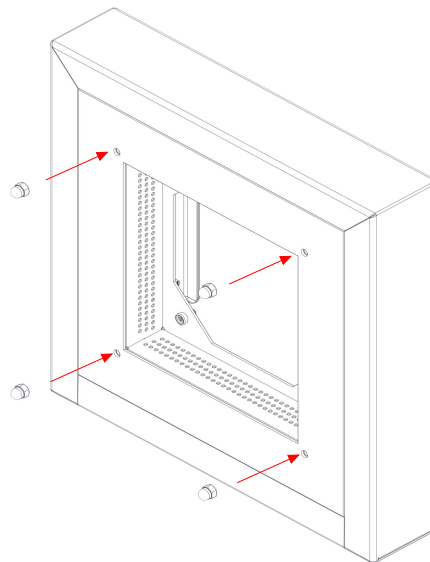


Illustration 26: Tighten the nuts

Result: The front panel is placed.

10 Placement Electronic Scoring Target

Place the Electronic Scoring Target in the bullet catcher.

Requirement: Electronic Scoring Target disconnected from power supply

Requirement: target lighting removed

Requirement: devices placed on the Electronic Scoring Target

a) Place the Electronic Scoring Target.

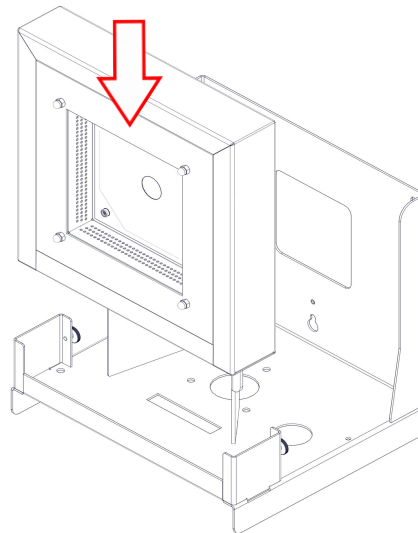


Illustration 27: Place the Electronic Scoring Target

b) Tighten the screw left.

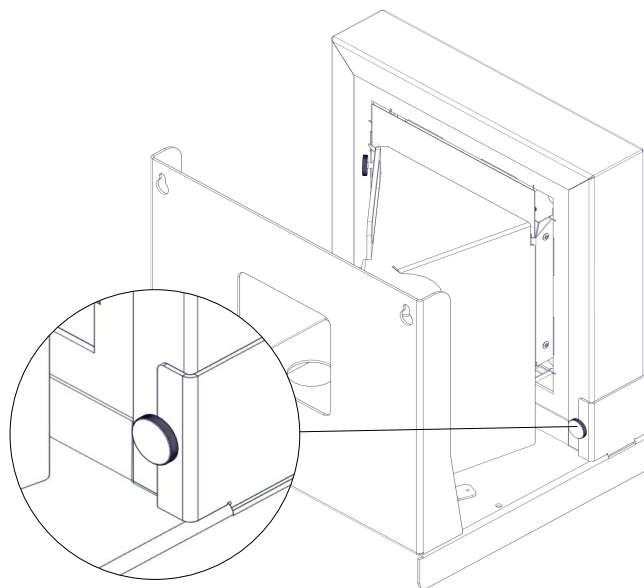


Illustration 28: Tighten the screw

c) Tighten the screw right.

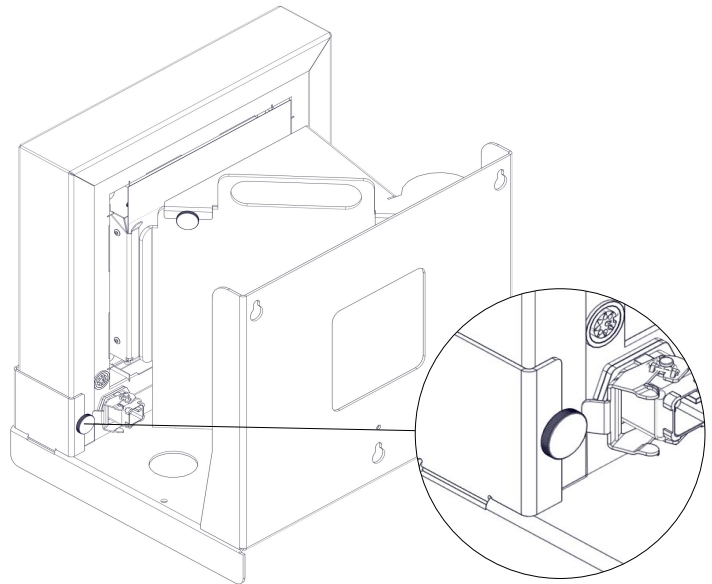


Illustration 29: Tighten the screw

d) Place the cover. Tighten the screws.

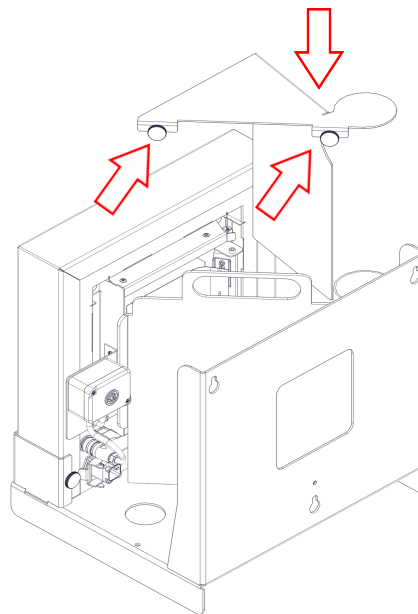


Illustration 30: Place the cover

e) Place the cover. Tighten the screw left.

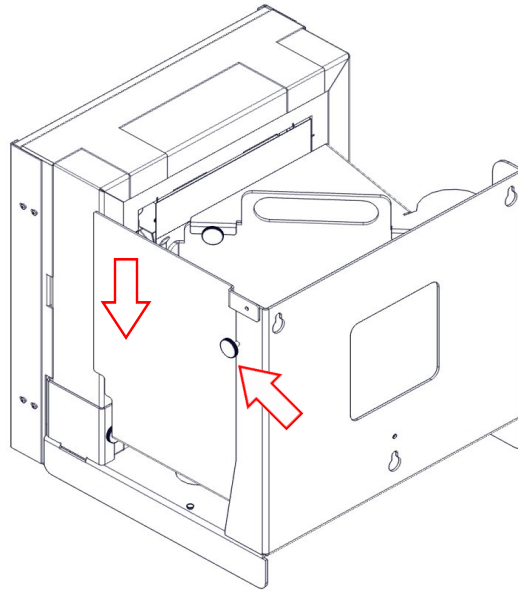


Illustration 31: Place the cover

Result: The Electronic Scoring Target is placed in the bullet catcher.

11 Placement of target lighting

Place the target lighting.

Requirement: Applicable for all target lightings

Requirement: Electronic Scoring Target disconnected from power supply

a) Position the target lighting.

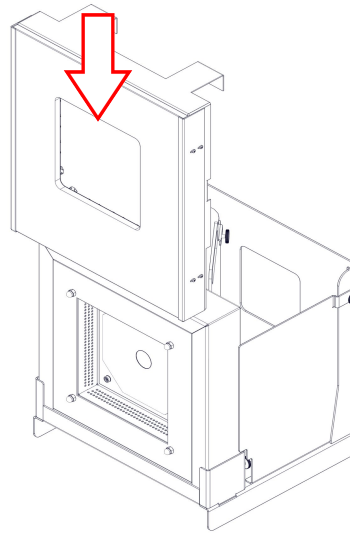


Illustration 32: Position the target lighting

b) Put the plug through the hole in the bullet catcher.

c) Put the plug in the socket of the target lighting.

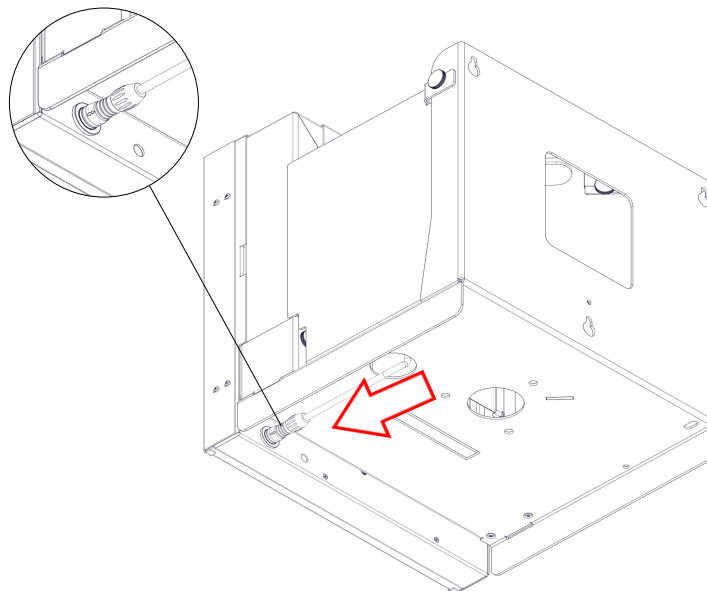


Illustration 33: Put the plug

Result: The target lighting is placed.