SIUS

Electronic scoring systems

LS10 LASERSCORE®

- **Installation**
- **Start-up**
- **Maintenance**

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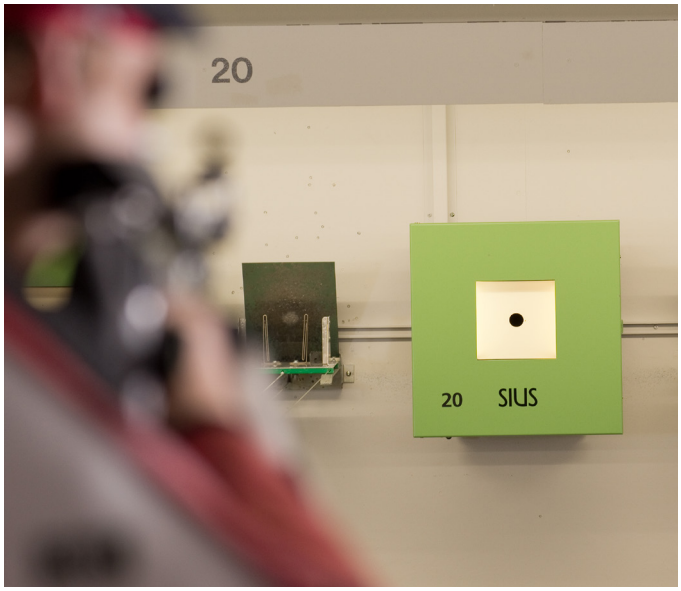
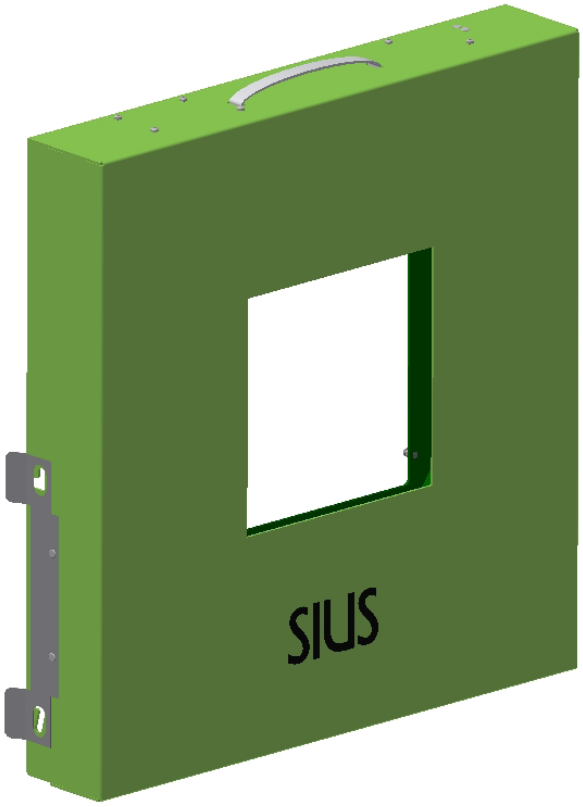
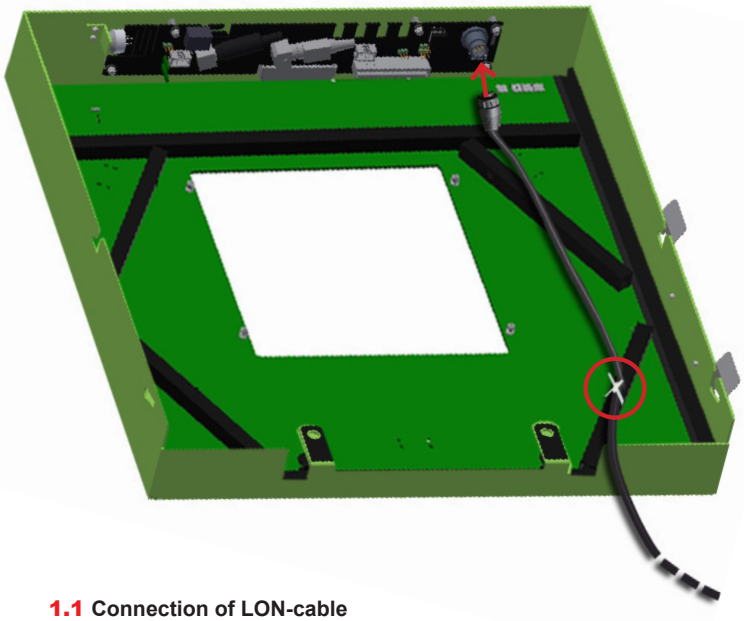


Assembly of the target – airguns 10m

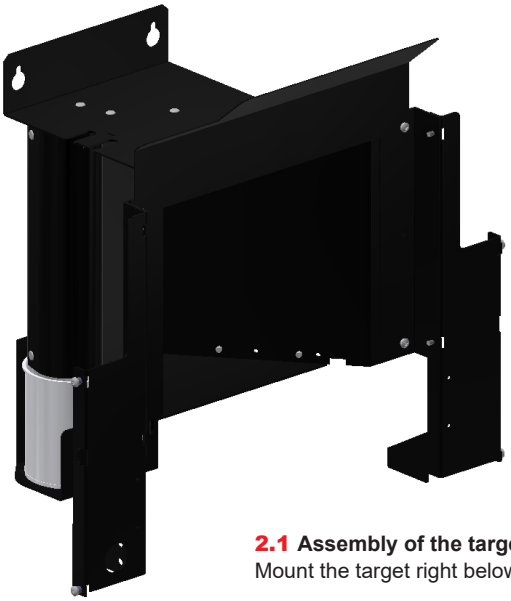
1 **Article no. LS10G2**
Target incl. reinforced front frame for airguns



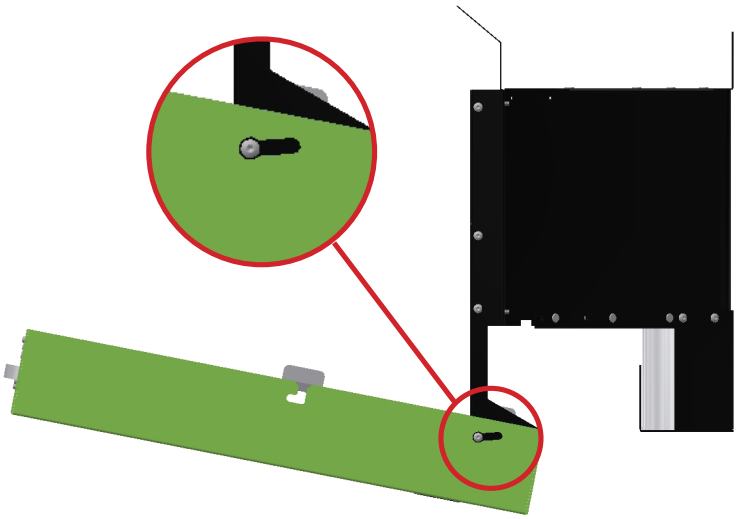


1.1 Connection of LON-cable
Plug the connector of the cable in, then affix it with the cable binder through the provided hole in the rods of the print.

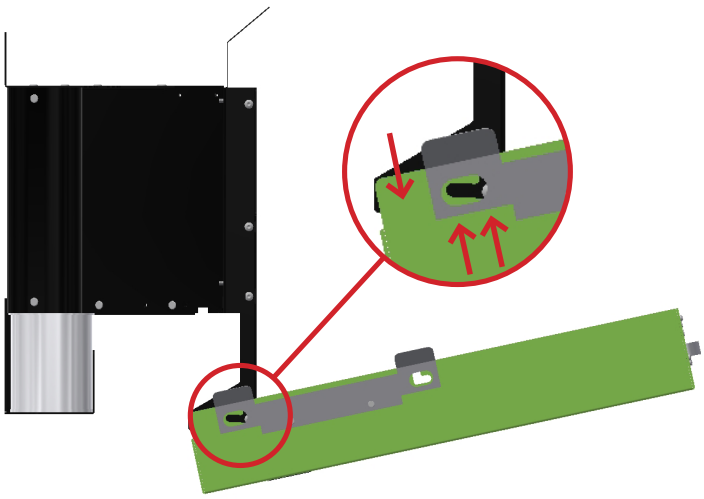
2 **Article no. LS10G2AN002**
Target holder incl. bullet trap for airguns



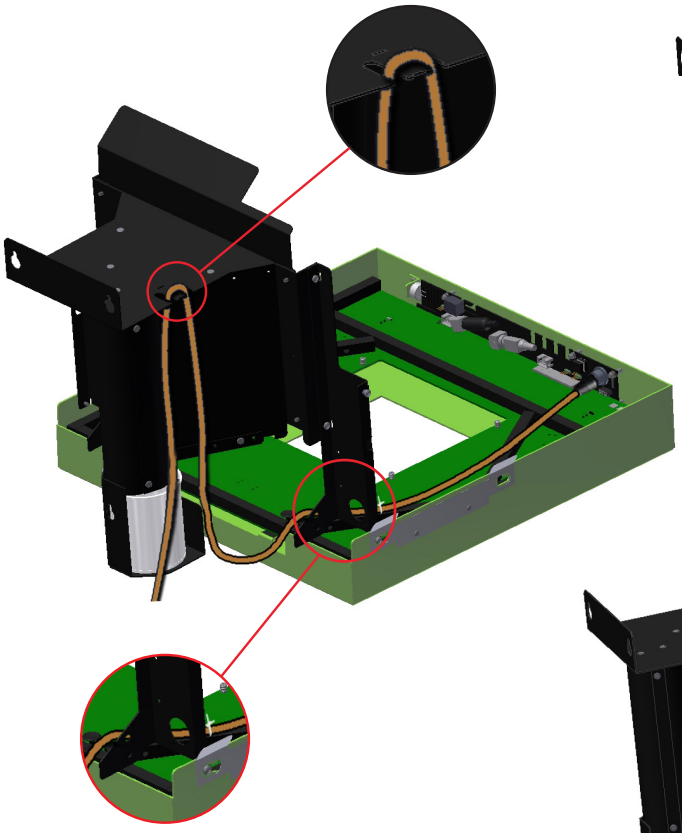
2.1 Assembly of the target with target holder
Mount the target right below into the target holder.



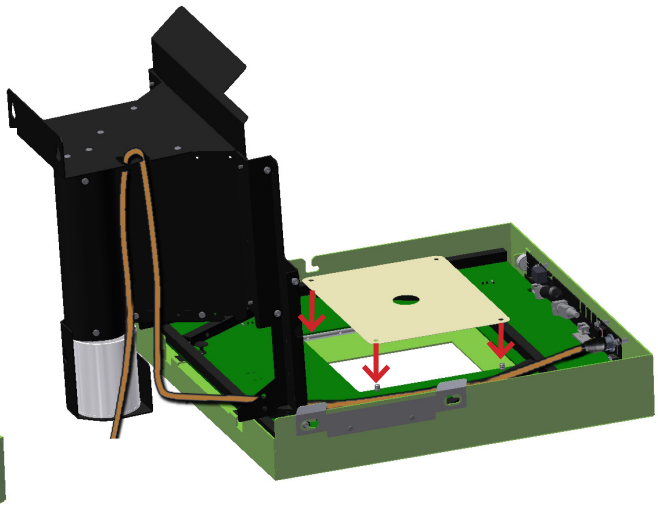
Next, push the locking plate left below to the side and mount it in as well, so that the target is connected with the target holder on both sides.



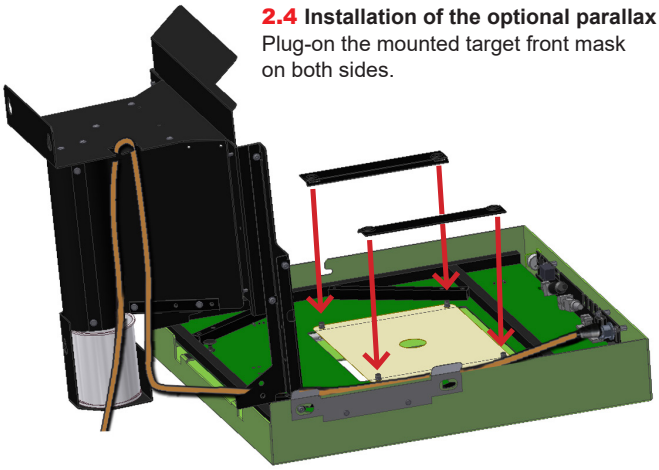
2.2 Thread of cables
Thread the LON cable through the frame of the target holder and strain relief (*don't* thread the cable through the hole).



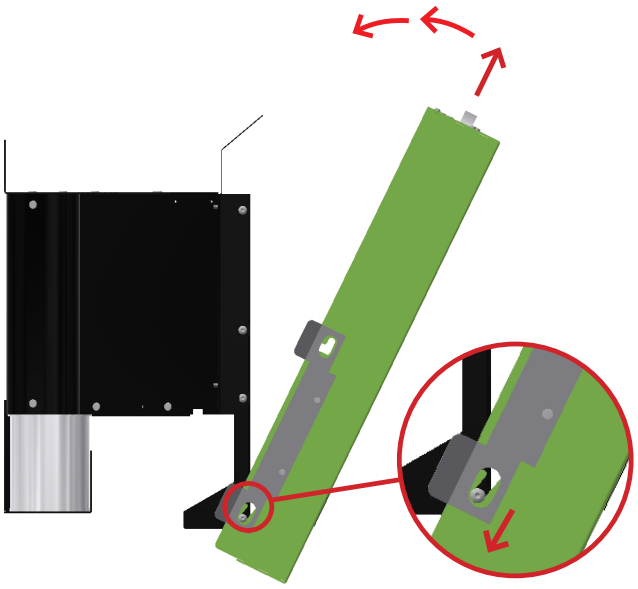
2.3 Mounting of the target front mask

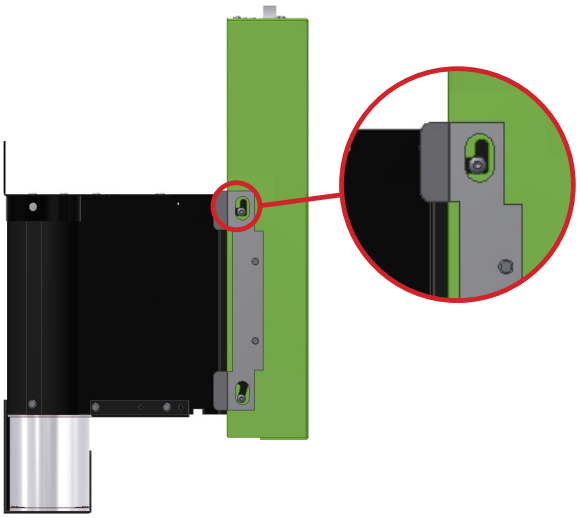


2.4 Installation of the optional parallax panels
Plug-on the mounted target front mask on both sides.



2.5 Assemble the target and the target holder
Pull the target upwards and move it towards the target holder until the locking plate clicks into position.

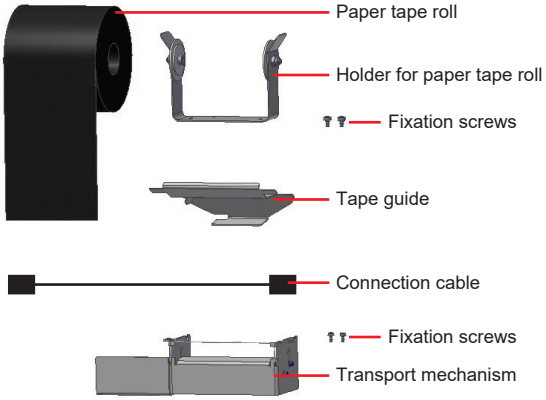




3 Article no. AZF046
Shot control paper

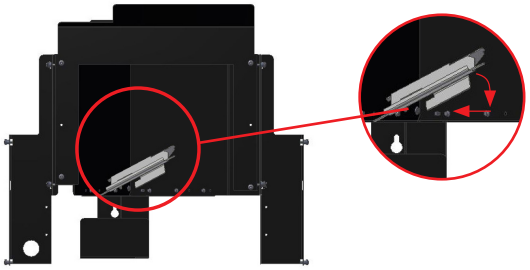
3.1 Mounting of shot control paper
Insert the shot control paper into the provided slot in the target holder/ bullet trap.

4 Art.-Nr. LS10G2AN008
Shot control mechanism
(for existing installations: disconnect from the power supply first)

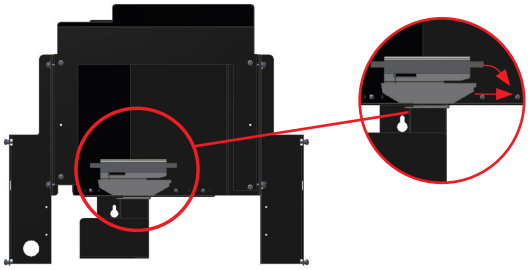


4.1 Mount the tape guide into the bullet trap
Mount the tape guide into the provided slot in the bullet trap as described below.

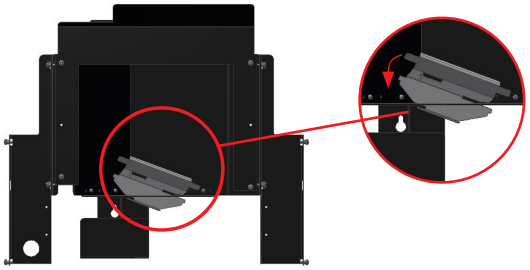
a)



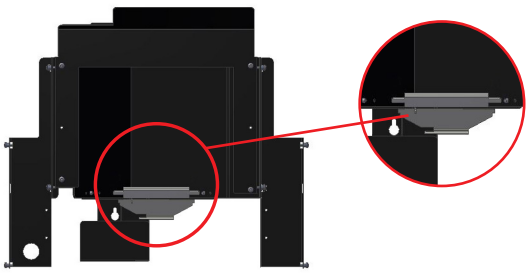
b)



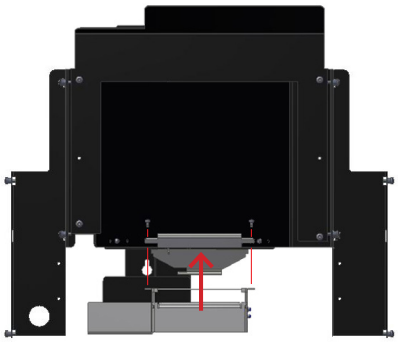
c)



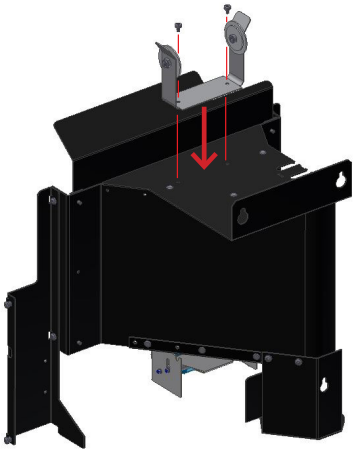
d)



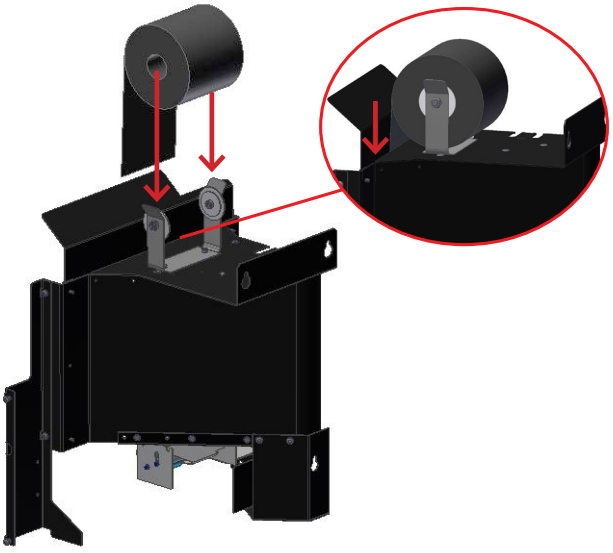
4.2 Mounting of transport mechanism
Mount the transport mechanism under the bullet trap with the provided screws.



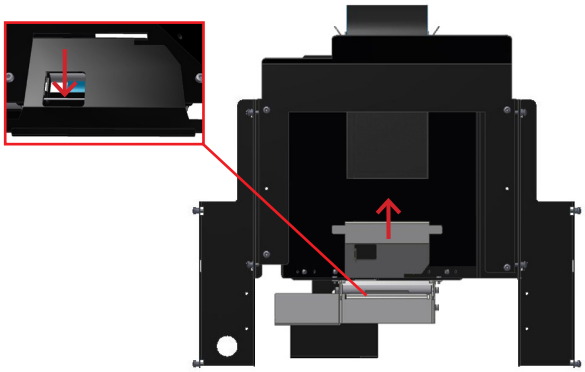
4.3 Mounting of the holder for paper tape roll
Mount the holder for the paper tape roll on the bullet trap with the provided screws.



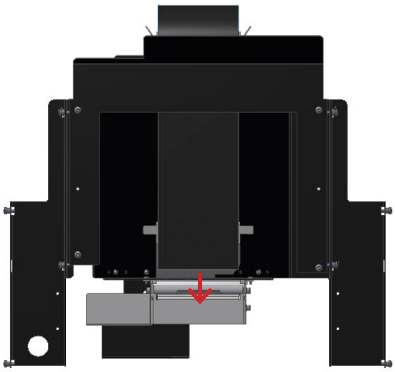
4.4 Mounting of the paper tape roll
Clamp the paper tape roll into the holder and insert the tape into the provided slot at the bullet trap.



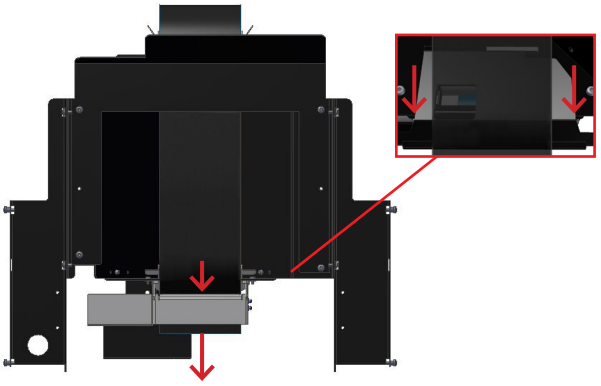
4.5 Mounting the tape into the shot control mechanism
a) Pull the tension spring of the shot control mechanism towards you. Then push the tape guide upwards.



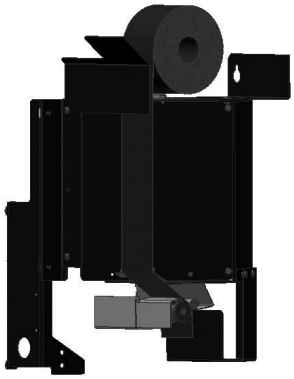
b) Insert the tape into the slot at the transport mechanism.



c) Pull the tape through the transport mechanism.
Then push the tape guide downwards until it closes.

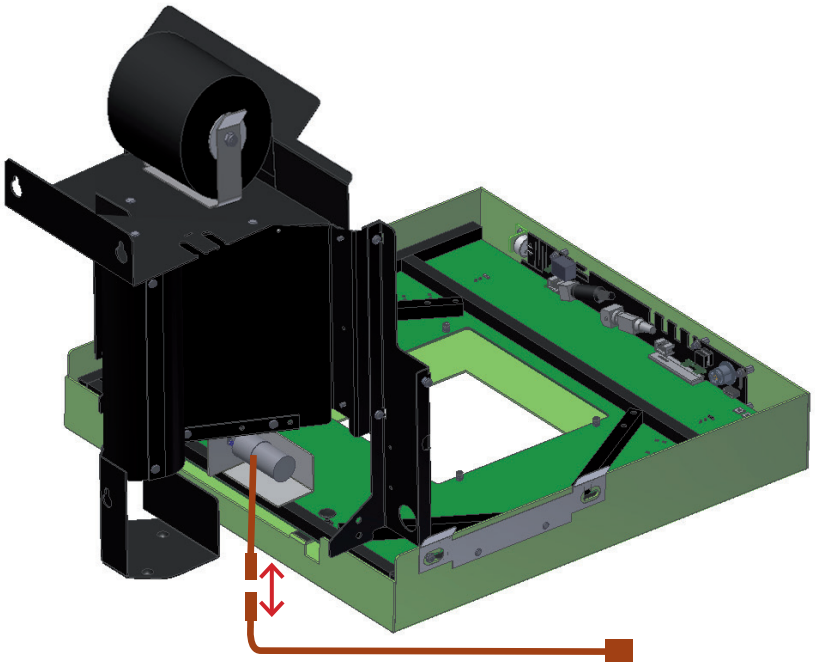


d) Side view of the mounted paper tape.

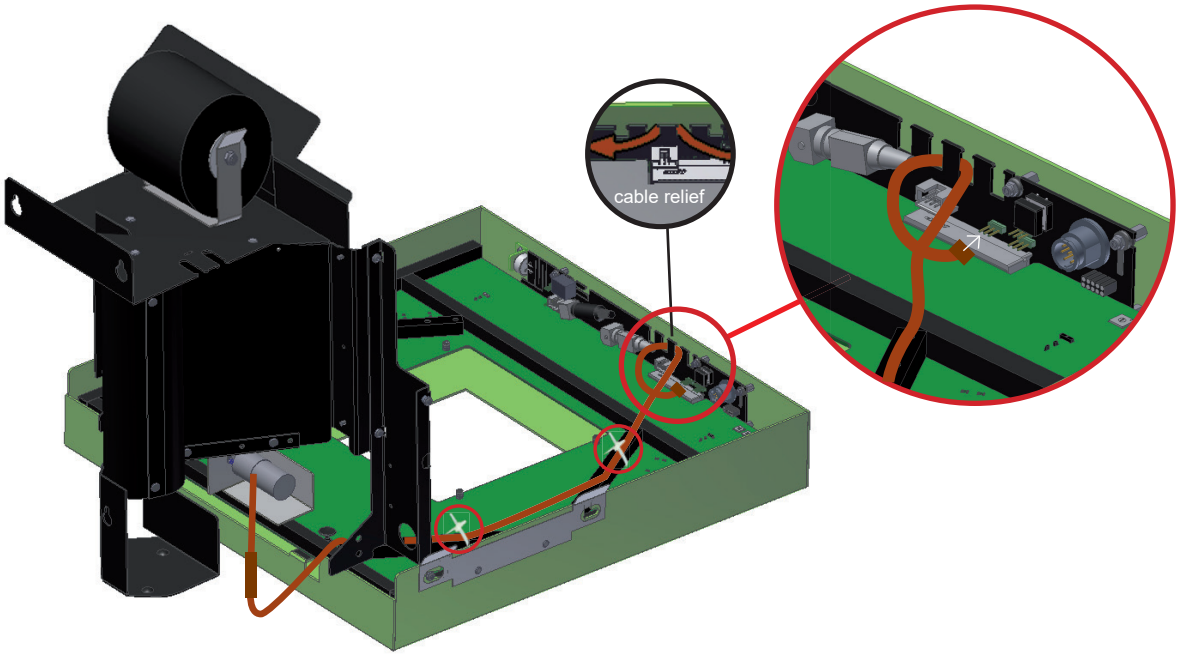


4.6 Power supply
The shot control mechanism can be connected with the target by using the connector cable.

4.6 a) Connect the cable of the shot control mechanism with the connector cable.



4.6 b) Insert the cable from behind into the target holder (*do not* thread it through the hole of the target holder) and affix it with the cable binders at the rods of the print. Ensure the cable relief (according to the drawing below) and plug the cable into the provided slot.



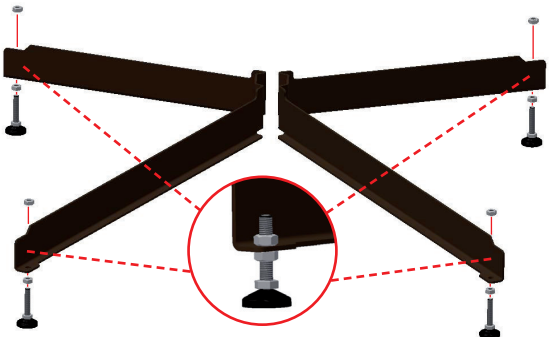
Mounting of the target

Installation on pedestal

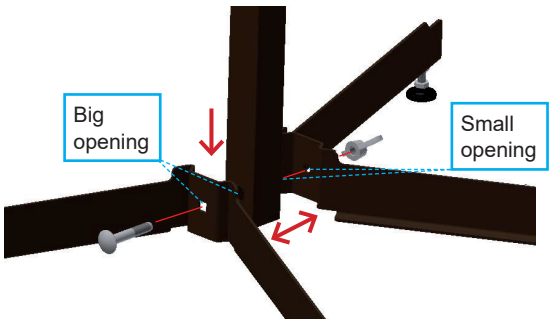
5 Article no. SHS08
Pedestal

5.1 Assembly of the pedestal

a) Mounting of the feet

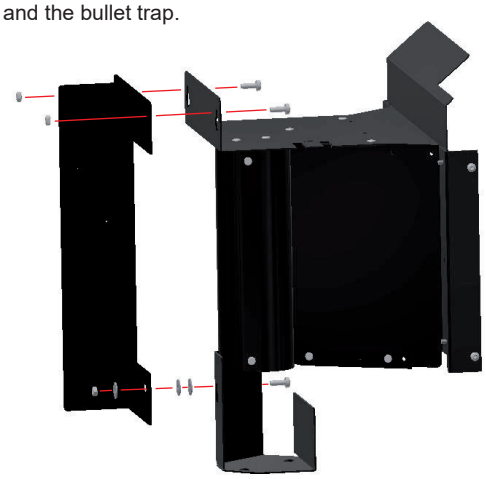


b) Fixation of retainer rod



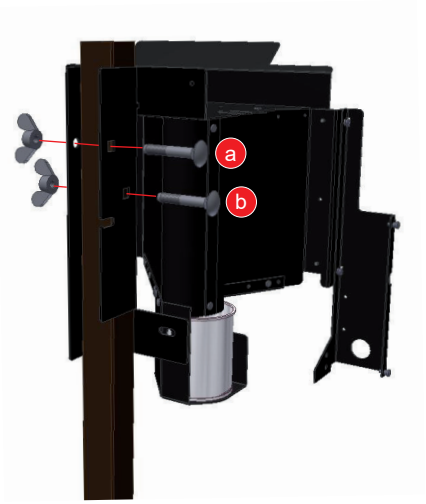
5.2 Mounting the holder on the bullet trap

Assemble the holder (needed for installation on the pedestal) and the bullet trap.



5.3 Attaching the bullet trap to the pedestal

The guide rail of the holder enables the mounting of the bullet trap to the pedestal.



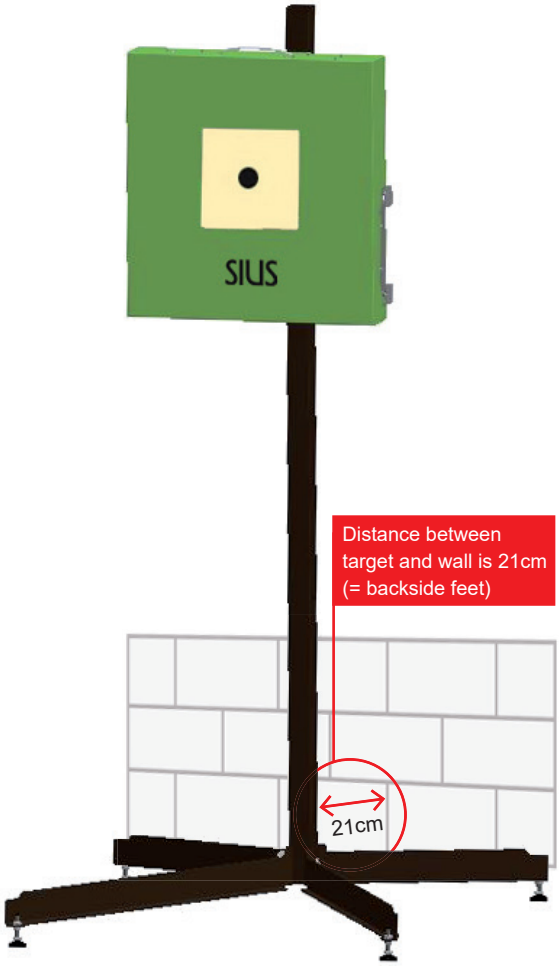
With the upper screw (a) the height can be adjusted variably.

The lower screw (b) enables the fixed setting of the 3 positions (standing 140cm > kneeling 80cm prone 50cm) through the provided holes in the retainer rod.

Mounting of the target

Installation on pedestal

5.4 Assembly of target and connection of the cables
See page 3–5

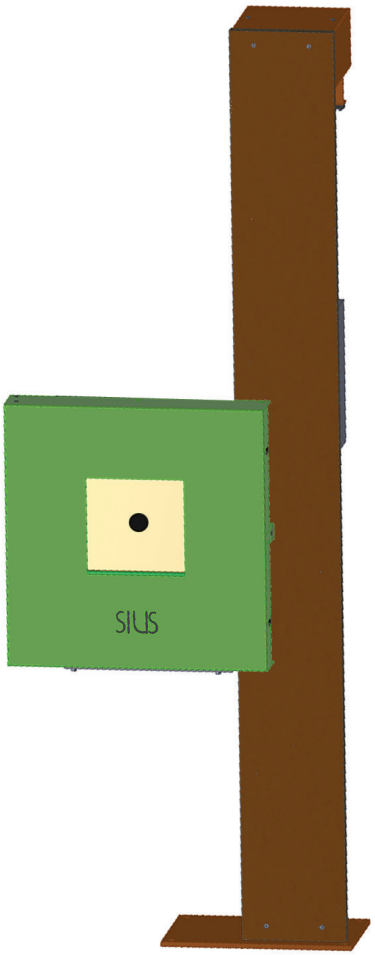


Installation on automated target elevator

6 Article no. ATE10G2V6
Automated target elevator for airguns

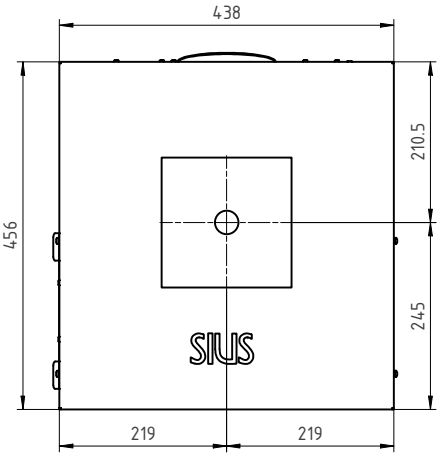
6.1 3 positions target elevator for LS10. The target is attached to the target elevator from the back.

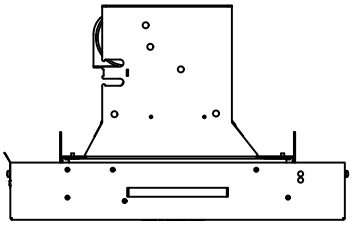
Detailed information: installation manual ATE10 for LS10G2 > B-INBE-ATE10G2V6/7-en

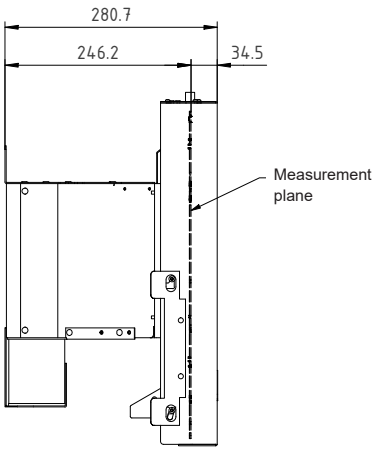


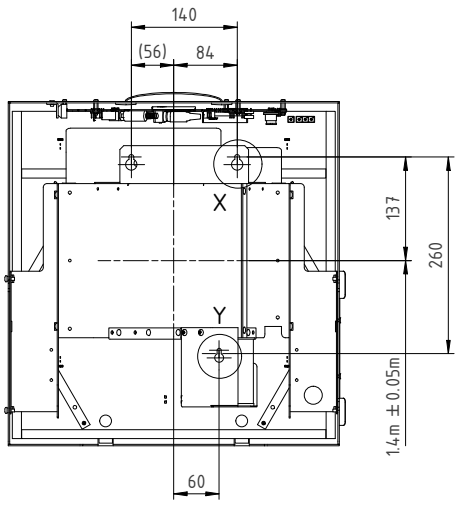
Mounting of the target

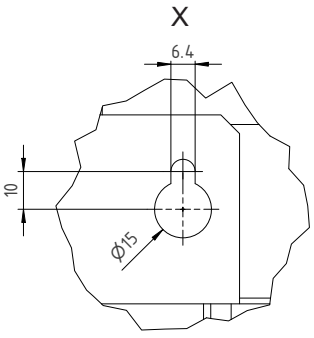
Mounting on the wall

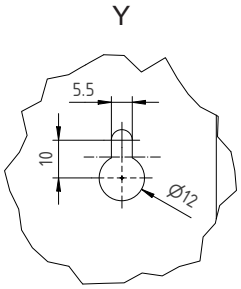












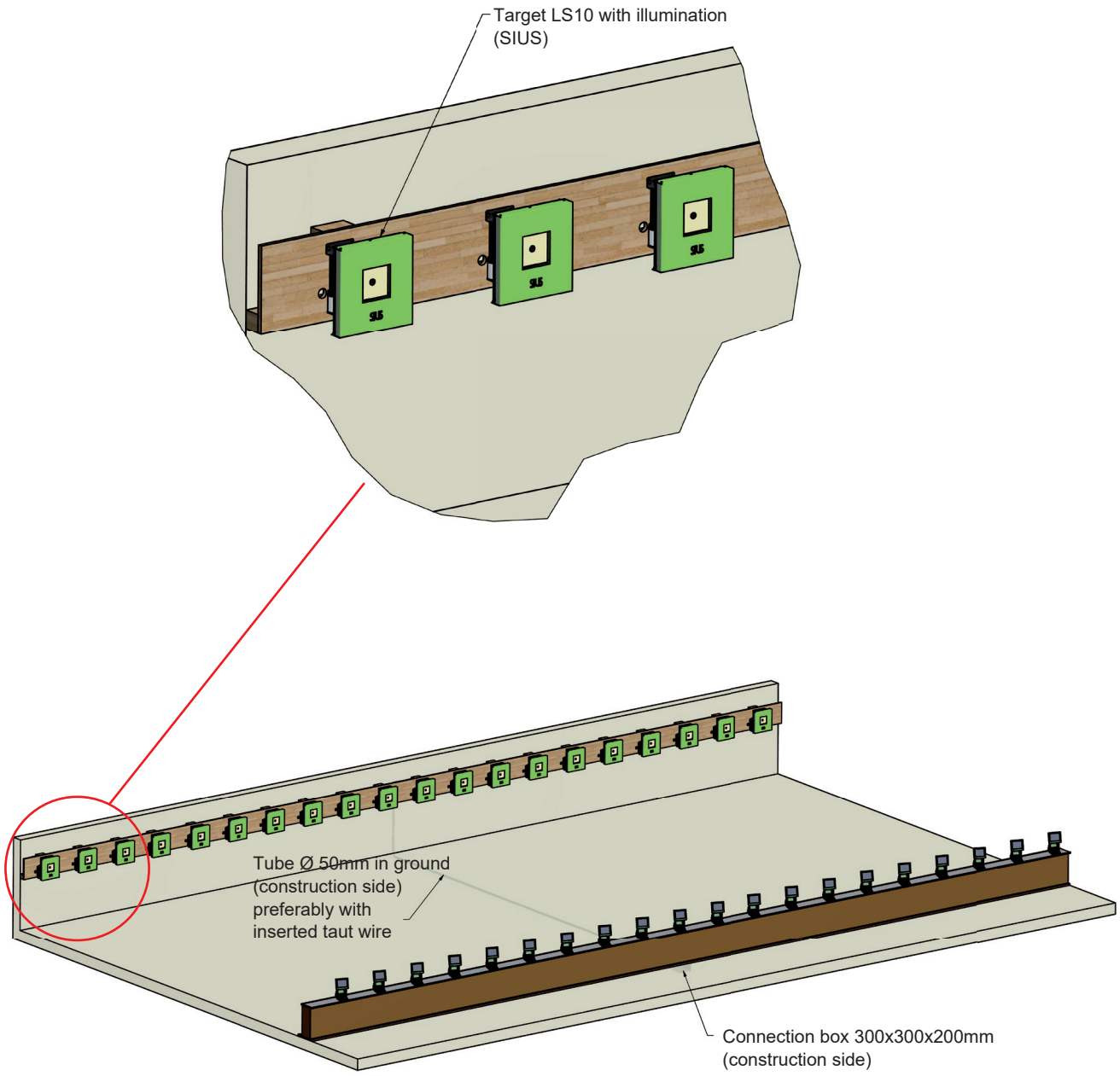
Mounting the target on the wall through the holes on the back of the target holder.

Example of an installation

Mounting on the wall

Example of an installation (overview)

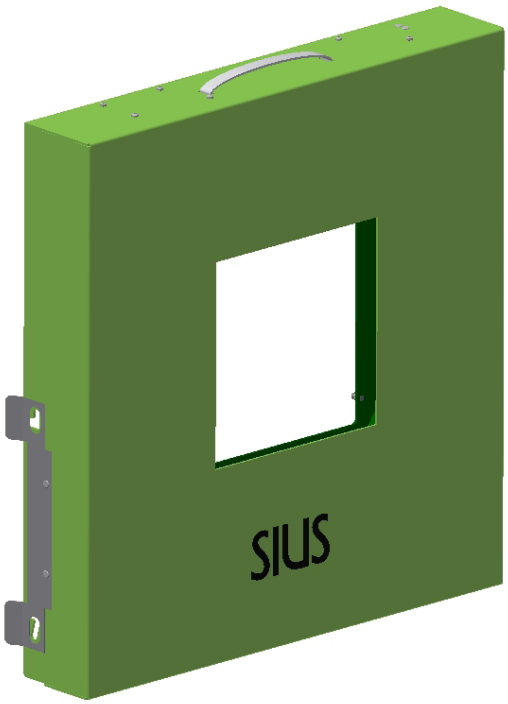
Mounting on the wall



Illumination:
Do not use halogen lamps or electric bulbs. Infrared light could interfere with the system.
For all outside installations we recommend CFL / gas discharge lamps.

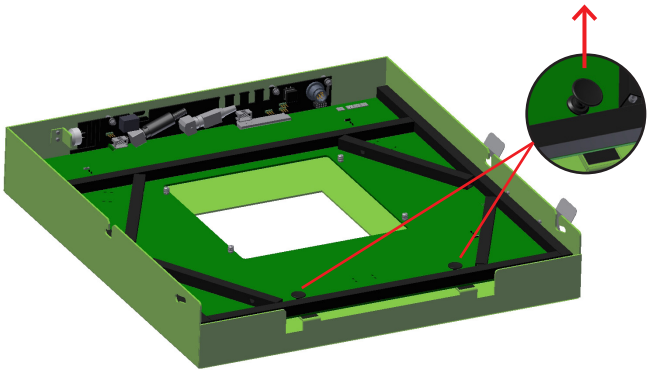
Assembly of the target – small bore rifle 50m

1 **Article no. LS10G2**
Target incl. reinforced front frame for airguns and LON cable

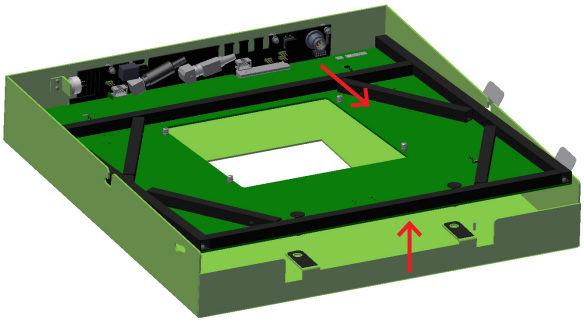


1.1 Removing of the Printed Circuit Board (Print)
The print has to be removed out of the target, before mounting the rubber membrane and the LON cable.

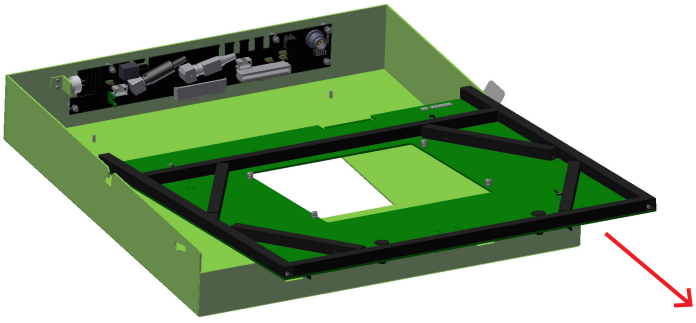
Pull out the mechanical interlock buttons of the print (must be locked again when closing the target).



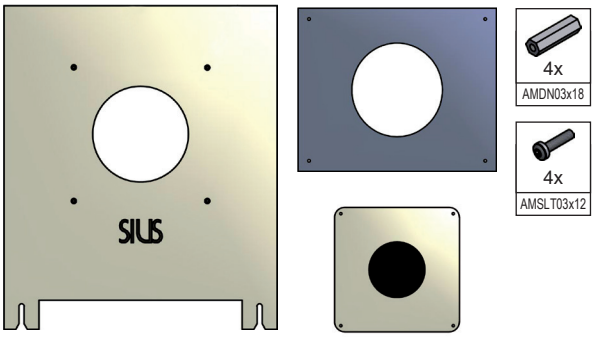
Unclip by raising and pulling.



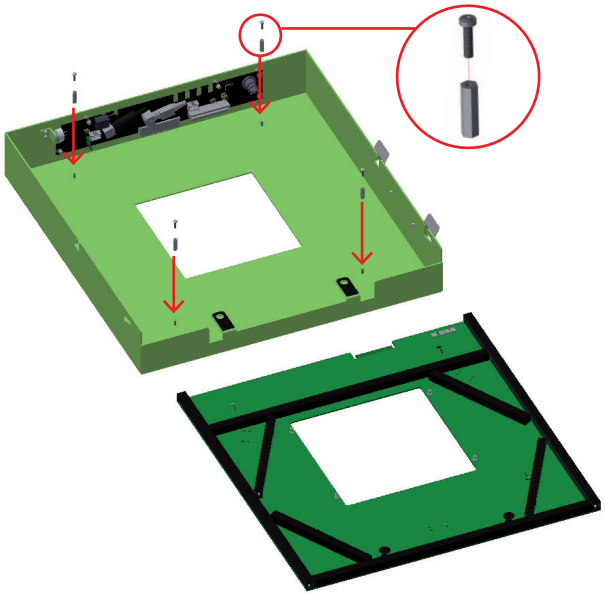
Pull out the whole print.



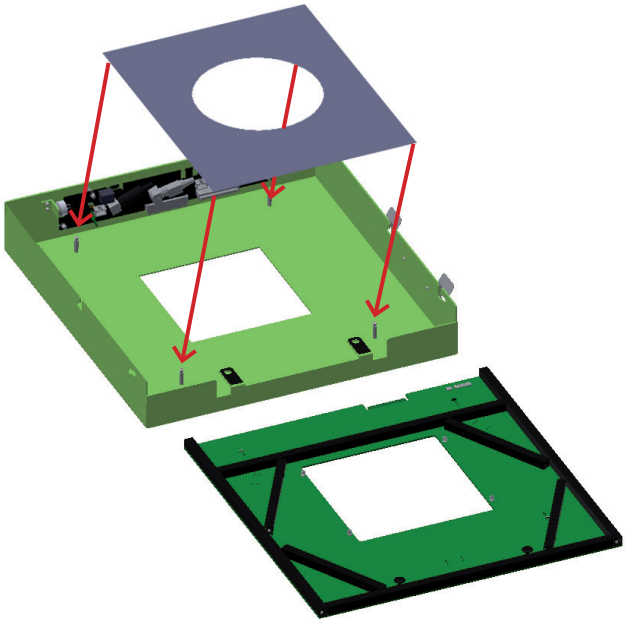
2 **Article no. LS10AN007**
Reinforced front frame for small bore rifle
incl. rubber membrane and target front mask



2.1 Screws for rubber membrane
Install the screws, which are needed to mount the rubber membrane.



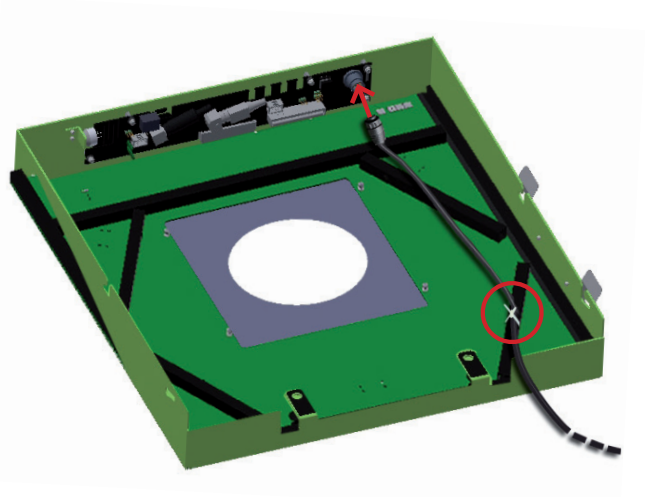
2.2 Mounting of the rubber membrane
(used for sun protection)
Hook the rubber membrane onto the screws.



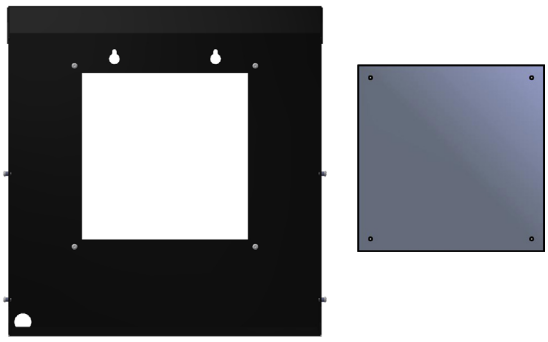
(Installation of the target front mask and the reinforced front frame is carried out later)

2.3 Connection of the LON cable
Insert and lock the print according to point 1.1.

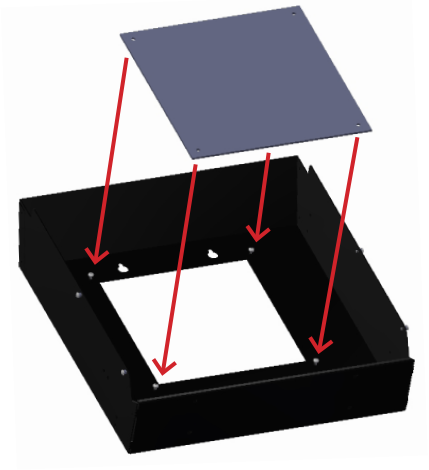
Plug the connector of the cable in, then affix it with the cable binder through the provided hole in the rods of the print.



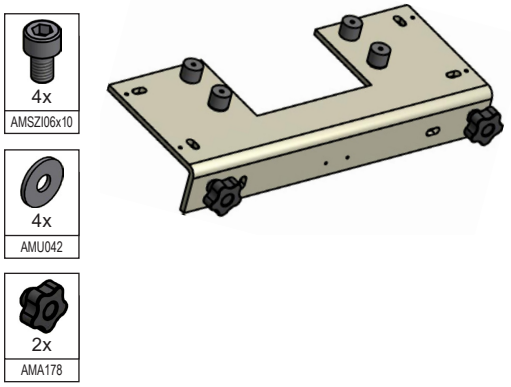
3 Article no. LS10G2AN001
Target holder
incl. rubber sheet



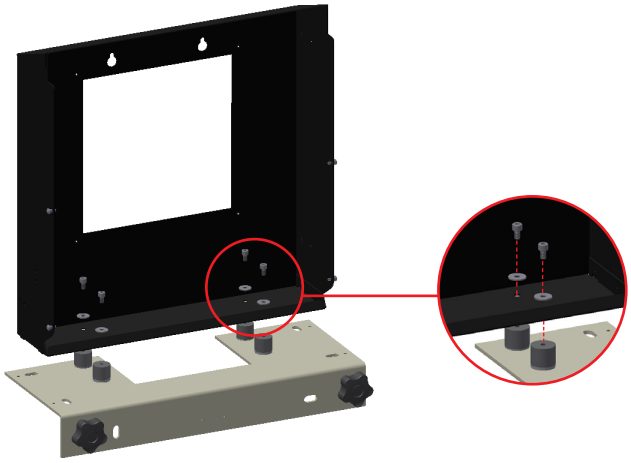
3.1 Installation of the rubber sheet
Hook the rubber sheet onto the screws.



4 Article no. LS10AN008
Mounting plate

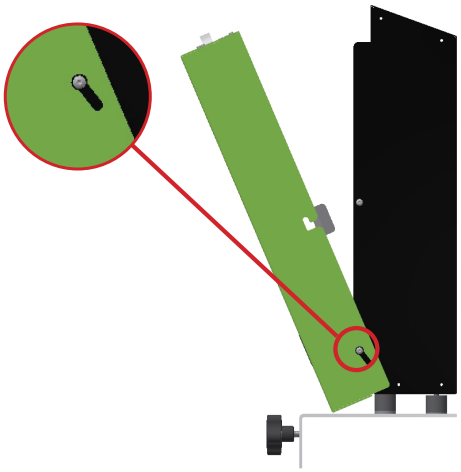


4.1 Installation of target holder on mounting plate

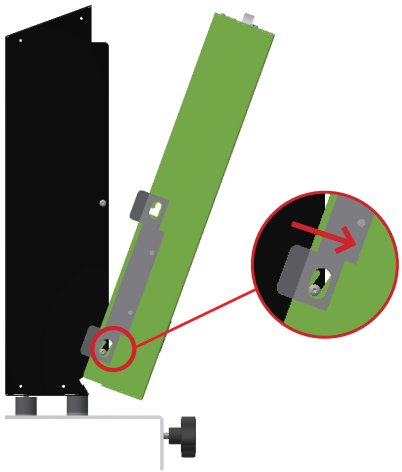


5 Assembly of target and target holder

5.1 Mount the target right below into the target holder.

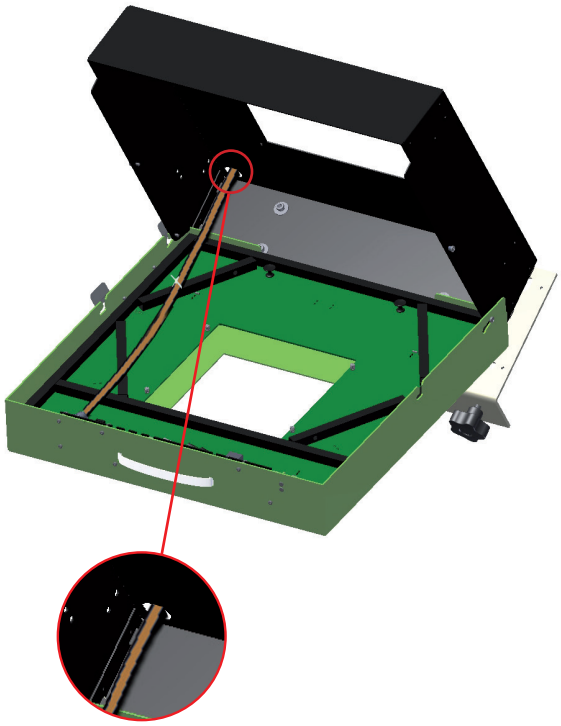


5.2 Next, push the locking plate left below to the side and mount it in as well, so that the target is connected with the target holder on both sides.



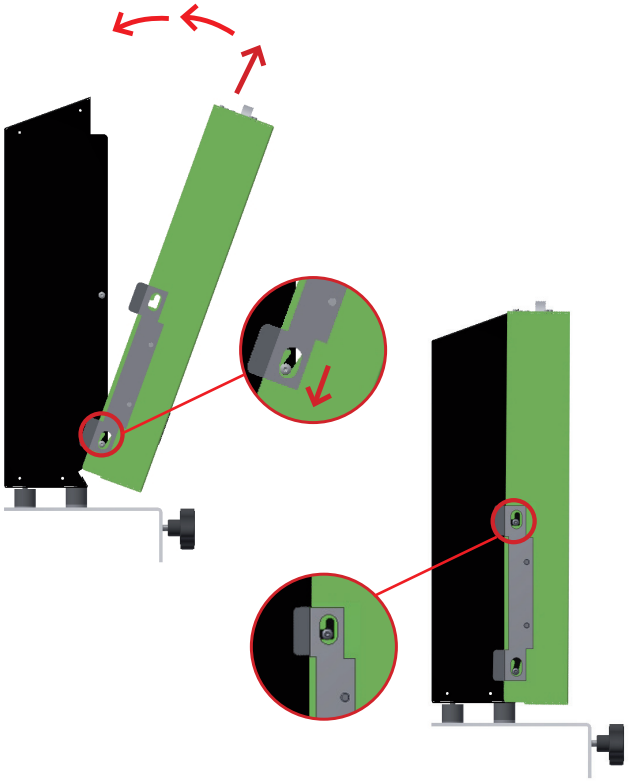
6 Installation of the LON cable

6.1 Install the LON cable through the provided hole in the target holder.

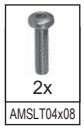


7 Closing the target

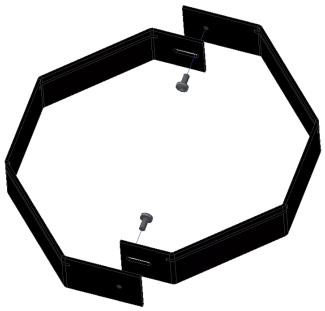
7.1 Pull the target upwards and move it towards the target holder until the locking plate clicks into position.



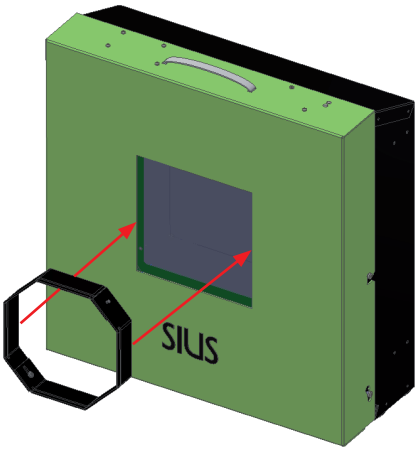
8 Art.-Nr. HS10AN011 Shatter protection



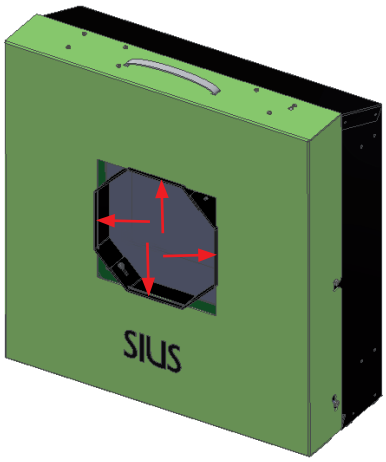
8.1 Screw the parts together.



8.2 Insert the shatter protection.

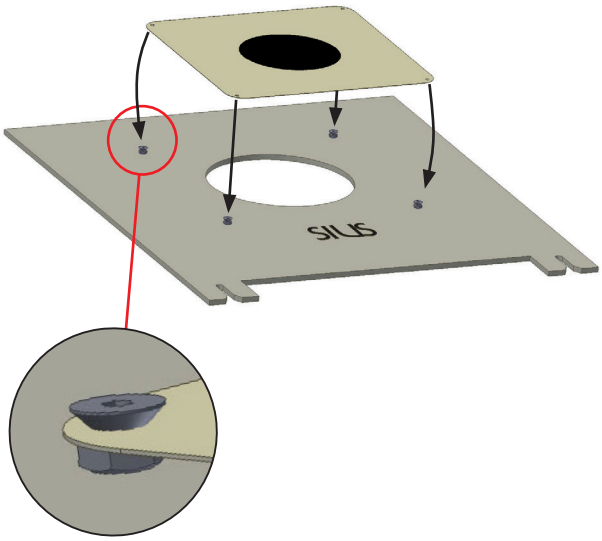


8.3 Press apart, so that the edges of the target snap into the corresponding slots of the shatter protection.

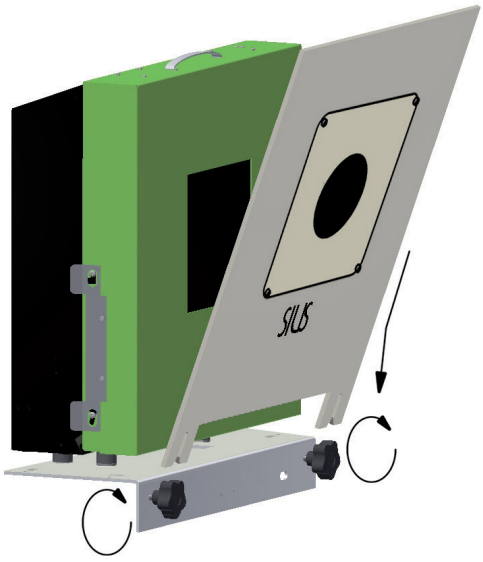


9 Mounting of the front mask

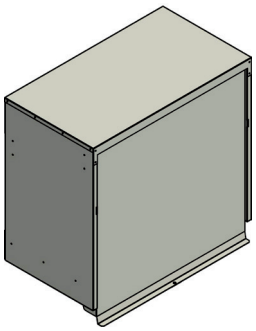
9.1 Mount the front mask to the reinforced front frame.

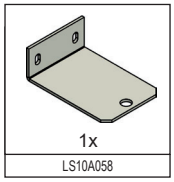


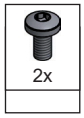
9.2 Installation of the reinforced front frame on the mounting plate.

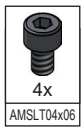


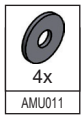
10 Art.-Nr. LS10AN010 Weather protection box



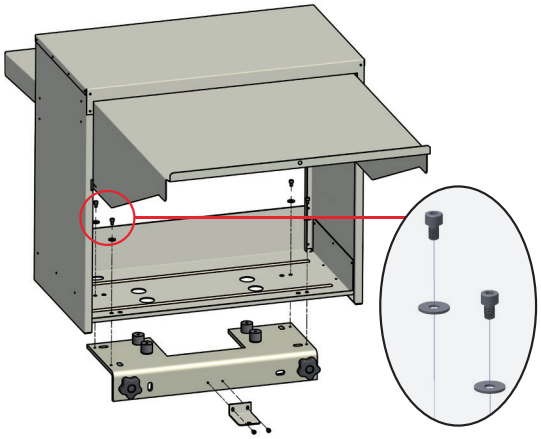




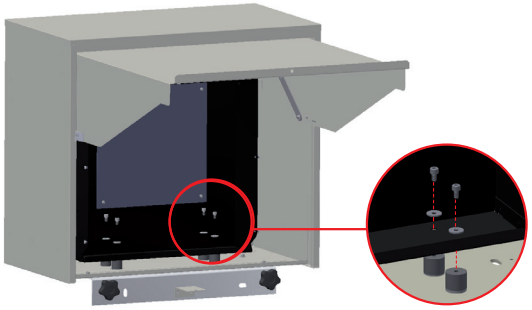




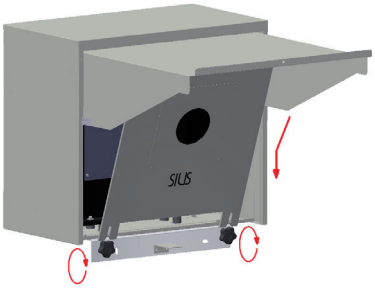
10.1 Installation of weather protection box
Install the weather protection box on the mounting plate.



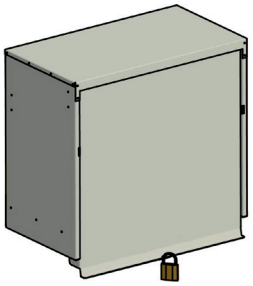
10.2 Installation of target holder
Mount the target holder on the mounting plate inside the weather protection box. (>Assembly of target and target holder according to point 5, page 16).
(>Laying of cables according to point 6, page 17).



10.3 Installation of the reinforced front frame
Install the reinforced front frame on the mounting plate.



10.4 Closure of the weather protection box



Mounting of the target

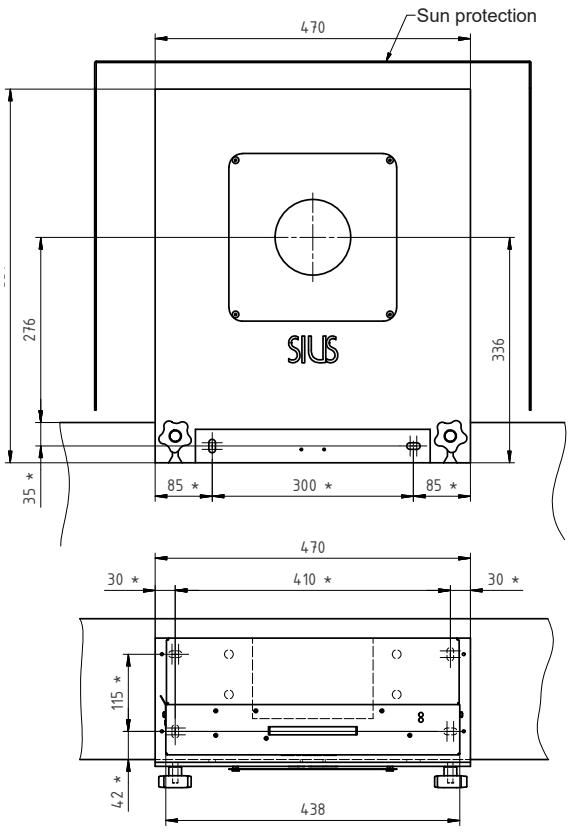
Installation on automated target elevator

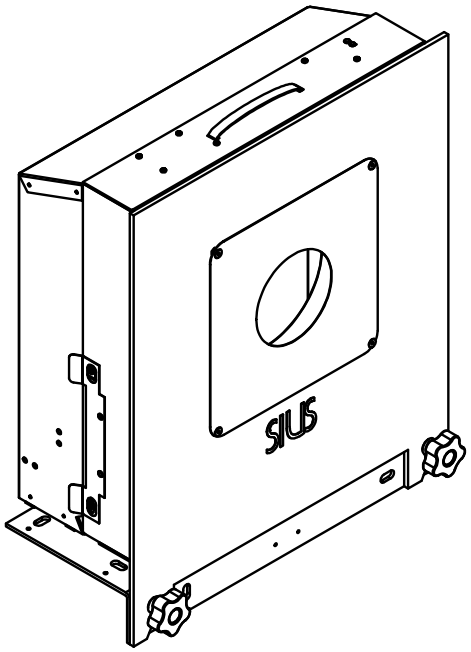
1 **Article no. ATE10G2V7**
Automated target elevator for small bore rifle

1.1 The target is attached to the automated target elevator from the back.
Detailed information: installation manual ATE10 for LS10G2 > B-INBE-ATE10G2V6/7-en

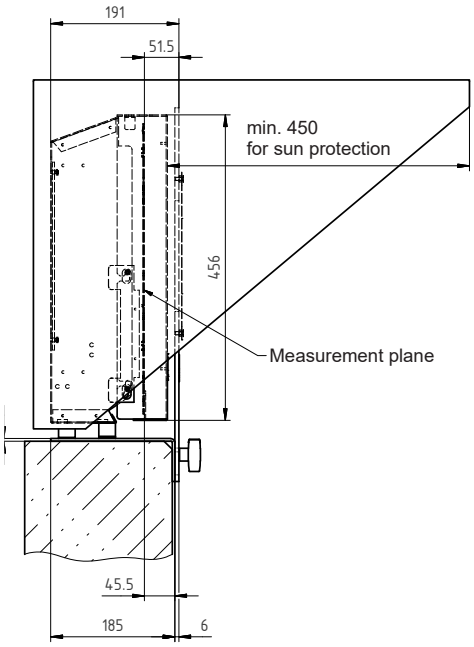
Mounting of the target

Installation on a beam





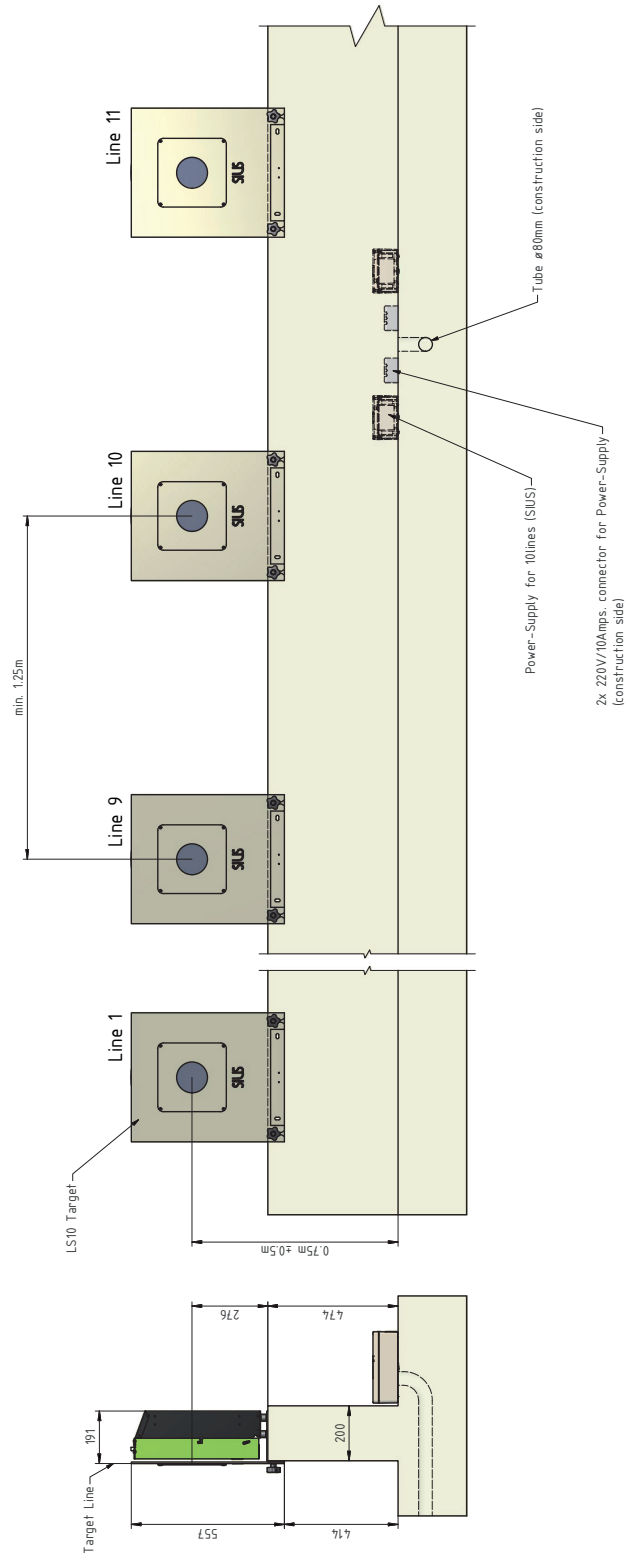
* = Installation, all holes for screws MB



By using the mounting plate the target can be installed on the beam.
Be aware, that the target should not be exposed to direct sunlight.

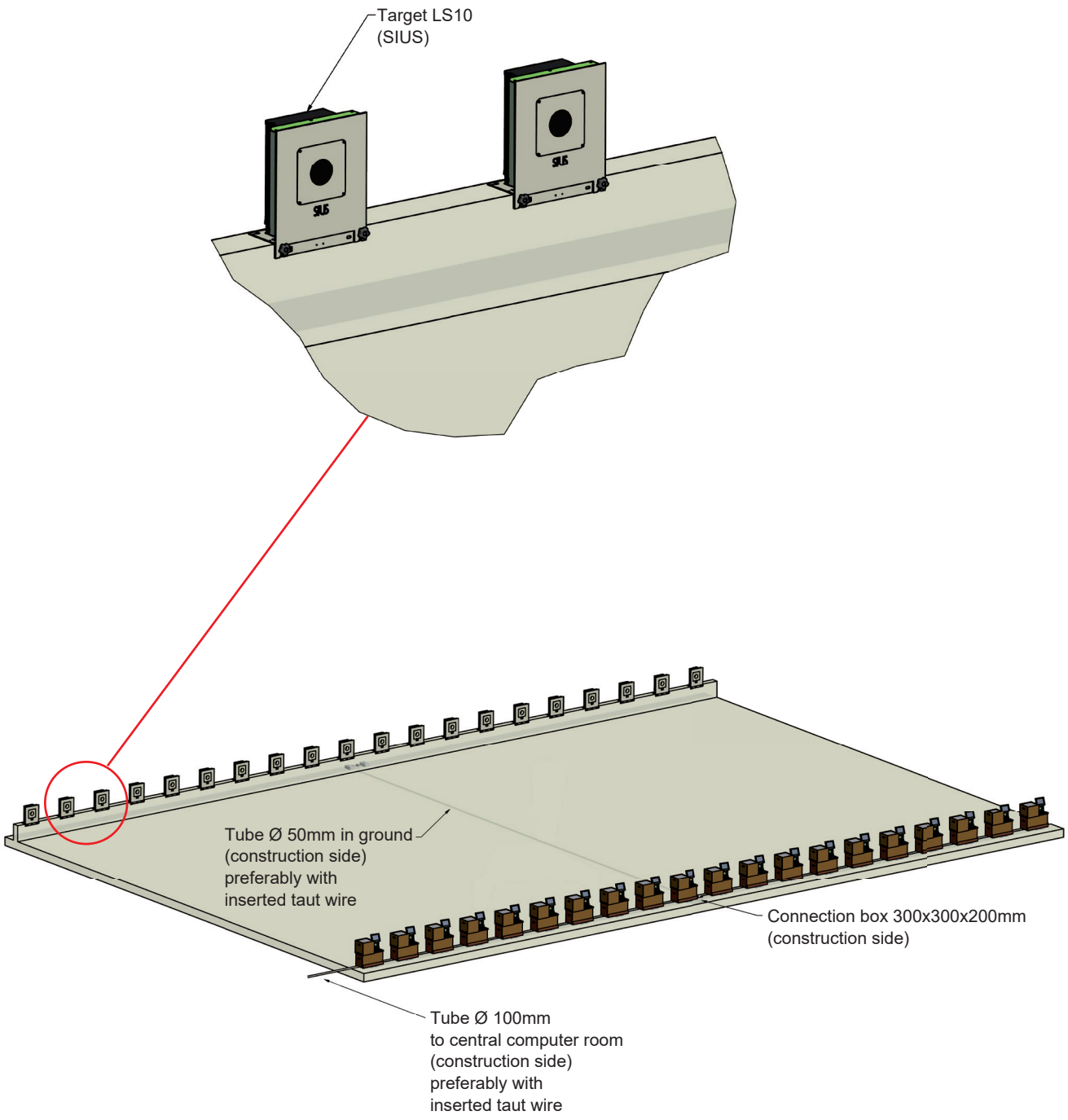
Example of an installation

Installation on a beam



Example of an installation

Installation on a beam

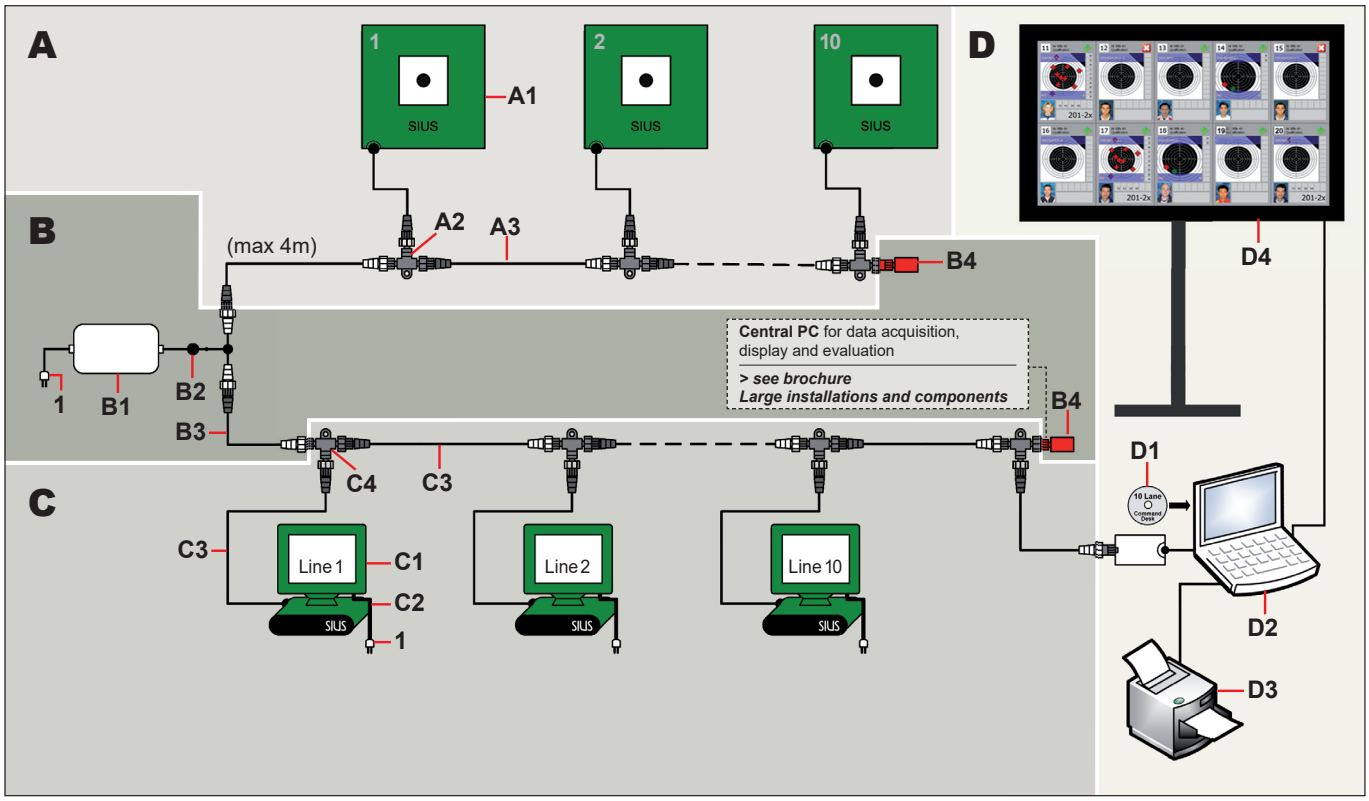


Illumination:
Do not use halogen lamps or electric bulbs. Infrared light could interfere with the system.
For all outside installations we recommend CFL / gas discharge lamps.

Air rifle / air pistol installation 10m and small bore rifle installation 50m

Installation overview for 1–10 lanes

The installation is divided into 3 article groups: article group target line (A), article group for cables and power supply (B) and article group firing line (C). The article group for cables and power supply (B) is designed for 10 lanes maximum. The article groups target line (A) and firing line (C) are needed 1x per lane. The «10 Lane Command Desk» (D) enables the central printing and the display of the connected lanes for the spectators (see SIUS website > Products > «10 Lane Command Desk»).
In addition, country-specific power supply cables are required (device to country specific plug = pos. 1).



Pos.	Article no.	Pcs.	Description
A	**Article group target line**		
A1	LS10	1	Target 10m resp. 50, incl. LED Illumination
A2	KL001-T	1	T-Adapter fem/fem/male LTW IP67
A3	KL001-2.0	1	Cable LTW male–fem 2.0m
B	**Article group cables and power supply**		
B1	NT211V0	1	Power supply for 10 lines 225W with LTW 230V
B2	KL013	1	Y power cable for NT211
B3	KL001-20.0	1	Cable LTW male–fem 20.0m (for 10m)
	KL001-65.0	1	Cable LTW male–fem 65.0m (for 50m)
B4	KL001-R	2	Terminating resistor, red, male LTW IP67
C	**Article group firing line**		
C1	M951	1	Monitor TFT 10.4“ (26cm) Touchscreen, incl. power supply AAG233, USB connection cable for touchscreen and protection cover M951AN001.
	AA253-1.5	1	Connection cable USB 2.0, 1.5m (option if monitor is installed separately from CU951)
	KV012-1.5-MM	1	Cable extension VGA, 2.0m (option if monitor is installed separately from CU951)
C2	CU951-CLUB	1	Control unit for clubs, schools etc. (ISSF approval phase 1 and 2)
	CU951-ISSF	1	Control unit with software for ISSF competitions (ISSF approval phase 1, 2 *and 3*)
C3	KL001-2.0	1	Cable LTW male–fem 2.0m
C4	KL001-T	1	T-Adapter fem/fem/male LTW IP67
D	**10-Lane-Command-Desk** (option)		
D1	TLCD	1	Software 10-Lane-Command-Desk incl. USB-LON-Dongle SNI210-TLCD (blue)
D2		1	Windows PC with up-to-date hardware (on request or provided directly by customer)
D3		1	Laserprinter (on request or provided by customer)
D4		1	Monitor for spectators > TV / beamer in any size (on request or provided directly by customer)
1			Country-specific power supply cable > AA1**

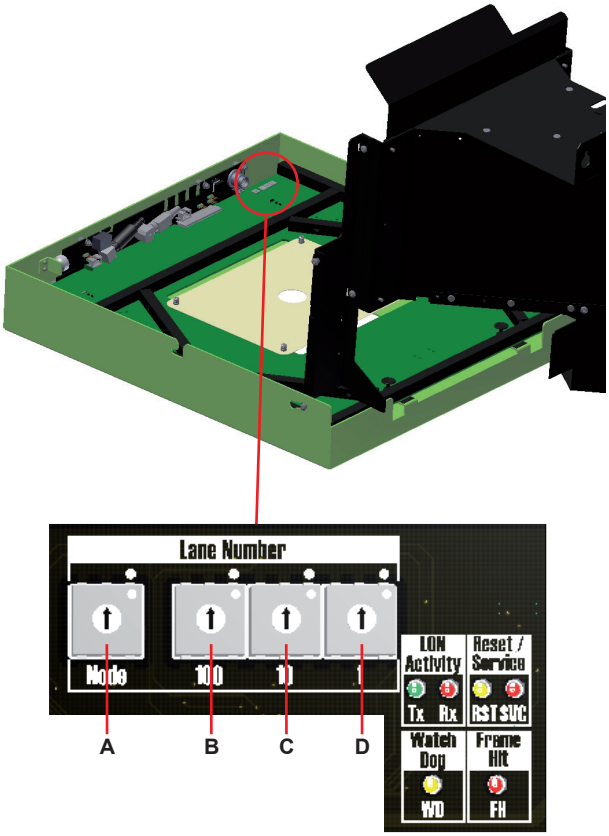
Start-up of the installation

1 Check in advance

- Are all devices connected according to the instructions?
- Are there any visible damages on devices or cables?
- Corresponds the voltage of the power supplies set to the voltage of the electric power supply?

2 Set the lane no. on the target

The lane no. is set by turning the arrow on the number plate to the corresponding figure, using a screwdriver. *Numbering is made from the left to the right.*



A = Node no.
Leave the setting on 0.

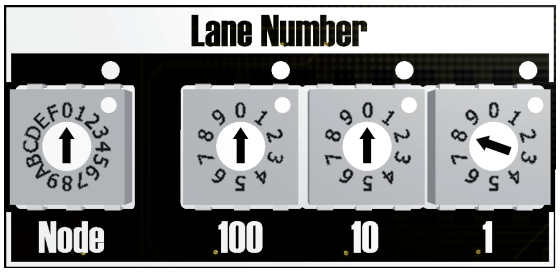
B = 100-no. setting
If more than 100 targets are connected, the according 100-no. can be chosen.
Otherwise leave the setting on 0.

C = 10-no. setting
If more than 10 targets are connected, the according 10-no. can be chosen.
Otherwise leave the setting on 0.

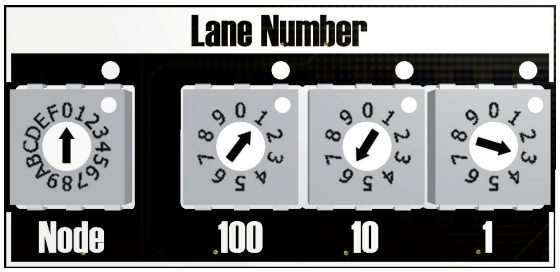
D = 1-no. setting
The according 1-no. is set.

3 Examples of setting the lane no. on the target

Setting lane no. 8:



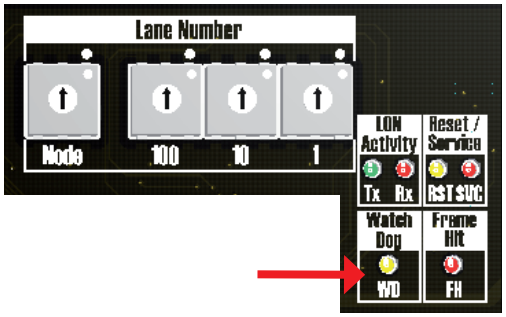
Setting lane no. 163:



4 Connecting to the electricity network

Connect all devices to the electricity network.

5 Control of the operating lamp

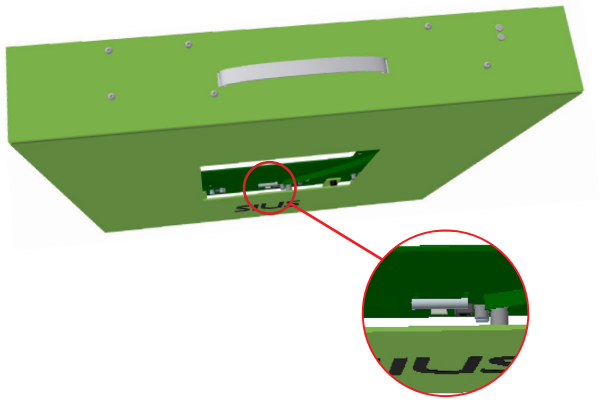


After proper installation and connecting to the electricity network the operating lamp WD blinks in a inverval of 1/2 second.

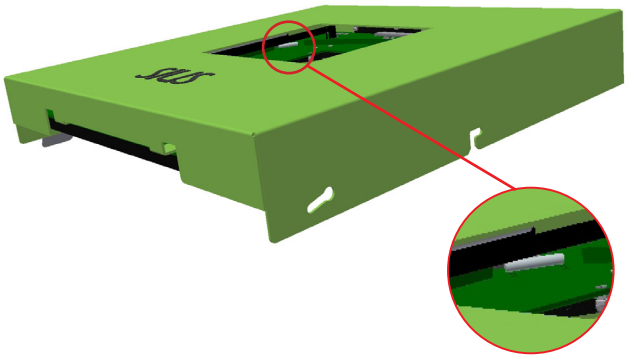
6 Control of detection system transmitters

All three transmitters of the measuring system need to glow.

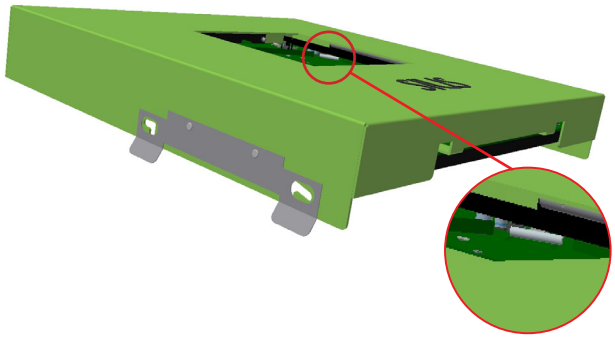
Transmitter below:



Transmitter left above:



Transmitter right above:



7 Closing the target

After closing the target, check that there are no cables in the firing line.

8 Configuration of control unit at firing point

The control unit (for example SA941 or PC/Laptop with LON-Dongle and software SIUSLANE) can be configured at this time.

TIP

With a PC and the software LON-Organizer installed the functionality of all installed components in the network can be checked.

Software LON-Organizer > ***http://sius.com > Downloads***

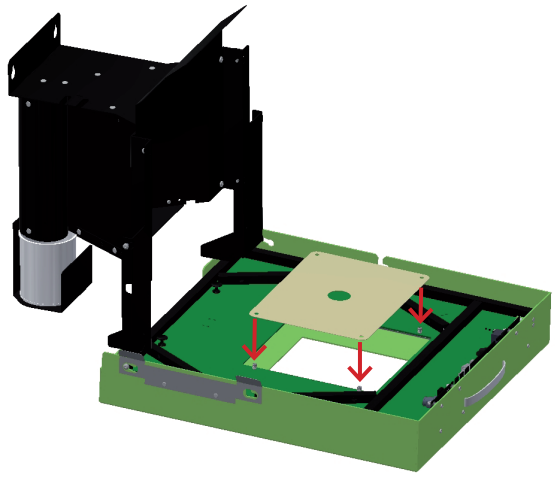
Maintenance and function test

1 Cleaning

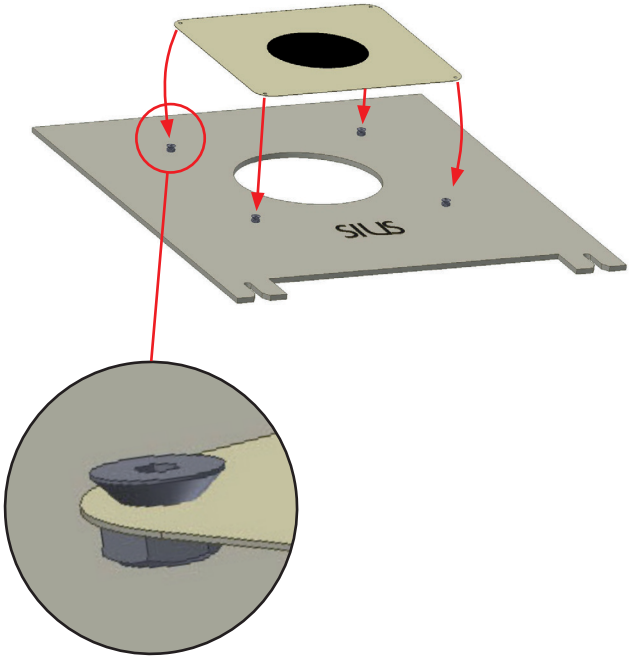
– Remove all dust and dirt with a vacuum cleaner
– Clean the detection system (transmitter and receiver) with a soft damp cloth (do not use any cleaning agent)

2 Replacing a worn out target front mask

The target front mask should be replaced if its circular shape is not visible anymore or if it is in such a bad condition that the optic of the target is affected. From a technical perspective this has no influence on the overall function of the target.



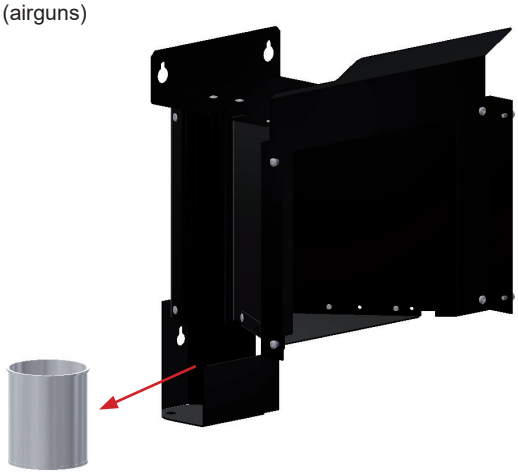
For the 10m target the front mask can be replaced from inside.



For the 50m target the front mask can be replaced outside directly on the reinforced front frame.

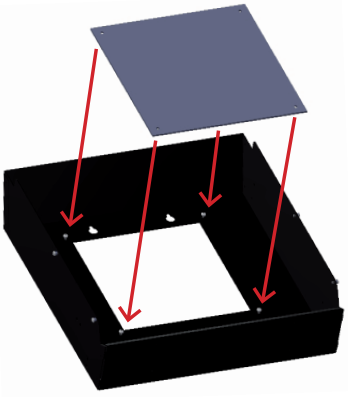
3 To empty the bullet trap

(airguns)



Slide out and empty 10m bullet trap periodically.

4 Replacement of rubber sheet and the rubber membrane (small bore rifle)

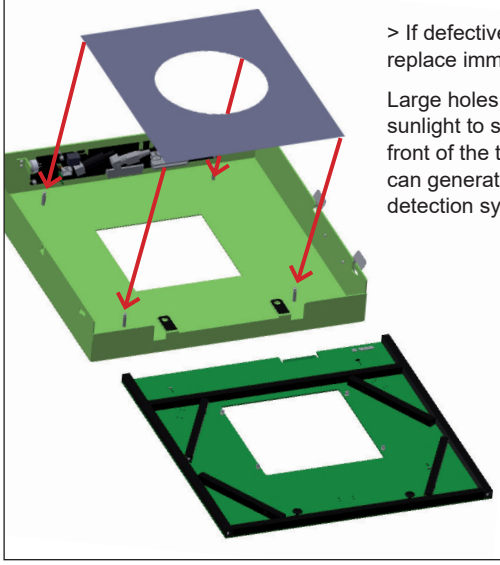


Rubber sheet LS10A042 inside the target holder (back)

> If defective/torn replace immediately

Large holes can permit sunlight to shine into the back of the target. Defective or overfilled bullet traps can kick back debris.
Both can generate errors in the detection system.

Rubber membrane LS10A041 inside the target (front)

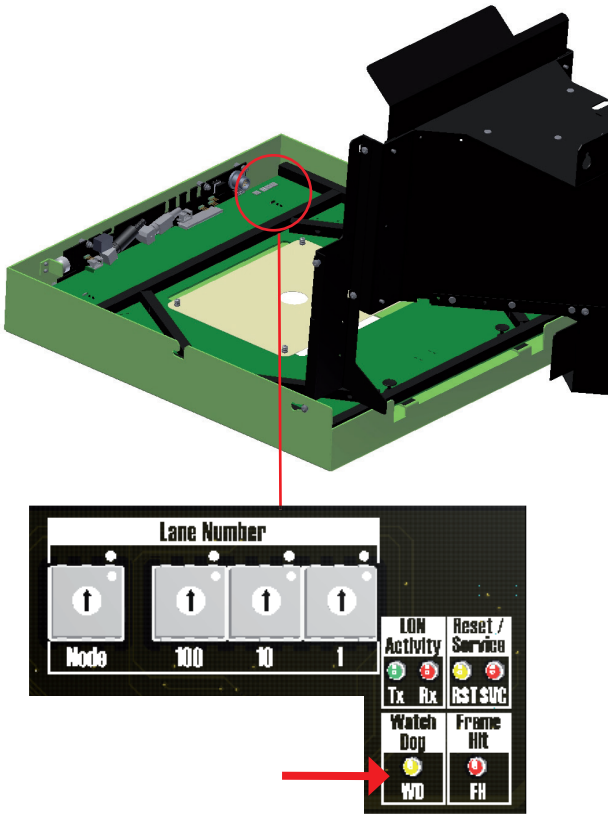


> If defective/torn replace immediately

Large holes can permit sunlight to shine into the front of the target. This can generate errors in the detection system.

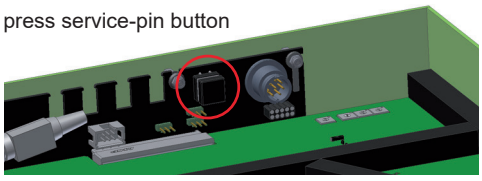
5 Function check

5.1 Is the operating lamp WD (= Watch Dog) blinking?
If not > check power supply and cables.

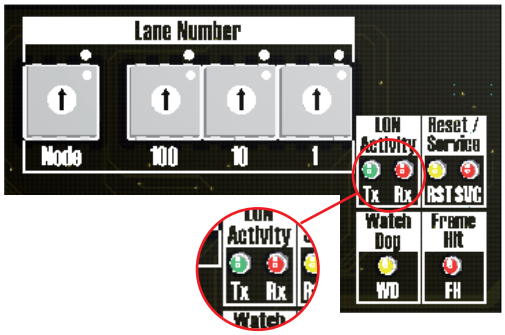


5.2 Communication control

– press service-pin button



– the green TX-lamp should blink
– at the same time the red RX-lamp should blink on the neighbour target



5.3 Control of detection system
Hold the finger shortly in the detection system and check if all three transmitters are blinking.

If not > check for dirt and clean (see also point 6 on page 25).

6 Software update

The software for the control unit can be updated with the software LON-Organizer installed on a PC.

See: www.sius.com > Products > Software > LON-Organizer

TIP
After each change of the target/system restart the equipment.

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