ALGE-TIMING

Ski Startdoor SSD1

Manual

Important Information

General

Before using your ALGE-TIMING device read the complete manual carefully. It is part of the device and contains important information about installation, safety and its intended use. This manual cannot cover all conceivable applications. For further information or in case of problems that are mentioned not at all or not sufficiently detailed, please contact your ALGE-TIMING representative. You can find contact details on our homepage www.alge-timing.com

Safety

Apart from the information of this manual all general safety and accident prevention regulations of the legislator must be taken into account.
The device must only be used by trained persons. The setting-up and installation must only be executed according to the manufacturer's data.

Intended Use

The device must only be used for its intended applications. Technical modifications and any misuse are prohibited because of the risks involved! ALGE-TIMING is not liable for damages that are caused by improper use or incorrect operation.

Power supply

The stated voltage on the type plate must correspond to voltage of the power source. Check all connections and plugs before usage. Damaged connection wires must be replaced immediately by an authorized electrician. The device must only be connected to an electric supply that has been installed by an electrician according to IEC 60364-1. Never touch the mains plug with wet hands! Never touch live parts!

Cleaning

Detergents can cause damage. Never submerge in water or open. The cleaning must not be carried out by hose or high-pressure (risk of short circuits or other damage).

Liability Limitations

All technical information, data and information for installation and operation correspond to the latest status at time of printing and are made in all conscience considering our past experience and knowledge. Information, pictures and description do not entitle to base any claims. The manufacturer is not liable for damage due to failure to observe the manual, improper use, incorrect repairs, technical modifications, use of unauthorized spare parts. Translations are made in all conscience. We assume no liability for translation mistakes, even if the translation is carried out by us or on our behalf.

Disposal

If a label is placed on the device showing a crossed out dustbin on wheels (see drawing), the European directive 2002/96/EG applies for this device.
Please get informed about the applicable regulations for separate collection of electrical and electronical waste in your country and do not dispose of the old devices as household waste. Correct disposal of old equipment protects the environment and humans against negative consequences!

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Declaration of Conformity

We declare that the following products comply with the requirements of the listed standards.

We, **ALGE-TIMING GmbH**
Rotkreuzstrasse 39
A-6890 Lustenau

declare under our sole responsibility, that the ski startdoor:

SSD1

is in conformity with the following standard(s) or other normative documents(s):

Safety: IEC 60950-1 :2006 + A11 :2009

Additional Information:
The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC, also the EMC Directive 2004/108EG and accordingly carries the CE-marking.

Lustenau, 2017-12-18   **ALGE-TIMING GmbH**

Albert Vetter
(General Manager)

Manual
Startdoor SSD1

Table of Contents

1   Introduction

The SSD1 is a start door for skiing and snowboard events. It is usable for parallel and cross events. The SSD1 is electrically operated. The control unit SSD1-PS is necessary to control the SSD1.

1.1   Startdoor SSD1 and Accessories

Startdoor SSD1
Depending on the event, two to six SSD1 start doors are necessary.

Control Unit SSD1-PS
At least one control unit is necessary. For team cross events it is necessary to have one control unit for each two Startdoors SSD1.

Start Button 023-02
Use the start button to trigger the start. The start button is included in the scope of delivery of the SSD1-PS. The 023-02 is to be connected at the control unit. It has a cable length of 2 m.

Startbeep STB1
acoustic start countdown for parallel events

Start Light D-SL85-5xR+G
LED-start light with 5 red lights and 1 green light

Start Light D-SL85-5xR+G-DS
same as start light D-SL85-5xR+G, but double-sided

Cable 310-07
connection cable between SSD1-PS and SSD1, as well as SSD1-PS and start light; cable length of 7 m

Cable 310-1.5
connection cable between Startdoors SSD1 for cross events

Cable 000-05
connection cable between SSD1-PS and Startbeep STB1

Ice Screw SSD1-IS:
Use ice screws SSD1-IS to fix the start door in the snow.

Controller Timy3
For parallel events were the rerun is started with the delay of the first run you need a Timy3.

SSD1-PS   SSD1-PS   023-02   STB1   D-SL85-5xR+G   SSD1-IS   TIMY3 WP
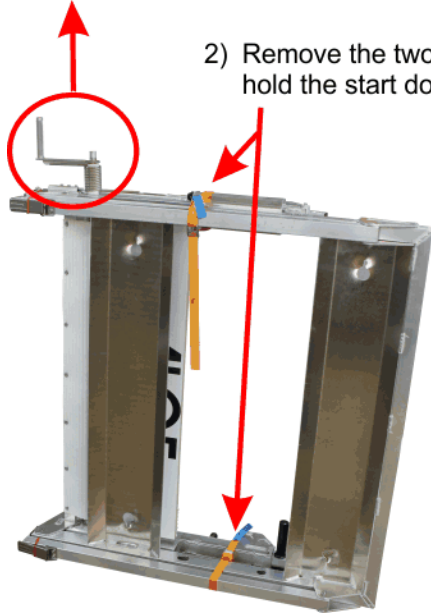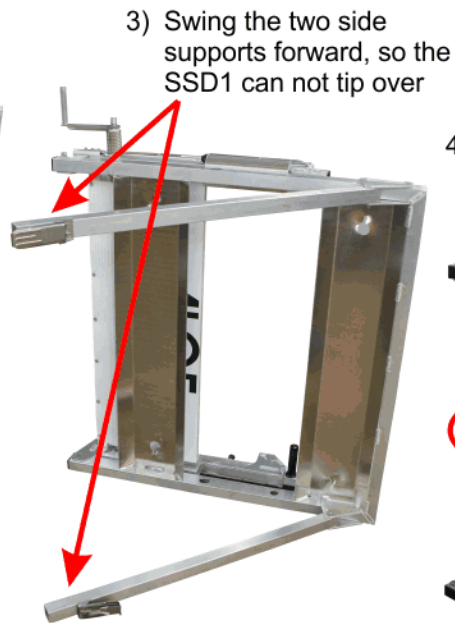
2   Setup of the Startdoor SSD1

One person alone can setup the SSD1.

2.1   Unfold the Startdoor SSD1

1) Set the start door so the foot lever points upwards

2) Remove the two straps that hold the start door together

3) Swing the two side supports forward, so the SSD1 can not tip over

4) Swing the front 270° towards the side supports

5) Fasten the two side supports at the front using the quick-release fasteners

6) Adjust the handle height by pulling the black slider and moving the handle up
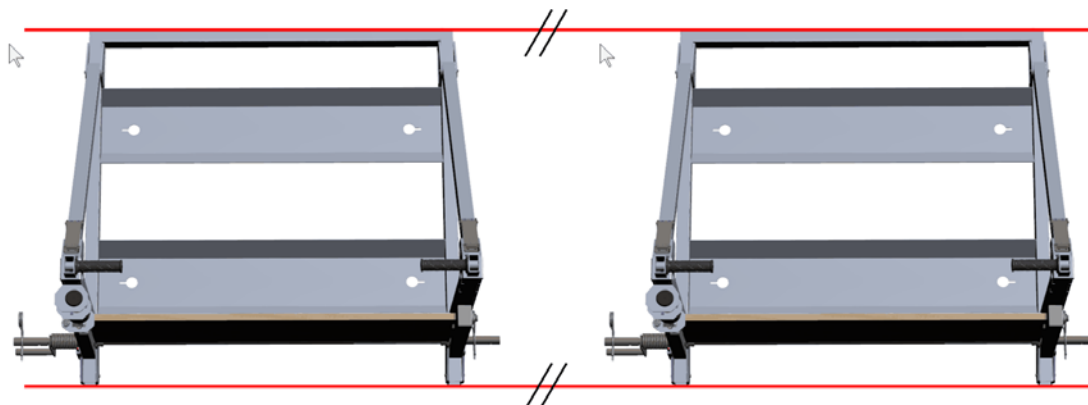
2.2   Install the Startdoors SSD1

- Measure out where the start doors are to be set up. It is important that the start doors are parallel to each other.


- The distance between the start doors is regulated in the rules for the corresponding sport. E.g. for FIS alpine parallel events it must be 7 m from center of one to the center of the other start door.

- Make sure the Startdoor SSD1 is set up levelled.

- All start doors must be in one line (parallel to each other).

- Bury the start door in the snow. The snow level must level the board behind the start panel.
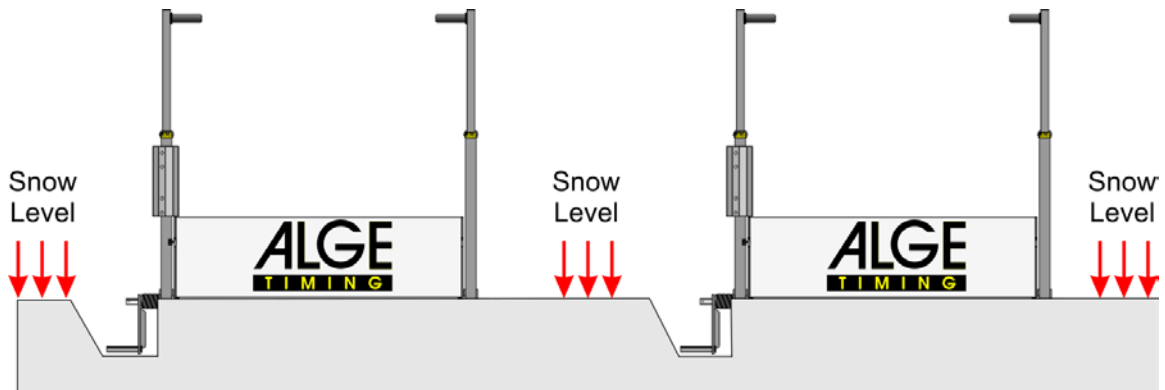
- On request, ALGE-TIMING can supply ice screws SSD1-IS for additional fixing of the start doors. For the screws the SSD1 base has four pre-fabricated holes.

Fastening Holes for Ice Screws
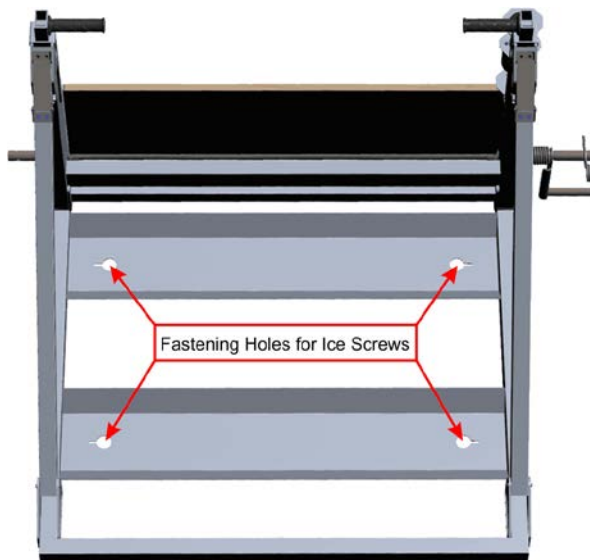
- After burying the start door ice it into the snow so that it is properly fixed for the event.

3   Operation

When the start doors are setup in the snow, they need to be connected to the control unit SSD1-PS controller with cable 310-07. Plug the start button 023-02 into the SSD1-PS.

The start panel is locked in start position with the foot lever.

Set the program selector switch of the SSD1-PS to the desired position and switch it on. By pressing the start button, the 3 seconds countdown (parallel) or the random trigger time (cross random 0 – 2 s) is started. After this countdown the SSD1 opens automatically. In the position "Cross" it opens immediately.

Note:

A 3 second countdown is used for the new rules. In older systems, the 5 second countdown is still used. Please check whether your system complies with the new rules. Otherwise the firmware must be updated. To do this, the cover must be opened and the firmware chip replaced:
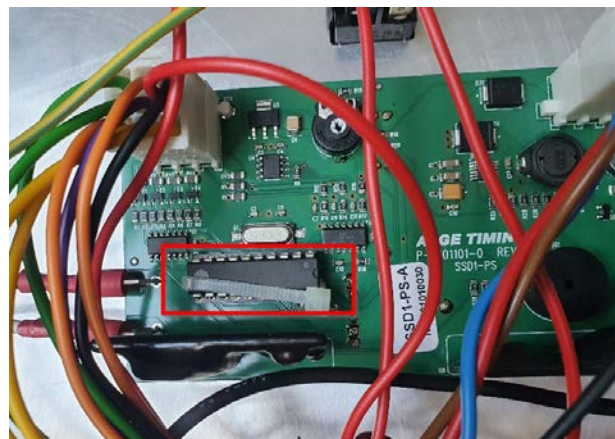
Caution: The start panel is pretensioned with a spring. When the start lock opens, the SSD1 opens within 0.2 s. Please make sure that no one is in the opening area. There is a risk of injury.
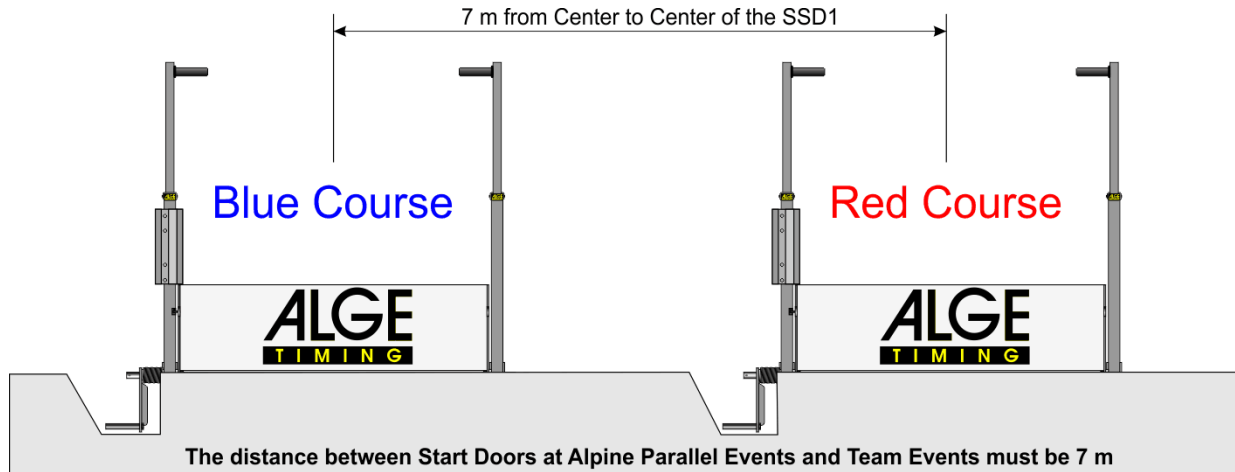
3.1   Additional Functions

The SSD1 has a mechanical emergency release. This emergency release is made for emergency only, not for normal use. To activate it, the rubber stopper above the trigger mechanism must be removed. Then it is possible to press the red button to activate the release mechanism. Then you put the black rubber stopper on the opening to protect the SSD1 from things that can fall inside.

Attention: The SSD1 opens with spring force. This means that the start panel moves down immediately.
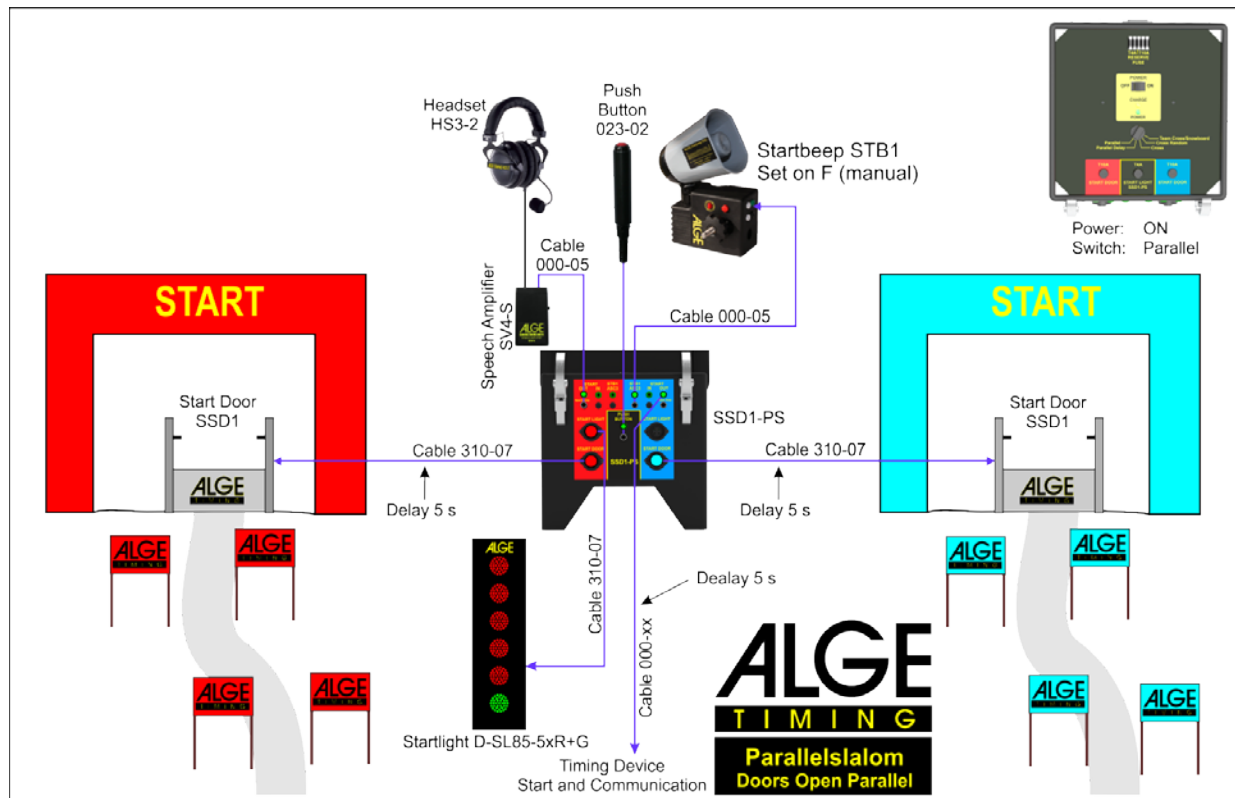**Hint:** If you do not remove the black rubber stopper and press the emergency release, it can happen that this stopper sticks and you cannot close the SSD1 anymore.

4   Sports

4.1   Parallel Events

7 m from Center to Center of the SSD1

Blue Course   Red Course

**The distance between Start Doors at Alpine Parallel Events and Team Events must be 7 m**

4.1.1   Parallel Event with Simultaneous Start

- After the setup of the start doors they are connected with cable 310-07 at the control unit SSD1-PS.
- Move the rotation switch at the SSD1-PS to „Parallel".
- Connect the start button 023-02 with the control unit SSD1-SU.
- Connect the Startbeep STB1 and/or Start Light to the Control Box SSD-PS
- Press the start button to start the 3-second start countdown.
- The Startbeep STB1 and/or the start light are necessary to show the racers the countdown.

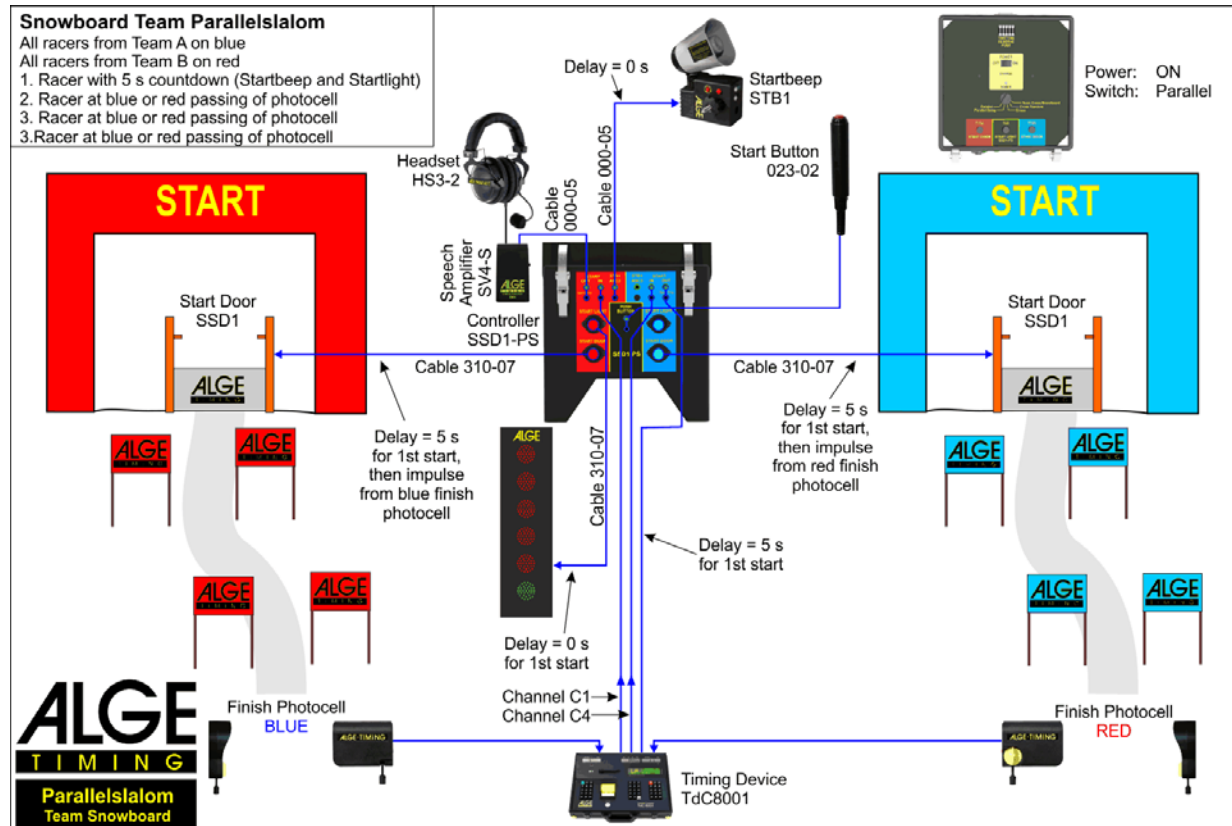## 4.1.2 Parallel Events with Delayed Start
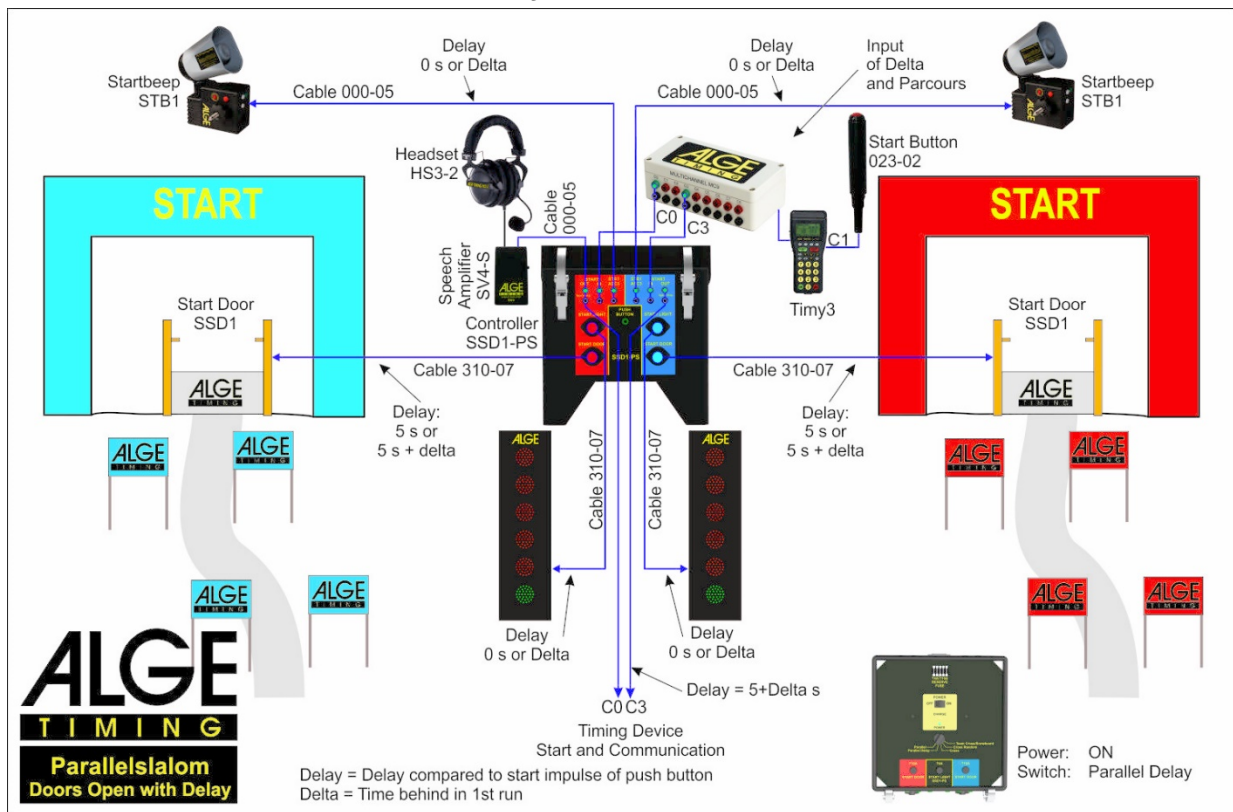
- After the setup of the start doors they are connected with cable 310-07 at the control unit SSD1-PS.

- Move the rotation switch at the SSD1-PS to „Parallel Delay".

- Connect the start button with the control unit SSD1-PS.

- Connect the Timy3 to the SSD1-PS.

- At the Timy3 you input the delay time of the loser of the first run.

- Press the start button to start the 3-second start countdown.

- The start doors open with the adjusted delay to each other.

- Attention, if the Startbeep STB1 and the start light are used, you will need one device for each course. Using the Startbeep, it should be noted that the acoustic countdown can confuse the runners as they start side by side.

4.1.3   Snowboard Parallel Team Events

- After the setup of the start doors they are connected with cable 310-07 at the control unit SSD1-PS.

- Move the rotation switch at the SSD1-PS to „Parallel".

- Connect the start button 023-02 with the control unit SSD1-PS.

- Connect the Startbeep STB1 and/or Start Light to the Control Box SSD-PS

- Press the start button to start the 3-second start countdown of the first runner.

- The start doors open for the first runner of a team parallel.

- The start door opens for the second runner of a team when the first runner crosses the finish line (photocell).

- Attention, for the second racer the Startbeep STB1 and the start light will not work.
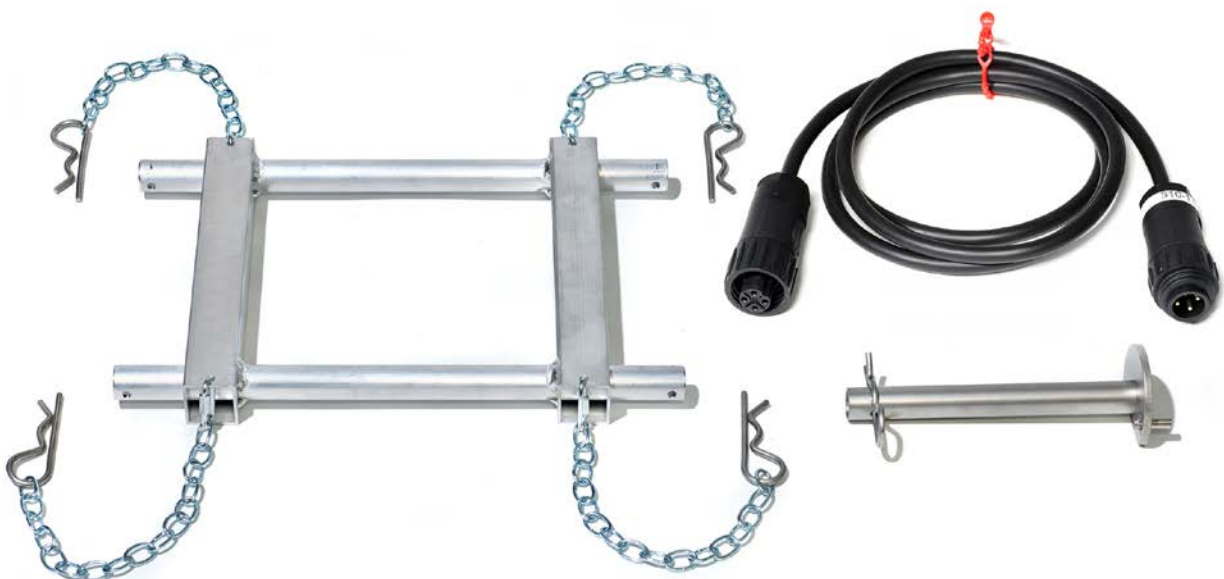
4.2   Cross Events
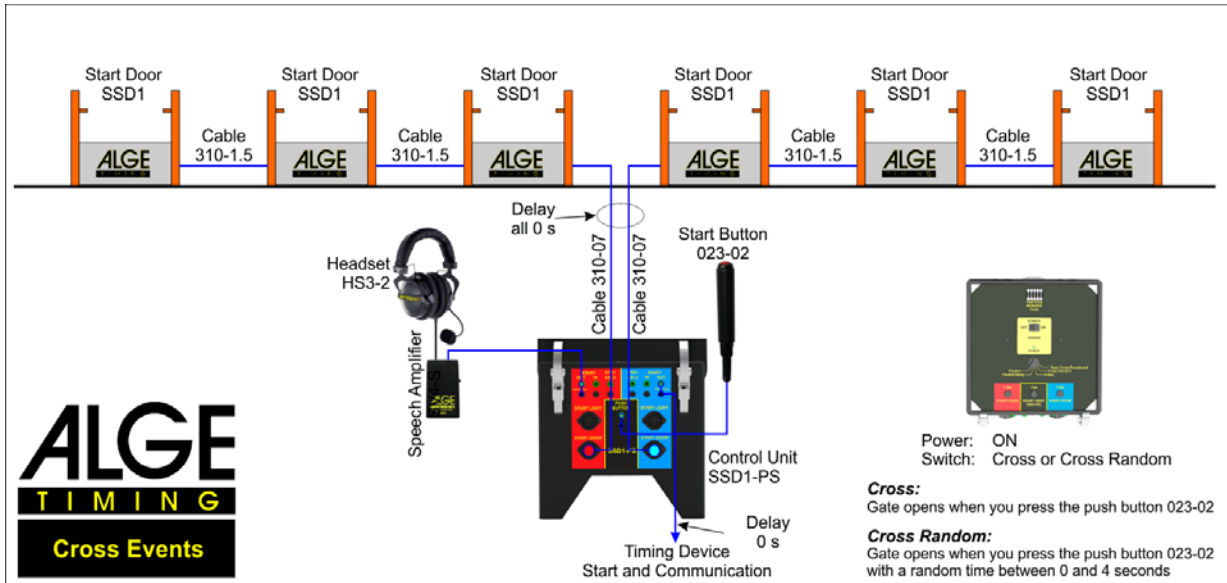
In cross competitions, the start gates are placed close to each other. They must have the same installation height. To set them up, we recommend using framework boards below the start gates to level them before covering them with snow.

- Set up the start doors and connect them with the connection set SSD1-CC.

- Place the Control Unit SSD1-PS in the middle.

- Connect both start doors in the middle with cable 310-07 with the Control Unit SSD1-PS.

- Connect the other start doors with cable 310-1.5 between each other (see sketch above).

- Move the rotation switch at the SSD1-PS to „Cross".

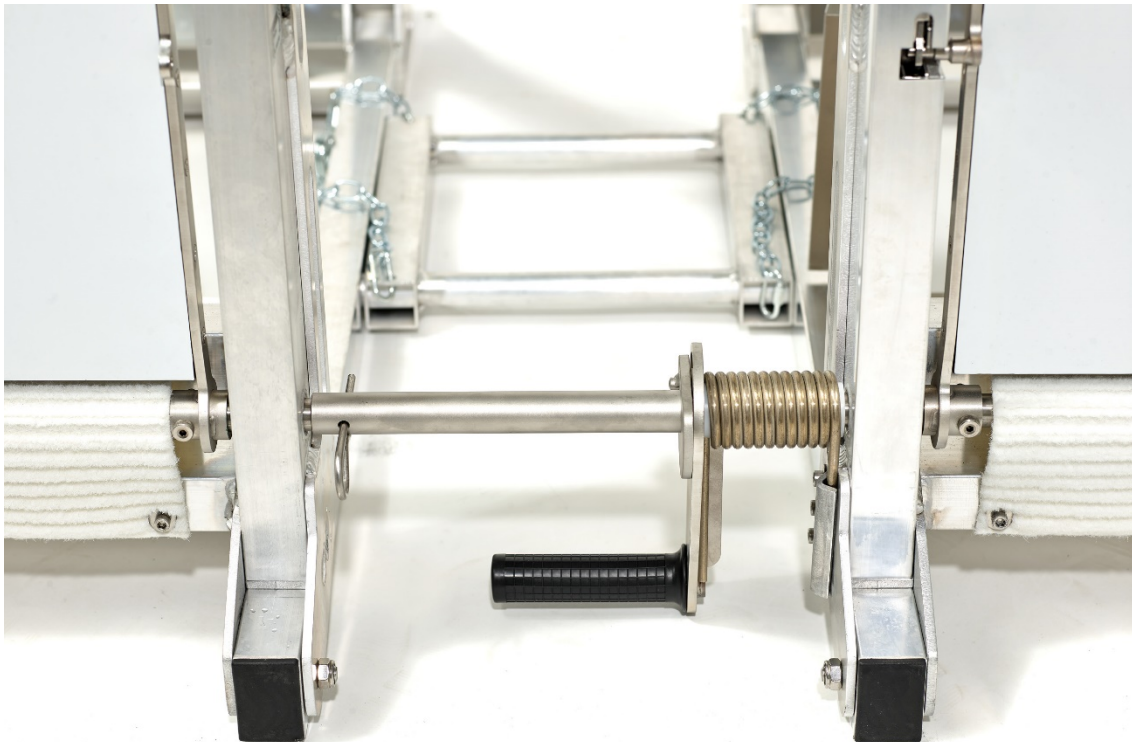- All start doors will open at the same time.

For cross competitions, the start doors must be mechanically and electrically connected. For this the set "SSD1-CC" is needed. To connect four SSD1 you need three SSD1-CC.
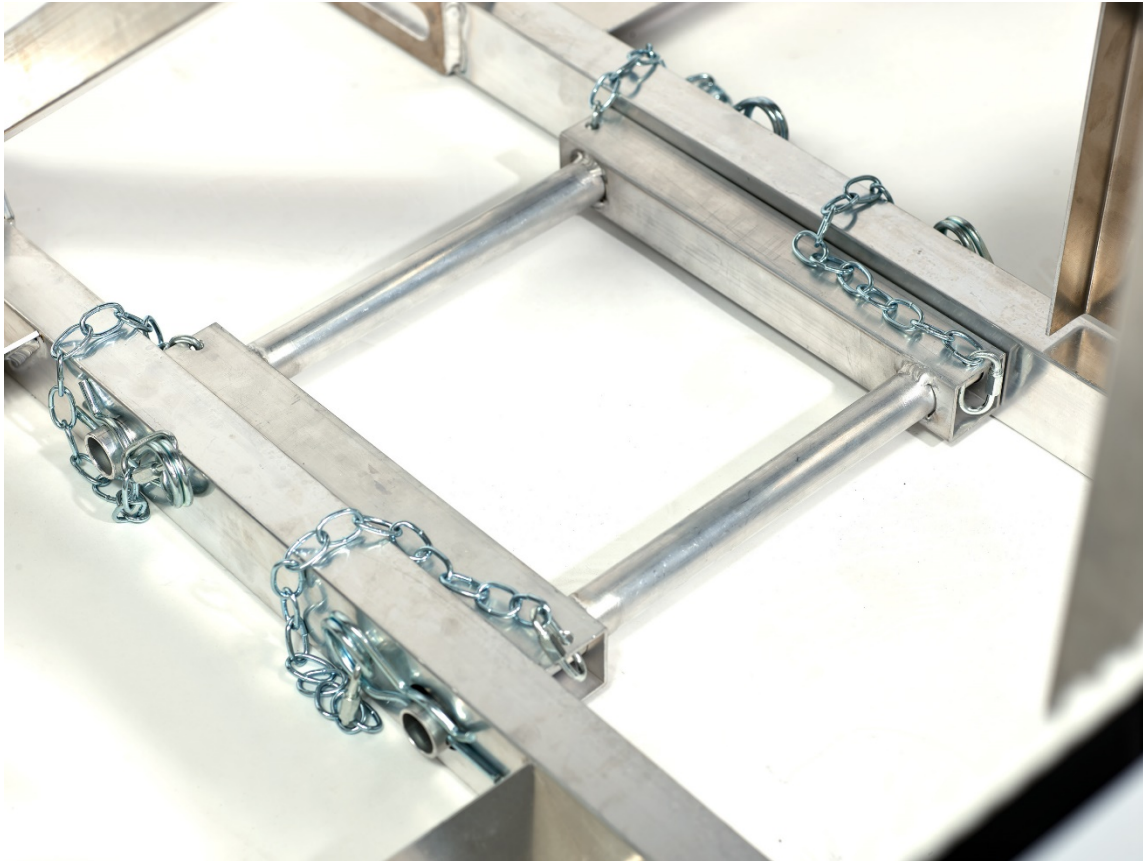
First plug the SSD1-CC into the first SSD1.

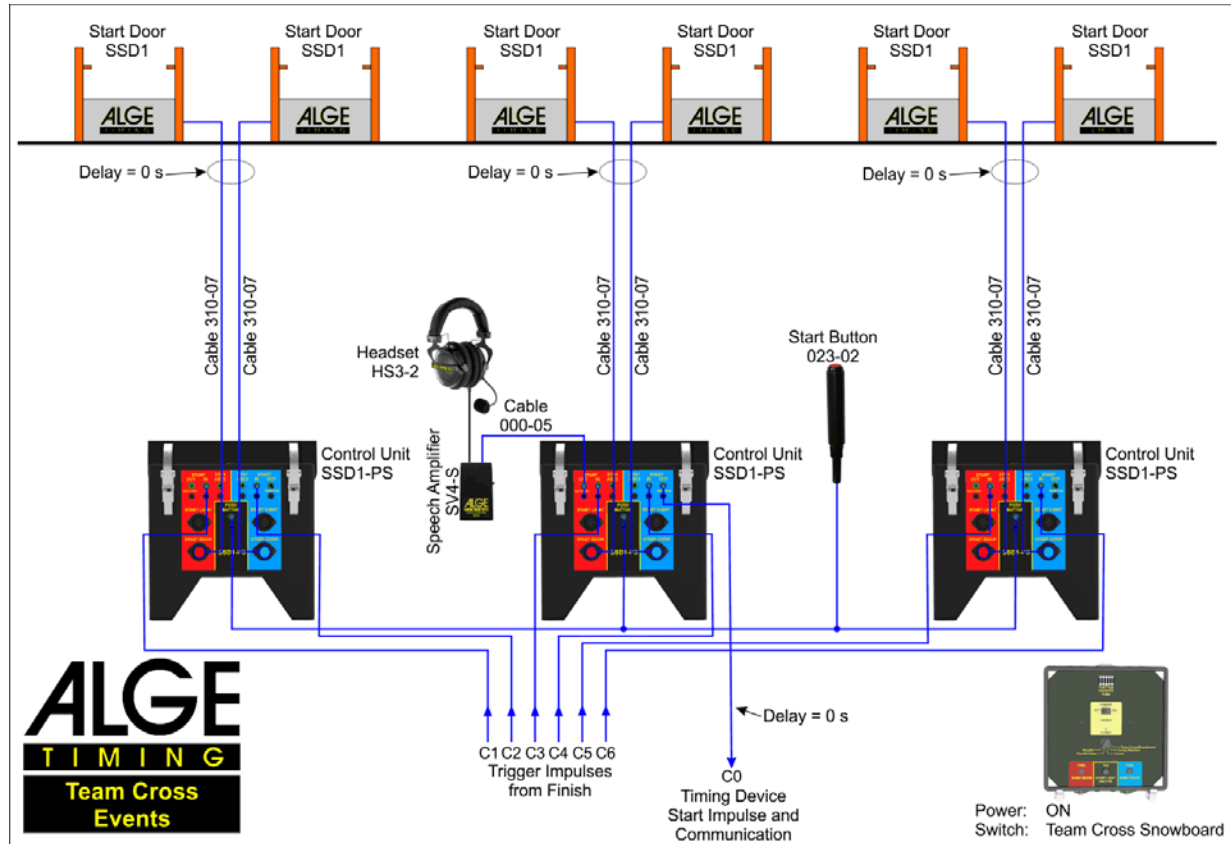Push the two SSD1 together and fix them with the spring pin

At the end, connect both SSD1 with the Cable 310-1.5.

4.3   Team Cross Event

For team cross events the cross-connection set SSD1-CC is necessary.

- Set up the start doors and connect them with the connection set SSD1-CC.

- For team cross events two (for four start doors) or three (for six start doors) Control Units SSD1-PS are necessary.

- Place the Control Unit SSD1-PS in the middle between two start doors (see picture).

- Connect both start doors next to SSD1-PS with cable 310-07.

- Connect the start input of the Control Units SSD1-PS with banana cables parallel (see sketch above).

- Connect to the start input as well the push button 023-02.

- Move the rotation switch at the SSD1-PS to „Team Cross Snowboard".

- Connect the finish impulse trigger for each team to its start door input (START IN) at the SSD1-PS.

- All start doors will open at the same time for the first start.

- For the next racers the start doors will open when a team mate crosses the finish line.

5   Technical Data

5.1   Measurements

ALGE-TIMING Startdoor SSD1:	Measured
Distance between handles or knob [A]	81,5 cm
Handle or knob height over snow [B]	59 to 101 cm
Vertical handle or know movement [C]	5 cm
Handle diameter [D]	3,5 cm
Knob diameter [E]	-
Width of hinged flap panel [F]	97cm
Hight of hinged flap panel over the snow	26 cm
Distance between startdoors for corss events	65 cm
Closing angle of hinged flap panel	3°
Opening angle of hinged flap panel	170°
Time to open hinged flap panel to 90° (10 measurements)	0,1500 s
Variation of opening duration of hinged flap panel (10 measurements)	0,0034 s
Force applied on hinged flap panel at 25 cm over snow level: no opening when not relised	> 15 kg
Force applied on hinged flap panel at 25 cm over snow level: opening when relised	> 15 kg
Operationg temperature	-40 to +60°C
Surface of hinged start panel	carpet
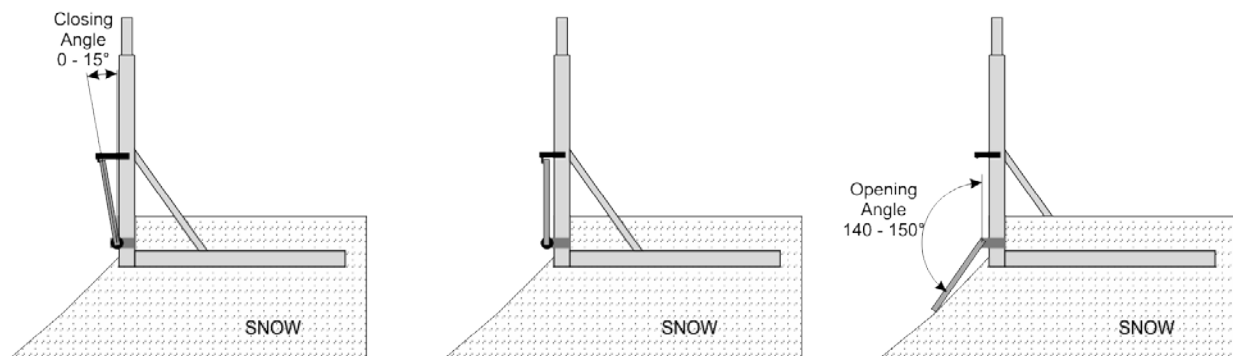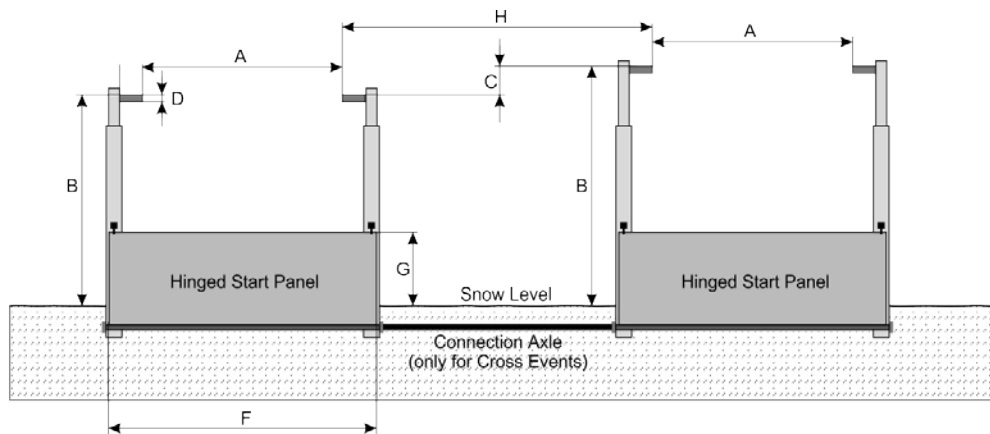
6   Other Devices

6.1   Control Unit SSD1-PS

The control unit SSD1-PS controls the start door SSD1 and is also the power supply for the start doors. It has built-in 12 V batteries and charger. This makes it possible to operate the start system without mains supply.

The SSD1-PS is built to work outdoors in cold and wet conditions. A hinged lid hides and protects the on/off switch and the operation switch. With the operation switch you can select the following functions (events):

Parallel:
for parallel competitions with both racers starting simultaneously
You need one SSD1-PS for two SSD1. The start doors open with a delay of 3 seconds so that an additional Startbeep STB1 or start light can be used.

Parallel Delay:
for parallel events with one racer starting with the delay time of the first heat
The start doors open with a delay of 3 seconds so that an additional Startbeep STB1 or start light can be used.

Cross:
for cross events (Snowboard)
The start occurs when the start button is pressed. Up to six start doors can be connected to one SSD1-PS.

Cross Random:
for cross events (Freestyle)
The start occurs with a random delay between 0 and 4 seconds after pressing the start button. Up to six start doors can be connected to one SSD1-PS.

Team Cross Snowboard:
for team snowboard cross events
Per two start doors SSD1, one control unit SSD1-PS is needed. The start occurs simultaneously. When the racer of one team crosses the finish, an impulse is sent to the door of the teammate, so that he can start.
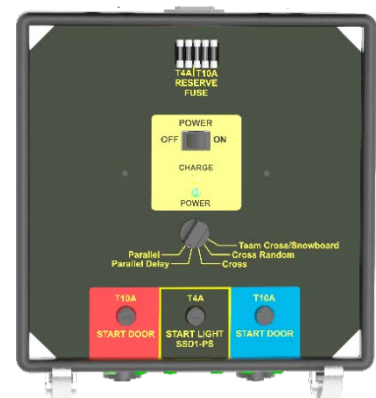
6.1.1   Start Button 023-02

The control unit SSD1-PS includes the start button 023-02. The start button must be connected to the "Push Button" socket.
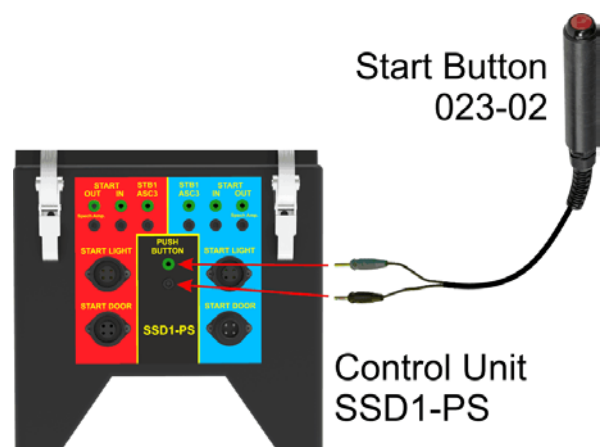
6.2   Start Light D-SL105-3xR-G or D-SL105-3xR-G-DS

The start light is connected to the controller SSD1-PS with the cable 310-07.

The start light counts from five to zero every second. At 3 seconds, the upper red light lights up, at 2 seconds the two red upper lights light up, and so on. At zero, all red lights go out and the green light lights up.
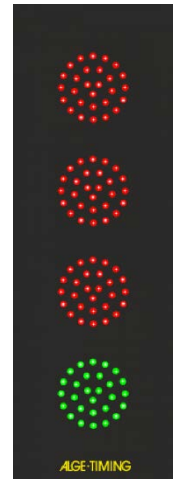
6.3   Startbeep STB1

If the red button (2) is pressed while the switch (1) is turned to position "B", the manual 3-second countdown is activated for parallel slalom. A 3 second countdown starts every time the red button (2) is pressed or an impulse is sent to the green-black banana socket.

Countdown: 3 Seconds before Start   deep sound
2 Seconds before Start   deep sound
1 Second before Start   deep sound
Start   high sound

This function is only integrated in STB1s that were purchased after 2020/11/11 or whose EPROM was replaced after this date.

7   Troubleshooting

Problem: Hinged panel does not lock.

Solution 1:   Lock is not open. Please open the lock with the electrical or mechanical release.

Solution 2:   The lock is constantly triggered because the plastic protection blocks the mechanism. Remove the plastic protection. Restore its original condition and put it back in place.

Subject to changes and misprints

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8   Checklist

The following check should be done prior to every race to make sure that they work as expected.

Mechanical Check:

- Please do not grease any part of the SSD1. This might cause trouble in the cold. ☐

- Check if all screws are still fastened. ☐

- Check the spring if it shows visible damage. ☐

Power Supply Check:

- Charge the battery of the control unit SSD1-PS. ☐

- After charging, disconnect the SSD1-PS from the mains. The LED must still light up when switched on. ☐

Cable Check:

- visual check of the cables ☐

- visual check of the plugs ☐

Accessories Test:

- Visually check the start light D-SL105-3XR-G or D-SL105-3XR-G-DS. ☐

- Replace the STB1 battery prior to every event. ☐

- Acoustically check the countdown of the Startbeep STB1. ☐

Overall Check:

- Install the SSD1 as for an event and check if all parts are at hand. ☐

- Check if your system compiles with the current rules: Since 2020 a 3 second interval has been used ☐

- Make several test starts with the SSD1.and check if the complete system works. *Attention:* use some protection underneath so that the hinged flip panel does not get damaged when swinging down. ☐