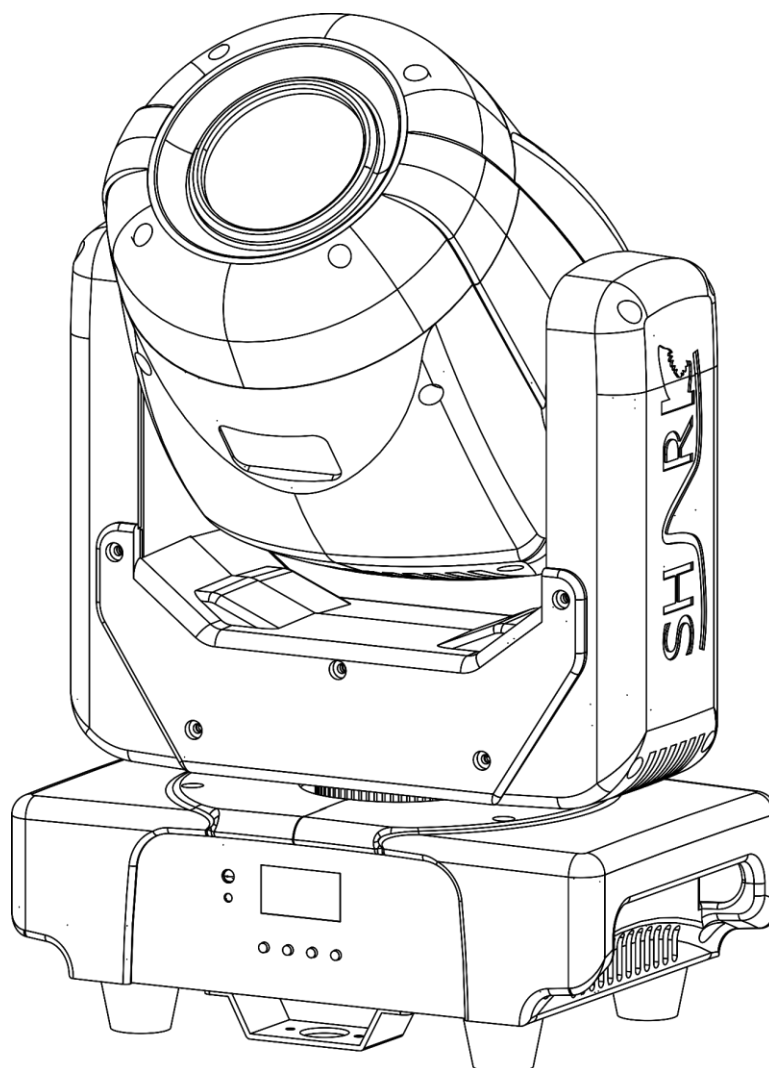




USER MANUAL



ENGLISH

Shark Spot Two

V1

Product code: 45030

Firmware version: 2.0.1

Preface

Thank you for purchasing this Showtec product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Intended and non-intended use of the device
- Installation and operation of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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1. Introduction

1.1. Before Using the Product



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- Showtec Shark Spot Two
- Schuko to Power Pro cable (1,5 m)
- Safety eye
- 1x Quick-lock bracket
- Remote control
- User manual

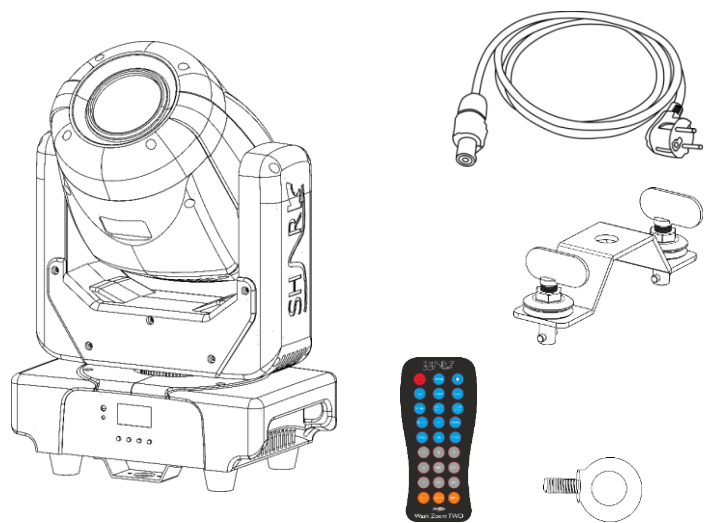


Fig. 01

1.2. Intended Use

This device is intended for professional use as a moving head. It is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Product Lifespan

This device is not designed for permanent operation. Disconnect the device from the electrical power supply when the device is not in operation. This will reduce the wear and will improve the device's lifespan.

1.4. LEDs Lifespan

The light output of the LEDs gradually decreases over time (lumen depreciation). High operating temperatures contribute to this process. You can extend the lifespan of the LEDs by providing adequate ventilation and operating the LEDs at the lowest possible brightness.

1.5. Text Conventions

Throughout the user manual the following text conventions are used:








- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"

- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment handle (05)**"
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.6. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.





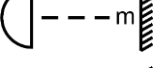
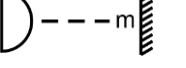
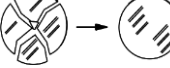
Always follow the instructions provided in this user manual.

	DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION	Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.
	Attention	Indicates important information for the correct operation and use of the product.
	Important	Read and observe the instructions in this document.
	Electrical hazard	
		Provides important information about the disposal of this product.

1.7. Symbols on the Information Label

This product is provided with an information label. The information label is located on the mounting bracket of the device.

The information label contains the following symbols:

	This device shall not be treated as household waste.
	This device is designed for indoor use.
	This device falls under IEC protection class I.
	Minimum distance from lighted objects.
	Minimum distance from other objects.
	Replace any cracked protective shield.
	Caution: Risk of electric shock. Do not open. Caution: To reduce the risk of electrical shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified personnel.

2. Safety



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions



DANGER
Danger for children

For adult use only. The device must be installed beyond the reach of children.

- Do not leave various parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within children's reach. Packaging material is a potential source of danger for children.



DANGER
Electric shock caused by dangerous voltage inside

There are areas within the device where dangerous touch voltage may be present.

- Do not open the device or remove any covers.
- Do not operate the device if the covers or the housing are open. Before operation, check if the housing is firmly closed and all screws are tightly fastened.
- Disconnect the device from electrical power supply before service and maintenance, and when the device is not in use.



DANGER
Electric shock caused by short-circuit

This device falls under IEC protection class I.

- Make sure that the device is electrically connected to ground (earth). Connect the device only to a socket-outlet with ground (earth) connection.
- Do not cover the ground (earth) connection.
- Do not bypass the thermostatic switch or fuses.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.



WARNING
Risk of epileptic shock

Strobe lighting can trigger seizures in photosensitive epilepsy. Sensitive persons should avoid looking at strobe lights.



Attention
Power supply

- Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the extension cords and power cables is sufficient for the required power consumption of the device.



Attention
General safety

- Do not connect the device to a dimmer pack.
- Do not switch the device on and off in short intervals. This decreases the device's life.
- Do not shake the device. Avoid brute force when installing or operating the device.
- Change the lens or the LEDs if they are visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Contact your Highlite International dealer for more information, as servicing can be performed only by instructed or skilled persons.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue the use immediately.



Attention
For professional use only
This device shall be used only for the purposes it is designed for.

This device is designed to be used as a professional moving head. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households and for general lighting.
- This device is not designed for permanent operation.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

**Attention**

Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixations and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

**Attention**

Do not expose the device to conditions that exceed the rated IP class conditions.

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance may be carried by ordinary persons. Installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

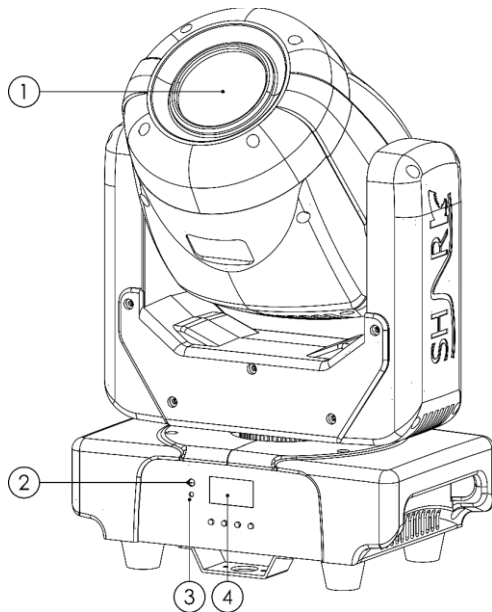
Skilled persons have training or experience, which enables them to recognize risks and to avoid hazards associated with the installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

3. Description of the Device

The Showtec Shark Spot Two is a 90-watt LED moving head suitable for indoor use. Fifty percent more powerful than the Shark Spot One (45023), it has seven dichroic colours plus white and a 3-facet prism, giving it everything it needs to put on a colourful and dynamic light display. Six gobos add to its range of impressive effects, while the motorised focus can be used to ensure that everything looks razor sharp. Other features include dim and strobe functions. The Shark Spot Two can run in DMX, auto or sound modes as a master or slave, or it can be operated using the included remote control. Settings can be changed directly on the fixture using the built-in OLED display.

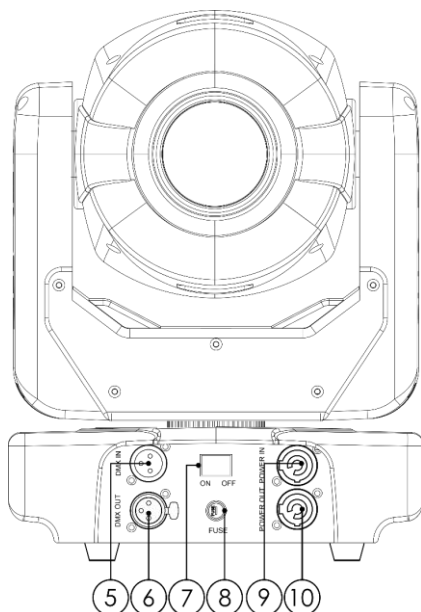
3.1. Front View



- 01) Lens / 1x 90 W CW LED module
- 02) Infrared Eye
- 03) DMX LED
- 04) OLED display + control buttons

Fig. 02

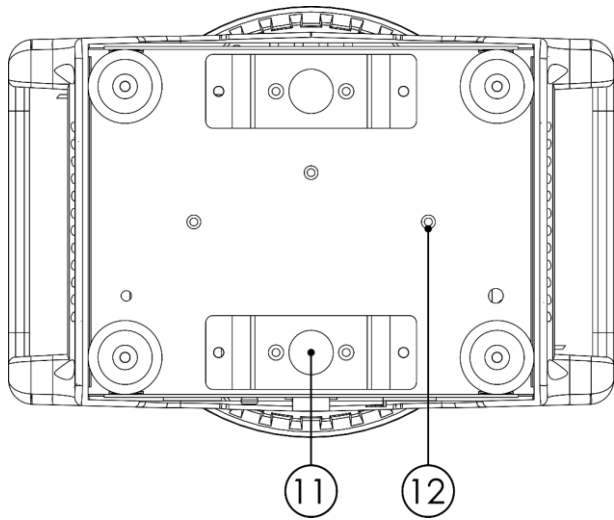
3.2. Back View



- 05) 3-pin DMX signal connector IN
- 06) 3-pin DMX signal connector OUT
- 07) ON / OFF
- 08) Fuse F4AL / 250 V
- 09) Power Pro connector IN
- 10) Power Pro connector OUT

Fig. 03

3.3. Bottom View



- 11) Mounting holes for quick lock bracket
- 12) Safety Eye hole

Fig. 04

3.4. Product Specifications

Model:	Shark Spot Two	
Electrical:		
Input voltage:	100–240 V AC, 50/60 Hz	
Power consumption:	130 W	
Fuse:	F4AL, 250 V	
Physical:		
Dimensions:	246 x 154 x 355 mm (L x W x H) (including bracket)	
Weight:	6,2 kg	
Optics:		
Light source:	1x 90 W CW LED module	
Dimmer:	0–100 %	
Focus:	Motorized	
Prism:	3-facet	
Beam angle:	15°	
Strobe:	0–25 Hz	
Lux @2m	22111 lx	
Lux @3m	9827 lx	
Lux @5m	3538 lx	
Lumen Total:	2923 lm	
Dichroic Colour Wheel 1	7 + open	
Gobo Wheel 1	6 + Open (Glass + Metal)	
CRI:	81,5	
Pan:	540 °	
Tilt	210 °	
Operation and control:		
Control:	Stand-alone (Static, Auto, Built-in Programs, Manual, IR Remote Control) Master/Slave DMX-512	
DMX channels:	8 channels 15 channels	
Control panel:	OLED display and buttons	
Connections:		
Power connections:	Pro power connectors IN/OUT	
Data connections:	3-pin DMX connectors IN/OUT	
Signal pinouts:	Pin 1 (ground), pin 2 (-), pin 3 (+)	
Construction:		
Housing:	Plastic	
Color:	Black	
IP rating:	IP20	
Cooling:	Axial Fan	
Thermal:		
Maximum ambient temperature t_a :	40 °C	
Minimum ambient temperature:	-5 °C	
Minimum distance:		
Minimum distance from flammable surfaces:	0,8 m	
Minimum distance to lighted object:	0,8 m	

3.5. Dimensions

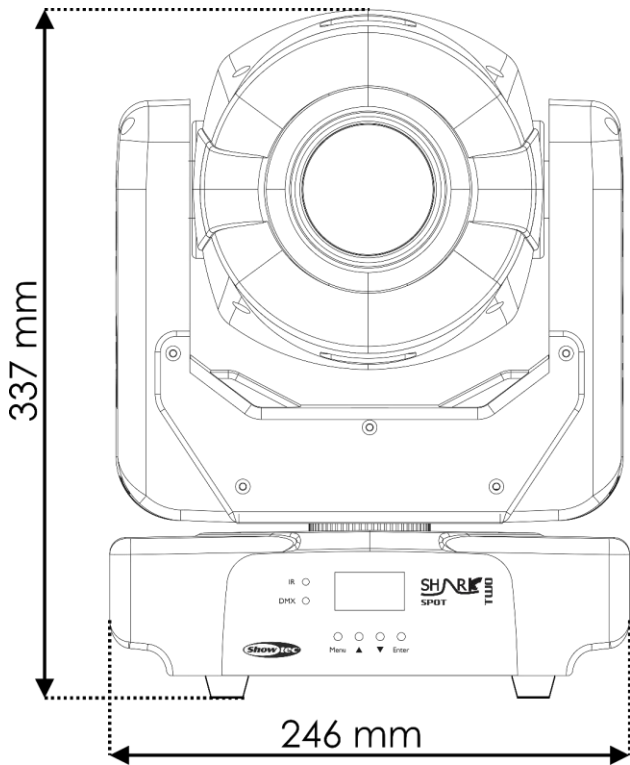


Fig. 05

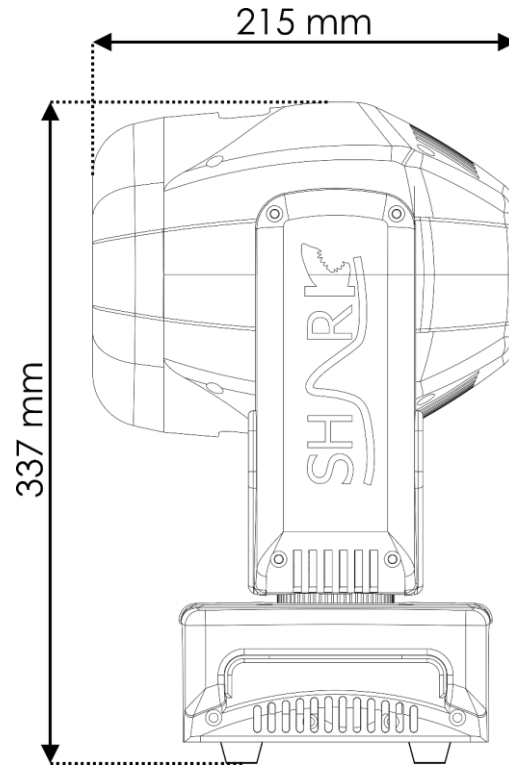


Fig. 06

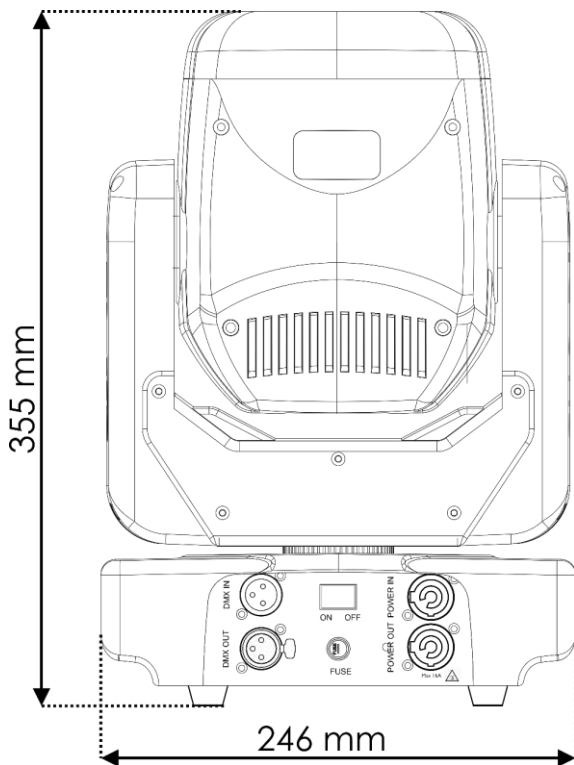


Fig. 07

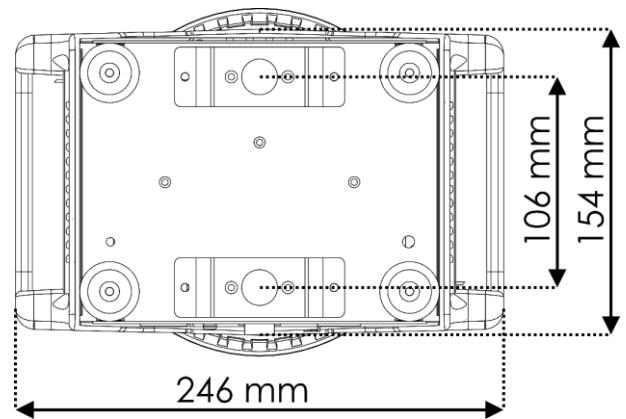


Fig. 08

4. Installation

4.1. Safety Instructions for Installation



WARNING

Incorrect installation can cause serious injuries and damage of property.

If trussing systems are used, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning rigging and trussing.

4.2. Personal Protective Equipment

During installation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

4.3. Installation Site Requirements

- The device can be used only indoors.
- The device can be mounted to a truss or other rigging structure in any orientation.
- The minimum distance between the light output and the illuminated surface must be bigger than 0,8 m.
- The maximum ambient temperature $t_a = 40\text{ °C}$ must never be exceeded.

4.4. Rigging

The device can be positioned on a flat surface or mounted to a truss or other rigging structure in any orientation. Make sure that all loads are within the pre-determined limits of the supporting structure.



CAUTION

Restrict the access under the work area during rigging and/or derigging.

To mount the device, follow the steps below:

- 01) Install the safety eye, supplied with the device, in the **safety eye hole (12)**, as shown in Fig. 09. Make sure that you use clamps suitable for attaching the device to a truss.

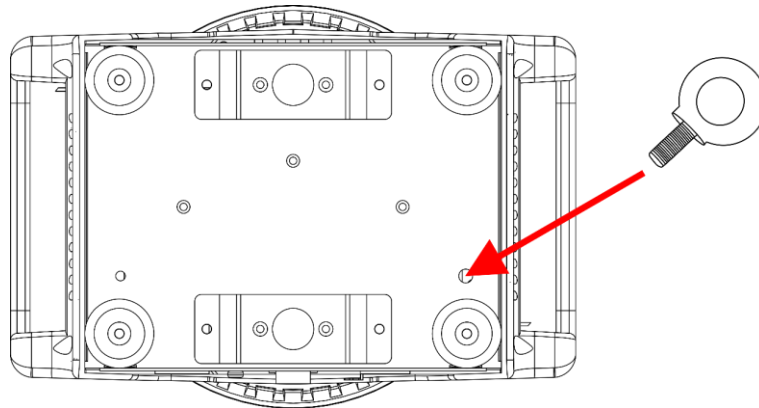


Fig. 09

- 02) Fasten the quick lock bracket, supplied with the device, on the **mounting holes for quick lock bracket (11)**, as shown in Fig. 10.

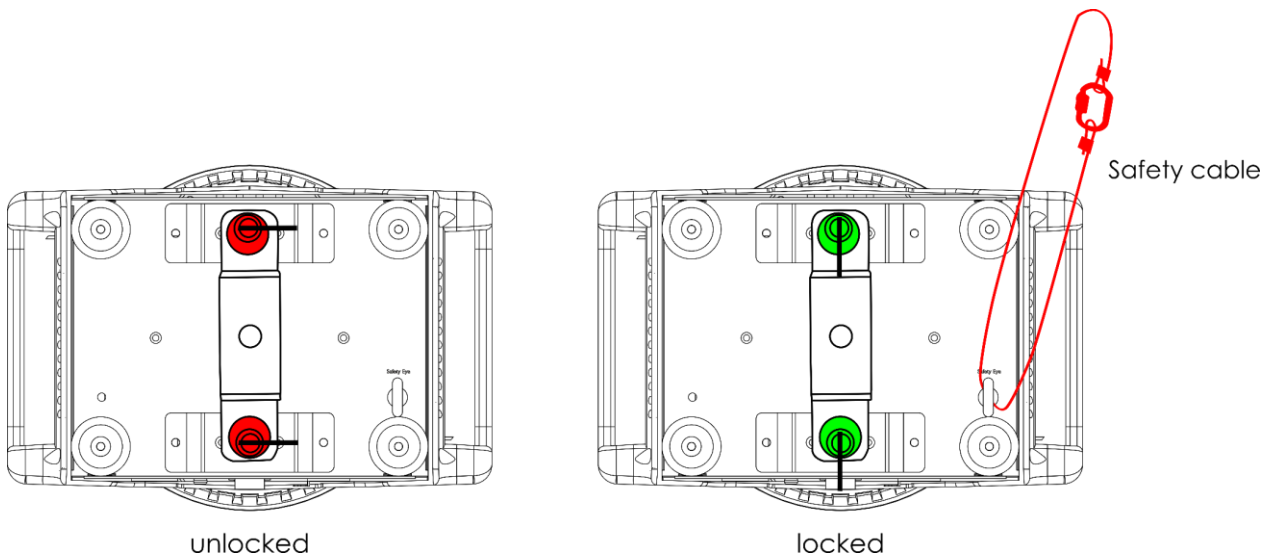


Fig. 10

- 03) Attach the device to the supporting structure. Make sure that the device cannot move freely.
- 04) Secure the device with a secondary suspension, for example a safety cable. Make sure that the secondary suspension can hold 10 times the weight of the device. If possible, the secondary suspension should be attached to a supporting structure independent of the primary suspension. Put the safety cable through the safety eye as shown in Fig. 10.

4.5. Connecting to Power Supply



DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:

- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has ground (earth) connection.

Connect the device to the socket-outlet with the power plug. Do not connect the device to a dimmer circuit, as this may damage the device.

4.6. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



WARNING
Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple devices.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

Maximum recommended number of devices:

- at 100–120 V: 5 devices Shark Spot Two
- at 200–240 V: 10 devices Shark Spot Two

5. Setup

5.1. Warnings and Precautions



DANGER
Electric shock caused by short-circuit



Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

5.2. Stand-alone Setup

When the Shark Spot Two is not connected to a controller or to other devices, it functions as a stand-alone device.

For more information about the control modes, refer to **6.2. Control Modes** on page 19.

5.3. DMX Connection

5.3.1. DMX-512 Protocol

You need a DMX serial data link to run light shows of one or more devices using a DMX-512 controller or to run synchronized shows of two or more devices set in a master/slave control mode.

The Shark Spot Two has 3-pin DMX signal IN and OUT connectors.

The pin assignment is as follows:

- 3-pin: pin 1 (ground), pin 2 (-), pin 3 (+)

Devices on a serial data link must be daisy-chained in a single line. The number of devices that you can control on one data link is limited by the combined number of the DMX channels of the connected devices and the 512 channels available in one DMX universe.

To comply with the TIA-485 standard, no more than 32 devices should be connected on one data link. In order to connect more than 32 devices on one data link, you must use a DMX optically isolated splitter/booster, otherwise this may result in deterioration of the DMX signal.

Note:

- Maximum recommended DMX data link distance: 300 m
- Maximum recommended number of devices on a DMX data link: 32 devices

5.3.2. DMX Cables

Shielded twisted-pair cables with 3-pin XLR connectors must be used for reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

If you use 3-pin XLR audio cables for DMX data transmission, this may lead to signal degradation and unreliable operation of the DMX network.

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in Fig. 11.

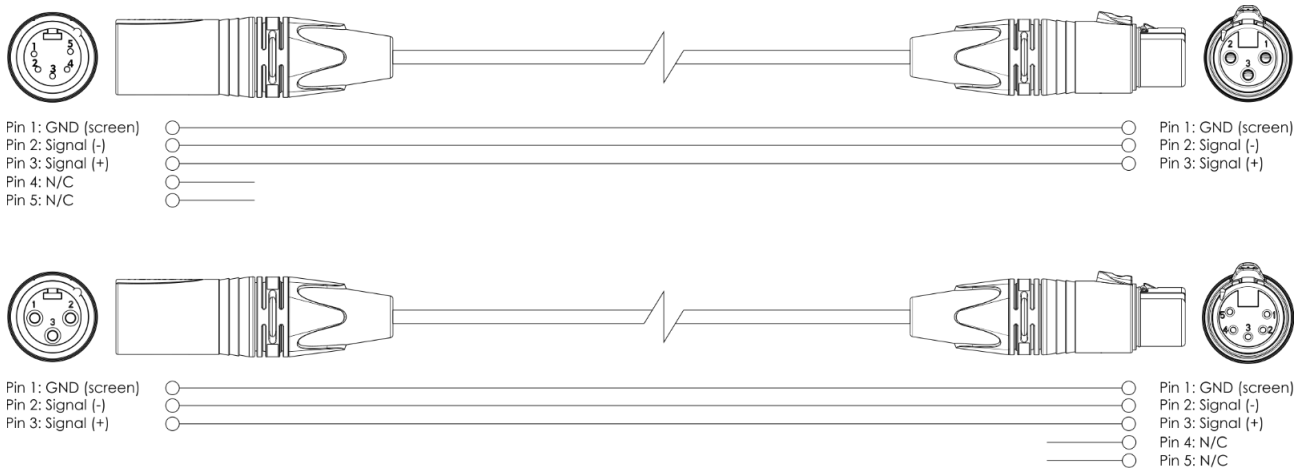


Fig. 11

5.3.3. Master/Slave Setup

The Shark Spot Two supports master/slave control mode. To connect multiple devices in a master/slave setup, follow the steps below:

- 01) Connect the first device's DMX OUT connector to the second device's DMX IN connector with a 3-pin DMX cable. The first connected device in the setup will be automatically recognized as the master device.
- 02) Repeat step 1 to connect all devices as shown in Fig. 12.
- 03) Set all subsequent devices in the setup as slave devices. See **6.6.3 Run Mode** on page 23 for more information.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device in the setup.

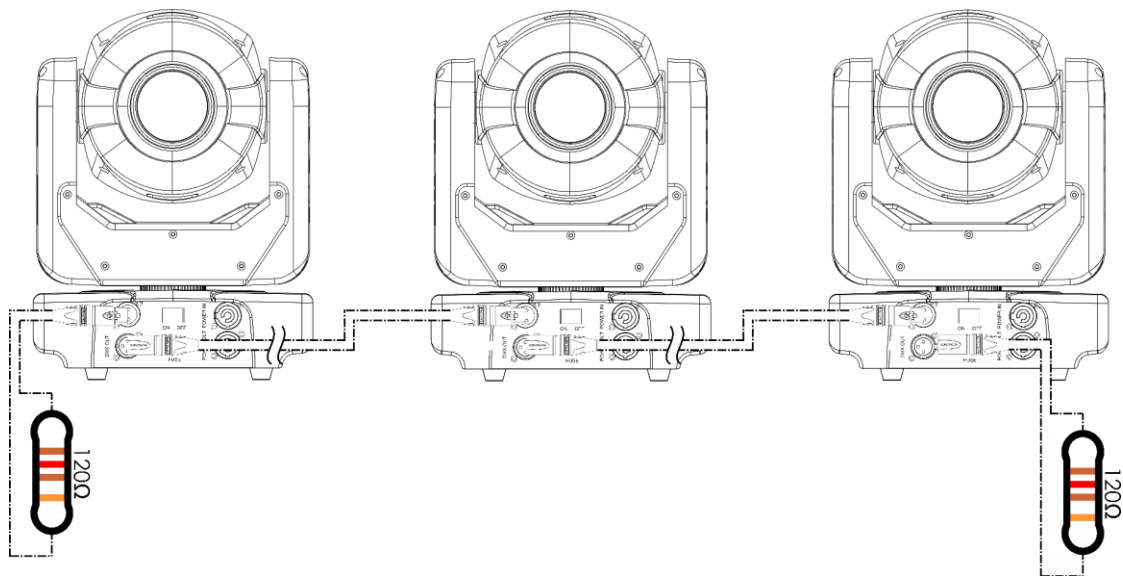


Fig. 12

5.3.4. DMX Linking

To connect multiple devices on one DMX data link, follow the steps below:

- 01) Use a 3-pin DMX cable to connect the DMX OUT connector of the lighting controller to the DMX IN connector of the first device.
- 02) Connect the first device's DMX OUT connector to the second device's DMX IN connector with a 3-pin DMX cable.
- 03) Repeat step 2 to connect all devices in a daisy-chain as shown in Fig. 13.
- 04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last device on the data link.

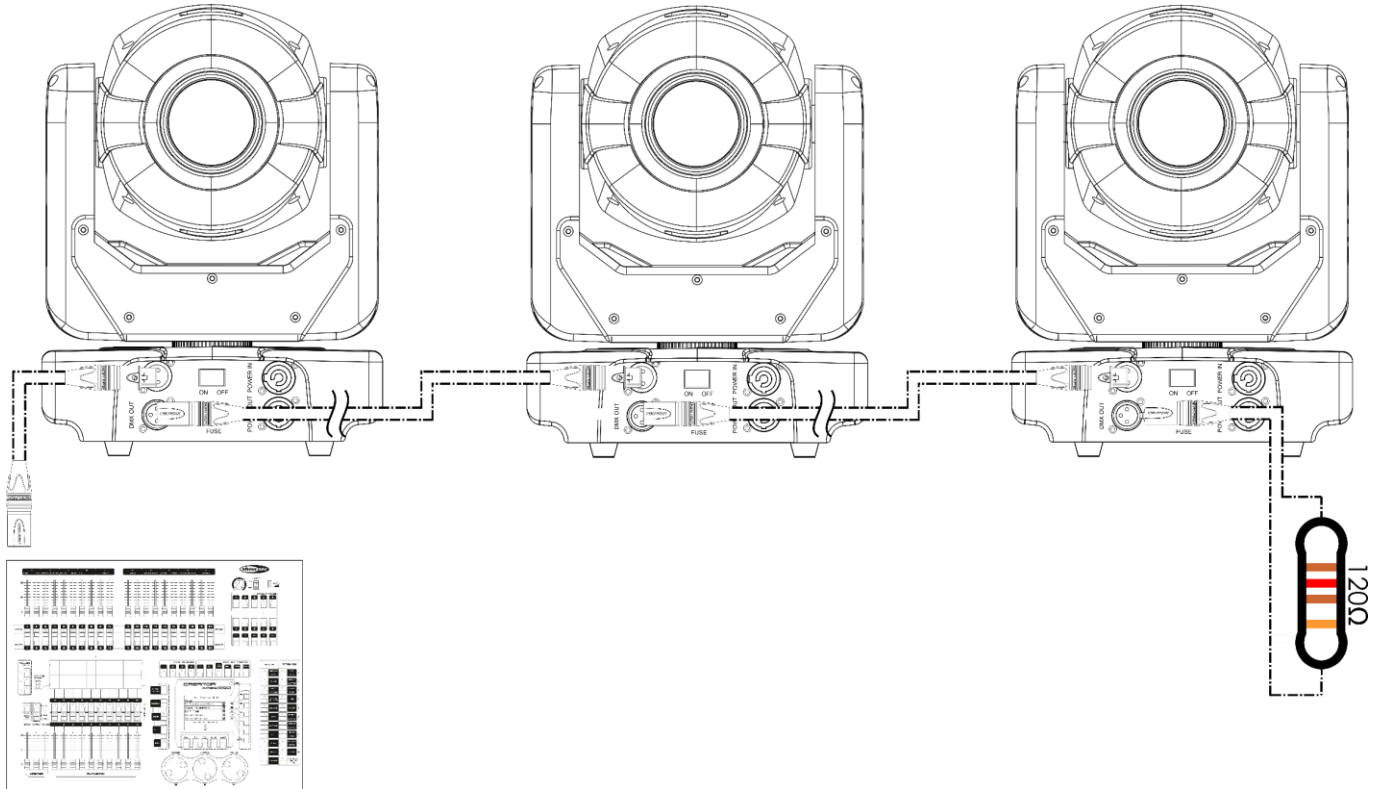


Fig. 13

5.3.5. DMX Addressing

In a setup with multiple devices, make sure that you set the DMX starting address of each device correctly. The Shark Spot Two has 2 personalities: 8 channels and 15 channels.

If you want to connect multiple devices on one data link and use them in 15-channel mode, for example, follow the steps below:

- 01) Set the starting address of the 1st device on the data link to 1 (001).
- 02) Set the starting address of the 2nd device on the data link to 16, as $1 + 15 = 16$.
- 03) Set the starting address of the 3rd device on the data link to 31, as $16 + 15 = 31$.
- 04) Continue assigning the starting addresses of the remaining devices by adding each time 15 to the previous number.

Make sure that you do not have any overlapping channels in order to control the Shark Spot Two correctly. If two or more devices are addressed similarly, they will work similarly.

6. Operation

6.1. Safety Instructions for Operation



Attention

This device must be used only for the purposes it is designed for.

This device is intended for professional use as a moving head. It is not suitable for households and for general lighting.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.



Attention

Power supply

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

6.2. Control Modes

The Shark Spot Two can be operated with a DMX controller, or without a DMX controller as a stand-alone device or in a master/slave setup.

The Shark Spot Two supports the following control modes:

- Stand-alone: Auto operation mode, programs, sound)
- Master/Slave: Auto operation mode, programs, sound
- DMX-512: 2 channel modes (8 and 15 channels)

For more information about how to connect the devices, refer to **5. Setup** on pages 16–18.

In auto operation mode you can run the auto program or one of the 9 built-in auto programs.

To run the separate auto program without a DMX controller, activate Auto menu. See **6.6.3. Running Mode** on page 23 for more information.

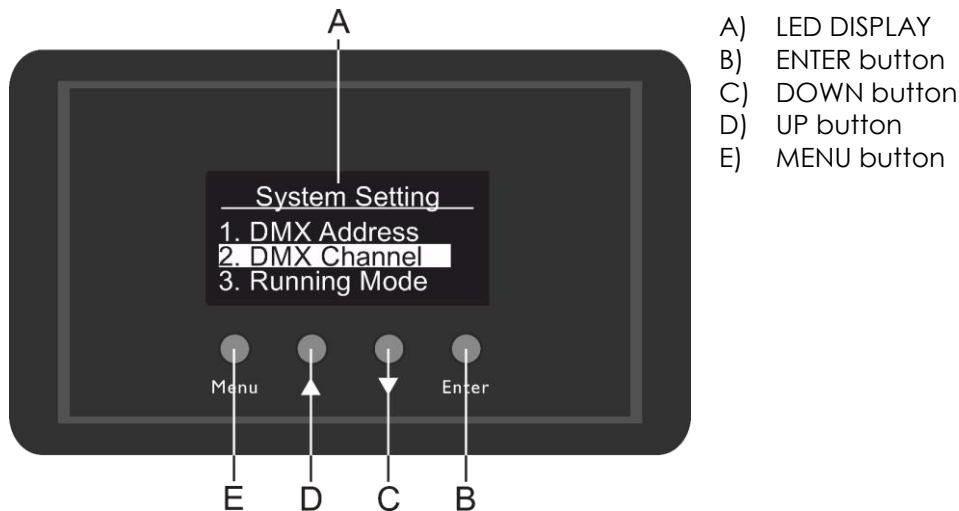
To run one of the 9 programs without a DMX controller, activate Programs menu. See **6.6.4 Programs** on page 23 for more information.

For more information about sound-controlled operation mode see **6.6.3. Running Mode** on page 23.

To operate the device with a DMX controller:

- 01) Select DMX mode in the Run Mode menu. See **6.6.3. Running Mode** on page 23 for more information.
- 02) Set the DMX starting address of the device in the DMX Address menu. See **6.6.1. DMX Address** on page 22 for more information.
- 03) Select the DMX channel mode in the DMX Configuration menu. See **6.6.2. DMX Channel** on page 22 for more information. See **6.8. DMX Channels** on page 27 for complete overview of all DMX channels.

6.3. Control Panel



- A) LED DISPLAY
- B) ENTER button
- C) DOWN button
- D) UP button
- E) MENU button

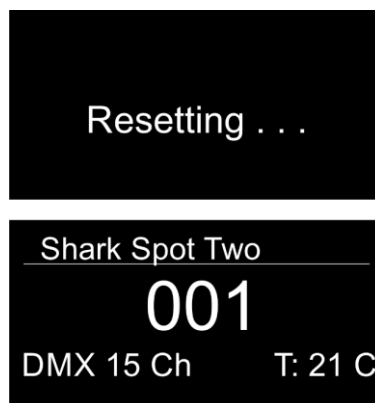
Fig. 14

- Use the **MENU** button to open the main menu or to exit the current submenu and return to the main menu.
- Use the **UP/DOWN** buttons to navigate through the menus or to increase/decrease numeric values.
- Use the **ENTER** button to open the desired menu, to confirm your choice or to set the currently selected value.

6.4. Start-up

Upon start-up the display shows a splash screen with the Showtec logo.

Afterwards the display shows the start screen. The start screen provides information about the temperature of the LEDs, the DMX starting address of the device, and the selected DMX channel mode:

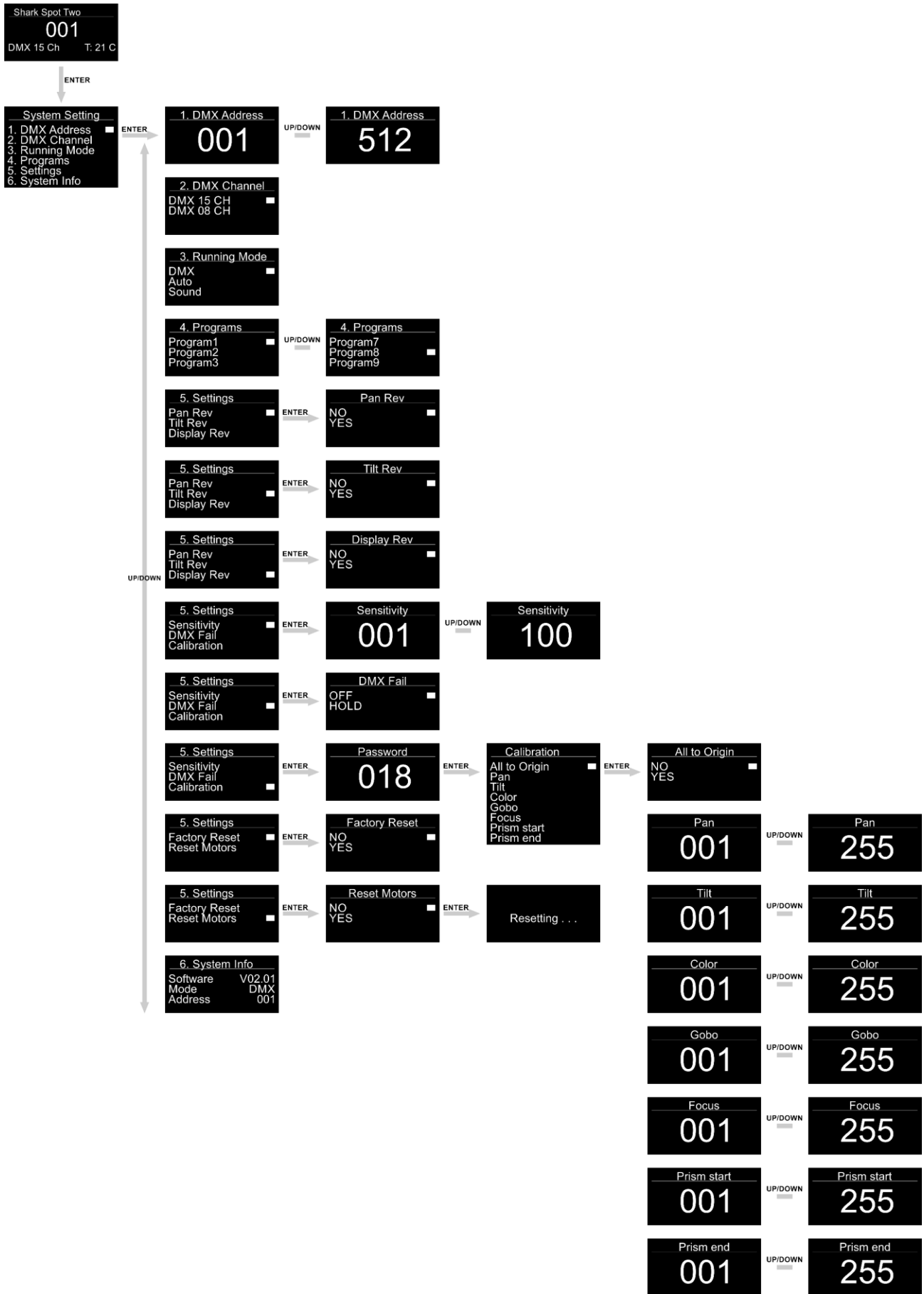


Press the **ENTER** button or the **UP/DOWN** buttons to enter the main menu.

Note:

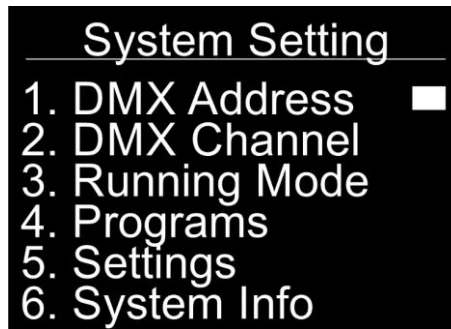
If no button is pressed, after 25 seconds of inactivity the display will turn off. Press any button to turn the display on.

6.5. Menu Overview



6.6. Main Menu Options

The main menu has the following options:



- 01) Press the **UP/DOWN** buttons to navigate through the main menu.
- 02) Press the **ENTER** button to open the submenus.

Note:

One of the submenus require a password. The default password is **018**.

6.6.1. DMX Address

In this menu you can set the DMX starting address of the device.

- 01) Press the **UP/DOWN** buttons to select the DMX starting address of the device. The selection range depends on the active DMX channel mode:
 - 8 CH: 001–505
 - 15 CH: 001–498
- 02) Press the **ENTER** button to save the changes.

6.6.2. DMX Channel

In this menu you can choose a DMX configuration.

- 01) In main menu, press the **UP/DOWN** buttons until the display shows DMX CHANNEL.
- 02) Press the **ENTER** button to open the menu. The display will show:

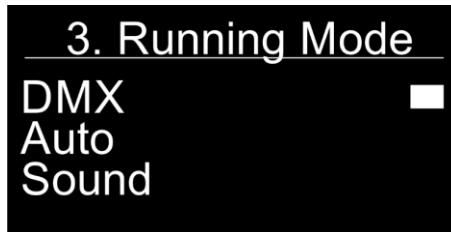


- 03) Press the **UP/DOWN** buttons to choose 8 or 15 DMX channels.
- 04) Press the **ENTER** button to confirm the desired DMX channels.

6.6.3. Running Mode

In this menu you can set the control mode of the device.

01) Press the **UP/DOWN** buttons to select one of the 3 operation modes. The display will show:



02) The operation modes are:

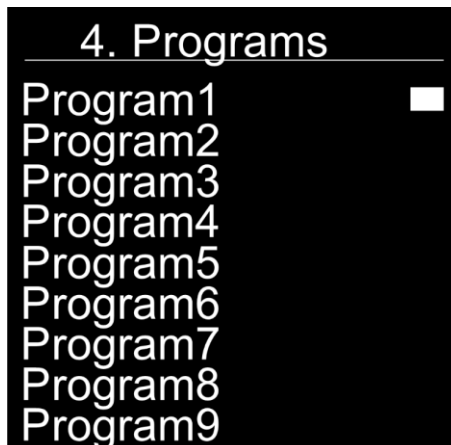
- DMX: DMX mode (Also used for Master-Slave setting)
- Auto: The Shark will run the built-in programs
- Sound: The Shark will react to the beat of the background music

03) Press the **ENTER** button to confirm your choice.

6.6.4. Programs

In this menu you can run individual built-in programs.

01) Press the **UP/DOWN** buttons to select one of the 9 built-in programs. The display will show:



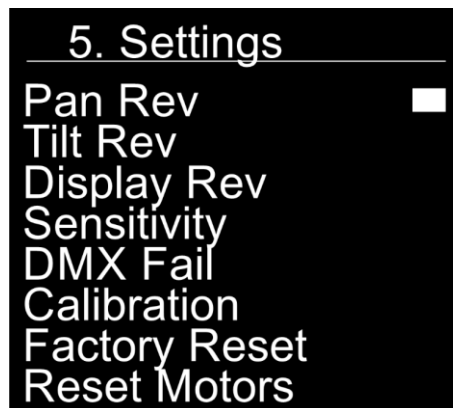
02) Press the **ENTER** button to confirm your choice.

03) The device will now run the chosen built-in program

6.6.5. Settings

In this menu you can set the Shark's settings.

01) Press the **UP/DOWN** buttons to select the desired submenu. The display will show:



02) Press the **ENTER** button to enter the desired submenu.

03) The submenus are:

- Pan Rev: Pan reverse. Press the **UP/DOWN** buttons to choose between NO/YES.
 - Tilt Rev: Tilt reverse. Press the **UP/DOWN** buttons to choose between NO/YES.
 - Display Rev: Display reverse. Press the **UP/DOWN** buttons to choose between NO/YES.
 - Sensitivity: Sound sensitivity. Press the **UP/DOWN** buttons to set between 001–100, from OFF to high sound sensitivity.
 - DMX Fail: To adjust the behaviour of the device in case of a DMX signal error. Press the **UP/DOWN** buttons to choose between OFF and Hold. Choose OFF and the device will blackout its output, when a DMX signal error occurs. Choose Hold and the device will fall back on the last properly working DMX signal from before the DMX signal error, which ensures uninterrupted performance.
 - Calibration: See page 25 for more information.
 - Factory Reset: Restore default settings. Press the **UP/DOWN** buttons to choose between YES/NO.
 - Reset Motors: Reset the motors responsible for the movement of the moving head.
- 04) Once you have adjusted the settings, press the **ENTER** button to save changes.

6.6.5.1. Calibration

In this menu you can set the initial movement and color parameters of the Shark.

- 01) Once you have chosen CALIBRATION (see page 25) press the **ENTER** button to open the menu.
- 02) You will now need to insert the password, in order to access the menu. Press the **UP/DOWN** buttons until the display shows **018** and press the **ENTER** button to confirm. The display will show:



03) The submenus are:

- All To Origin: Restore default calibration settings.
- Pan: Set the initial pan position.
- Tilt: Set the initial tilt position.
- Color: Set the initial color position.
- Gobo: Set the initial gobo position.
- Focus: Set the initial focus position.
- Prism Start: Set the initial prism start position.
- Prism End: Set the initial prism end position.

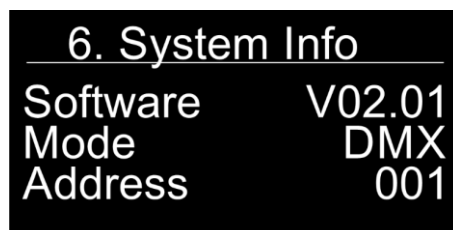
04) Once you have chosen the option which you would like to adjust, press the **ENTER** button to open the menu. The adjustment ranges are from 001–255.

05) Press the **UP/DOWN** buttons to adjust settings and press the **ENTER** button to save changes.

6.6.6. System Info

In this menu you can view the status of the Shark.

01) Press the **ENTER** button to open the menu. The display will show:



02) It is now possible to view the current software version, currently active operation mode and the DMX starting address.

6.7. Remote Control



Fig. 15

Button	Function	Description
	ON/OFF	Double-press the button (within 5 seconds) to switch IR mode ON or OFF.
	Reset	Press the button to reset settings.
	LEDs ON/OFF	Press the button to switch the LEDs ON/OFF.
	Colors	Press the button to switch colors.
	Gobos	Press the button to switch gobos.
	Gobo rotation	Press the button to switch gobo rotation ON/OFF.
	Prism	Press the button to switch the prism ON/OFF.
	Prism Rotate	Press the buttons to set the prism rotation. There are 9 steps (0-100%).
	Position	Press the button to set a position. There are 8 static positions.
	Focus +/-	Press the button to set focus (0-100%).
	Dimmer +/-	Press the buttons to set the dimmer brightness. There are 8 steps (0-100%).
	Strobe	Press the button to set the strobe frequency. There are 8 steps (from low to high frequency).
	Clear settings	Press the button to clear gobo, gobo rotation, color, strobe and prism settings.
	Function buttons	Press the buttons while in Auto, Sound-controlled or Pan/tilt manual mode.
	Auto mode	Press the button to activate Auto mode. Press the 1-8 buttons to select the desired built-in program.
	Sound-controlled mode	Press the button to activate Sound-controlled mode. Press the 1-9 buttons to set sound sensitivity (from low to high sensitivity).
	Pan/tilt manual	Press the button to activate manual positioning. Pan/tilt will be reset to their center position. Press the 5, 6, 8, 9 buttons to manually set pan/tilt.

6.8. DMX Channels

6.8.1. 8 channels, 15 channels

8 CH	15 CH	Function	Value	Setting
1	1	Pan	000–255	Pan adjustment 0°–540°
	2	Pan Fine	000–255	Pan adjustment, 16-bit
2	3	Tilt	000–255	Tilt adjustment 0°–210°
	4	Tilt Fine	000–255	Tilt adjustment, 16-bit
3	5	Pan/Tilt Speed	000–255	From fast to slow
4	6	Master Dimmer	000–255	From low to high intensity (0–100 %)
5	7	Strobe	000–003	Shutter open
			004–099	Linear strobe, from low to high frequency (0–25 Hz)
			100–149	Pulse strobe, from slow to fast
			150–199	Lightning strobe, from slow to fast
			200–249	Random strobe, from slow to fast
			250–255	Shutter open
8	Color Wheel	000–007	White / Open	
		008–015	White + Red	
		016–023	Red	
		024–031	Red + Yellow	
		032–039	Yellow	
		040–047	Yellow + Cyan	
		048–055	Cyan	
		056–063	Cyan + Green	
		064–071	Green	
		072–079	Green + Orange	
		080–087	Orange	
		088–095	Orange + Magenta	
		096–103	Magenta	
		104–111	Magenta + Blue	
		112–119	Blue	
		120–127	Blue + White	
		128–189	Counterclockwise color flow (CCW), from fast to slow	
		190–193	Stop	
194–255	Clockwise color flow (CW), from slow to fast			
9	Gobo Wheel	000–015	White / Open	
		016–030	Gobo 1	
		031–045	Gobo 2	
		046–060	Gobo 3	
		061–075	Gobo 4	
		076–090	Gobo 5	
		091–105	Gobo 6	
		106–119	Rotating Gobo 1 shake effect, from slow to fast	
		120–133	Rotating Gobo 2 shake effect, from slow to fast	
		134–147	Rotating Gobo 3 shake effect, from slow to fast	
		148–161	Rotating Gobo 4 shake effect, from slow to fast	
		162–175	Rotating Gobo 5 shake effect, from slow to fast	
		176–189	Rotating Gobo 6 shake effect, from slow to fast	
		190–221	Clockwise rotation (CW) gobo flow from slow to fast	
		222–223	Stop	
		224–255	Counter-clockwise rotation (CCW) gobo flow from slow to fast	

	10	Gobo rotation	000–127	Gobo indexing (0–720°)
			128–188	Counter-clockwise gobo rotation, from fast to slow
			189–193	Stop
			194–255	Clockwise gobo rotation, from slow to fast
6	11	Focus	000–255	Motorized focus, from small to big
	12	Prism (3-facet)	000–127	Prism Off
			128–255	Prism On
	13	Prism Rotation	000–005	No Function
			006–255	Prism rotation, from slow to fast
7	14	Auto Programs	000–015	No function
			016–041	Program 1
			042–067	Program 2
			068–093	Program 3
			094–115	Program 4
			116–141	Program 5
			142–167	Program 6
			168–193	Program 7
			194–209	Program 8
			210–219	Program 9
			220–255	Sound-controlled from low to high sensitivity
8	15	Reset	000–250	No function
			251–255	Reset (after 3 sec)

Note:

Make sure that the Master Dimmer channel is open in order to see the light output.

6.9. Rotating Gobo Wheel and Color Wheel

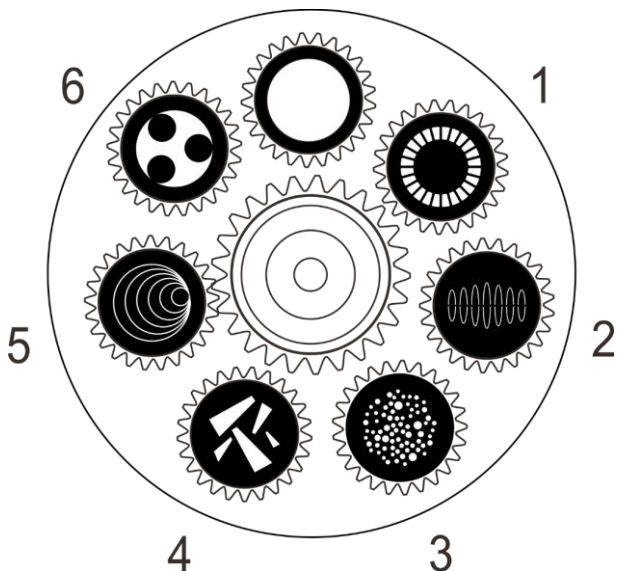


Fig. 16

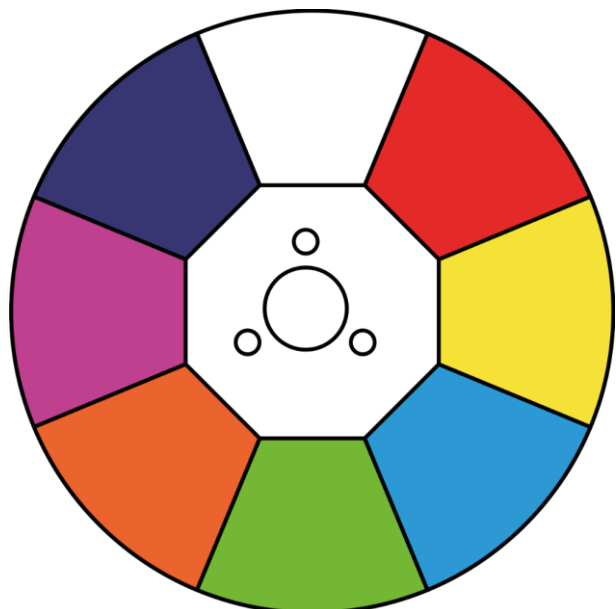


Fig. 17

7. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	<ul style="list-style-type: none"> Check if power is switched on and cables are plugged in
	Internal fuse is blown	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer
The device responds erratically	The factory settings of the device are changed	<ul style="list-style-type: none"> Reset the device's parameters to the default factory settings. See 6.6.5.1. Calibration on page 25
The device does not respond to DMX control	The controller is not connected	<ul style="list-style-type: none"> Connect the controller
	The signal is reversed. The 3-pin DMX OUT of the controller does not match the DMX IN of the device	<ul style="list-style-type: none"> Install a phase-reversing cable between the controller and the device
	The controller is defective	<ul style="list-style-type: none"> Try using another controller
The device responds erratically to DMX control	Bad data link connection	<ul style="list-style-type: none"> Examine connections and cables. Correct poor connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	<ul style="list-style-type: none"> Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	<ul style="list-style-type: none"> Check address settings and correct, if necessary
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	<ul style="list-style-type: none"> To find out which device is defective, bypass one device at a time until normal operation is restored
No light or LEDs cut out intermittently	LEDs are damaged	<ul style="list-style-type: none"> Disconnect the device and contact your Highlite International dealer
	The power supply settings do not match local AC voltage and frequency	<ul style="list-style-type: none"> Disconnect the device. Check the settings and correct, if necessary

8. Maintenance

8.1. Safety Instructions for Maintenance



DANGER
Electric shock caused by dangerous voltage inside

Disconnect power supply before servicing or cleaning.

8.2. Preventive Maintenance



Attention
Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixations and installation points.
- The lens is not cracked or damaged.
- The power cables are not damaged and do not show any material fatigue.

8.2.1. Basic Cleaning Instructions

The external lens of the device must be cleaned periodically in order to optimize the light output. The cleaning schedule depends on the conditions at the site where the device is installed. When smoke or fog machines are used at the site, the device will need more frequent cleaning. On the other hand, if the device is installed in well-ventilated area, it will need less frequent cleaning. To establish a cleaning schedule, examine the device at regular intervals during the first 100 hours of operation.

To clean the device, follow the steps below:

- 01) Disconnect the device from the electrical power supply.
- 02) Allow the device to cool down for at least 5 minutes.
- 03) Remove the dust collected on the external surface with dry compressed air and a soft brush.
- 04) Clean the lens with a damp cloth. Use a mild detergent solution.
- 05) Dry the lens carefully with a lint-free cloth.
- 06) Clean the DMX and other connections with a damp cloth.



Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.
- Make sure that the connections are fully dry before connecting the device to the power supply and to other devices.

8.3. Corrective Maintenance

The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

8.3.1. Replacing the Fuse



DANGER
Electric shock caused by short-circuit

- Do not bypass the thermostatic switch or fuses.
- For replacement use fuses of the same type and rating only.

Power surges, short-circuit or incorrect electrical power supply may cause a fuse to burn out. If the fuse burns out, the device will not function anymore. If this happens, follow the steps below.

- 01) Disconnect the device from the electrical power supply.
- 02) Allow the device to cool down for at least 20 minutes.
- 03) Loosen the fuse cover with a screwdriver and remove the fuse holder.
- 04) If the fuse is brown or unclear, it is burned out. Remove the old fuse.
- 05) Insert a new fuse in the fuse holder. Make sure that the type and the rating of the replacement fuse are the same as the ones specified on the information label of the product.
- 06) Replace the fuse holder in the opening and tighten the fuse cover.

9. Deinstallation, Transportation and Storage

9.1. Instructions for Deinstallation



WARNING

Incorrect deinstallation can cause serious injuries and damage of property.

- Let the device cool down before dismounting.
- Disconnect power supply before deinstallation.
- Always observe the national and site-specific regulations during deinstallation and derigging of the device.
- Wear personal protective equipment in compliance with the national and site-specific regulations.

9.2. Instructions for Transportation

- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: "Handle with care", "This side up", "Fragile".

9.3. Storage

- Clean the device before storing. Follow the cleaning instructions in chapter **8.2.1. Basic Cleaning Instructions** on page 30.
- Store the device in the original packaging, if possible.

10. Disposal

Correct disposal of this product



Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

11. Approval



Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.



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