

Instruction Manual



From Software Version 0.78



GT-1 Instruction Manual
Revision 0.5, Applies from firmware version .78
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The GT-1 and this instruction manual are intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting equipment safely and efficiently.

Save this manual for future reference. Replacement copies and updates are available for download in electronic format from www.glp.de.

The information in this manual is subject to change without notice.

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1 Safety Precautions

The GT-1 and this instruction manual are intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting equipment safely and efficiently. These operations require expertise that is not provided in this manual.

Read this manual and familiarize yourself with the safety precautions before installing or using the product. The manufacturer will take no responsibility for damages or harm caused by disregard for the information in this manual.

Should you have questions about the safe operation of the GT-1, please contact an authorized GLP distributor, a list of which can be found at www.glp.de.

1.1 **DANGER! Prevent Hazards that Will Result in Serious Injury or Death**

Avoid direct exposure to a hot or operating lamp. Discharge lamps operate at high internal pressure and can explode without warning. The extremely hot shards of broken glass from an unshielded lamp will cause serious injury. Looking directly at an unshielded lamp can cause serious eye damage. Direct exposure to UV radiation can cause skin burns. Operate the lamp only with all covers in place. Turn off the lamp and allow to cool for at least 60 minutes before removing any head cover. Wear safety goggles whenever the lamp is exposed.

1.2 **WARNING! Prevent Hazards that Could Result in Serious Injury or Death**

Do not look directly into the beam of light: brief exposure can cause eye injury. Avoid exposing your eyes to direct radiation! Do not view the light output with optical instruments or any device that may concentrate the beam. Risk Group 2 product according to EN 62471.

Do not illuminate surfaces within 16 M (52.5 ft.) of the fixture. When concentrated in a narrow beam, the light output is powerful enough to cause burns or fire in illuminated objects at near range.

Installation shall be performed by qualified personnel only in accordance with local regulations. To prevent falls, suspend the GT-1 with hardware specifically designed and rated for the purpose and a form of backup attachment such as a safety cable.

Hot surfaces! Avoid touching lights during the operation. This can cause injuries and/or damage. Avoid placing lighting fixtures in locations where there is risk of accidental contact. Allow fixtures to cool before handling.

Connect the fixture only to a grounded (earthed) power supply with overload protection for protection against electric shock. Verify that power cables and connectors are in good condition. Replace a blown fuse with one of the specified rating only.

1.3 **CAUTION! Prevent Hazards that Could Result in Moderate Injury**

Avoid using strobe effects for extended periods. Flashing light, particularly between

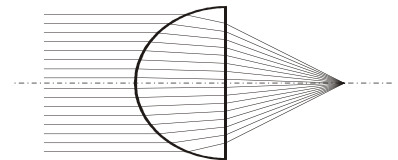
5 and 30 flashes per second, may cause seizures in persons with photosensitive epilepsy. Check local regulations on use of strobe lighting and notify the public in advance when strobe effects are used. If a seizure occurs, stop using strobe effects. Help the person sit in a safe place or lay them on their side with their head supported to prevent it from hitting the floor. Do not use force. Seek emergency medical help if the seizure lasts for more than a few minutes.

Do not operate a fixture with damaged, cracked, or missing pieces. All optical components and covers must be in good condition to prevent injury from UV radiation.

The lamp contains mercury. Do not attempt to clean or repair damage from a broken lamp. Special safety precautions must be taken. Refer the fixture to an authorized service facility.

1.4 **NOTICE! Prevent Damage to Product or other Property**

Avoid pointing the front of the fixture towards direct sunlight or other strong light sources. The front lens focuses and concentrates light just like a magnifying glass. Direct sunlight and other bright light sources can cause internal damage to the fixture, melting components or starting an internal fire within seconds.



Damage can occur whether the fixture is powered on or off. To avoid problems:

- Never expose the front of a fixture to direct sunlight or any other strong light sources.
- For outdoor applications during daylight, make sure that the front face of any fixture is shielded or points away from the sun, even when not in use.
- Avoid pointing other high-powered beam lights directly at the fixture.

Ensure that the moving head can rotate through its full range of motion before powering up the fixture, and that fans and air vents are clean and unobstructed.

Do not pick up or carry the fixture by the front lens bezel. The LCD display is also fragile. Picking up or supporting the fixture in these spots could result in damage that is not covered by the warranty.

Use only original spare parts. Any structural modification on the system will terminate all warranty claims.

Do not exceed 1500 lamp hours. Risk of damage from lamp explosion increases as the lamp approaches its specified usage life. For best performance, replace the lamp after 1000 hours of operation.

Clean optical components only as directed. Oils, solvents, and other chemicals commonly used for cleaning can damage the lens coatings and surfaces.

2 Overview of Features

2.1 *Intended Use*

The GT-1 is for permanent or temporary indoor use in venues where the distance to illuminated surfaces is at least 1.6 M (52.5 ft.). It may be used outdoors if it is protected from moisture and precautions are taken to prevent damage from direct sunlight. It may be placed upright on a level surface or suspended from a suitable structure as described in Section 3.3.

It is not suitable for household use, wherever unattended children have access to it, for permanent outdoor installation, or in areas where the distance from the fixture to illuminated surfaces is less than specified.

The GT-1 shall be installed, operated, and maintained only by persons with the training, knowledge and skills to do safely and efficiently.

2.2 *Lamp*

The GT-1's OSRAM SIRIUS HRI 440W lamp is a compact reflector lamp with a very short arc and high light output optimized to create sparkling effects. The lamp was developed specifically for moving heads to perform in any position. It outputs 22,000 lumens at a color temperature of 7300K with a color rendering index of 80. The lamp's average rated life is 1500 hours. It should be replaced every 1000 hours to minimize the risk of lamp explosion.

2.3 *Pan and Tilt*

The GT-1 pans through 640° and tilts through 262° with coarse and fine control channels and self-correcting position feedback. Position feedback can be disabled and control of pan and tilt can be reversed from the control panel or by DMX.

2.4 *Color*

The GT-1 provides CMY color mixing with progressively saturated cyan, magenta, and yellow wheels. The Old CMY curve setting is for use on prototype fixtures that had different wheels.

A separate color wheel supplements the color mixing system with 11 color filters, including four color correction filters and a light frost filter. The wheel rotates in fixed color steps, scrolls continuously for split color effects, and rotates clockwise and counterclockwise with variable speed.

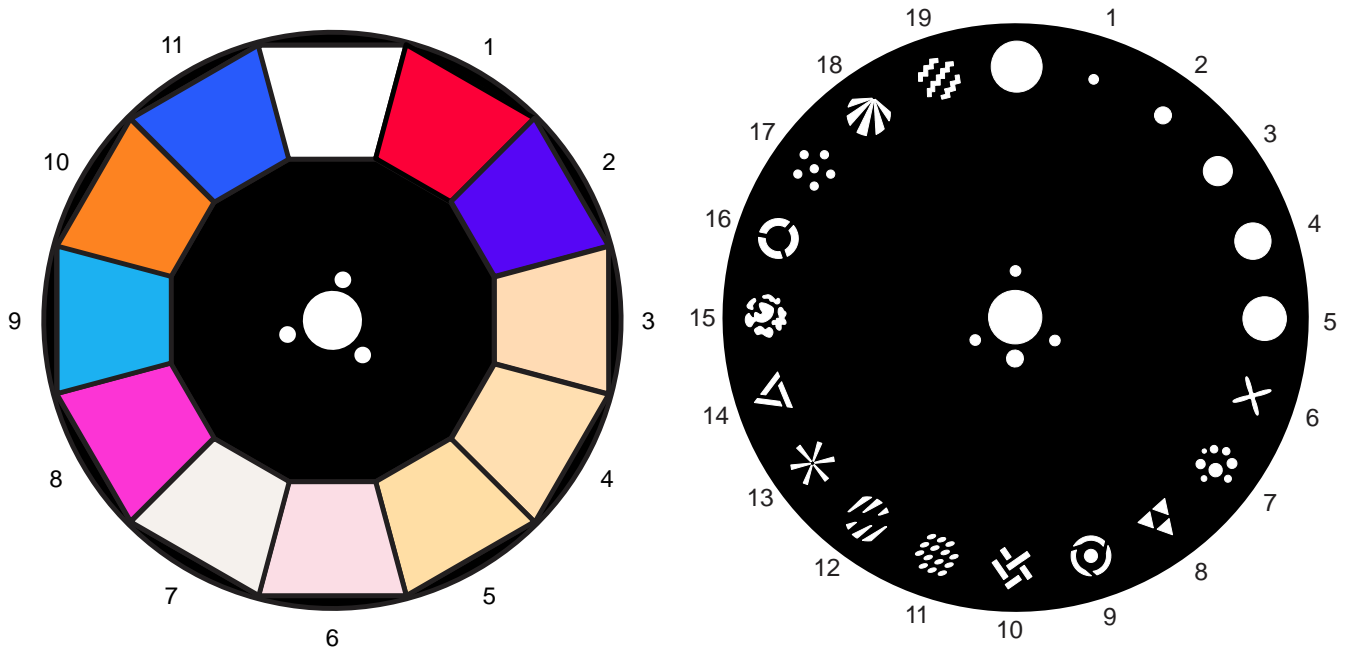


Figure 2-1: Color and fixed gobo wheels

2.5 Gobos

2.5.1 Fixed Gobos

Gobo wheel 2 is an aluminum wheel with 19 patterns, including five iris gobos. The wheel steps to fixed positions and rotates continuously clockwise and counterclockwise with variable speed.

2.5.2 Rotating Gobos

Gobo wheel 1 provides eight user-replaceable rotating glass gobos that can be rotated to indexed positions or continuously with coarse and fine control channels. Custom gobos shall be 22.9 mm in diameter with a maximum image diameter of 13 mm. They may be manufactured in 0.8 mm 5052 aluminum or 1 mm litho/dichro coated quartz. See page 22 for the gobo replacement procedure.

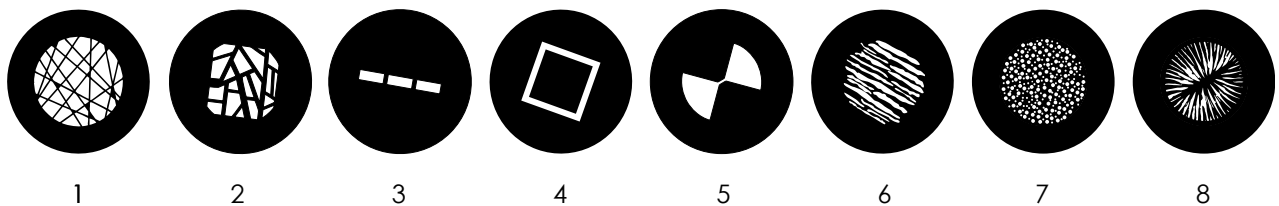


Figure 2-2: Stock rotating gobos

2.6 Dimming and Shutter Effects

The GT-1 features a combined dimmer and shutter system that provides full range dimming along with flashing pulse and strobe effects up to 10 flashes per second.

Two dimming curves are available: linear and extra soft. The mode can be selected from the control panel or by DMX.

2.7 Focus and Zoom

The GT-1 has a 3-element optical train with motorized front lens, zoom lens, and focus lens. The fixture's two-stage zoom system narrows the focused beam from 56° down to 3.5° by moving the zoom lens from front to back. It narrows the beam to 2.5° in Beam Mode by moving the front lens forward. The beam may be narrowed further by inserting iris gobos.

When inserted, the frost filter and prisms are in the path of the zoom lens. When either of these effects are applied, zoom is not continuous.

- Zoom channel values from 82 to 177 are disabled when frost is applied.
- Zoom channel values from 107 to 208 are disabled when a prism is inserted.

When taking zoom past these levels in either direction, the frost and prism effects are automatically removed momentarily.

2.8 Prisms and Frost

The GT-1 provides three rotating prisms: a 3-facet, an 8-facet, and a 4-facet linear. The prisms can be rotated to indexed positions or continuously at variable speed. Inserting or removing a prism with zoom at a DMX level from 107-208 will cause a small change in the zoom lens position.

The GT-1 has a split-flag variable frost filter that provides a wide angle wash effect. Inserting or removing frost at zoom levels from 82-177 will cause a small change in the zoom lens position.

2.9 Animation Wheel

The GT-1's animation wheel can be inserted gradually to positions that, when combined with variable speed clockwise and counterclockwise rotation, give the appearance of vertical, diagonal, or horizontal movement in two directions.



Figure 2-3: Animation wheel

2.10 Changing Effect Settings by DMX

The Control Channel (23 in Normal DMX Mode) provides the ability to change fixture settings, turn the lamp on/off, and perform a fixture reset from the control desk. To send a send a Control Channel command, start from level 0 and hold the command for three seconds.

2.11 Display

The illuminated graphic LCD display with touch wheel control and self-charging battery allows you to change fixture settings quickly and intuitively under any conditions, even when the power is off. See Chapter 4 for settings, readouts, and related information.

2.12 Base and rigging options

The base provides Camlock attachment points for easy fastening of the included floor stand, omega clamp attachment brackets, and other rigging accessories. It also provides 2 M10 threaded sockets for direct fastening of half-coupler clamps. Two countersunk bolts are provided for clamp attachment.

3 Preparation for Use



Installation shall be performed by qualified personnel only, in accordance with applicable regulations such as BGV C1 and DIN VDE 0711-217.

3.1 Included Items

The GT-1 package includes a floor stand, a power cord with PowerCON connector, and two M10 x 25 countersunk bolts for fastening half-couplers.

3.2 Safe Handling

describe methods of lifting and omega clamps with handles

3.3 Mounting

The GT-1 may be rigged in any orientation or placed on a level surface. When installing, keep the lighting head at least 0.5 m (20 in.) from flammable materials including curtains and stage scenery.

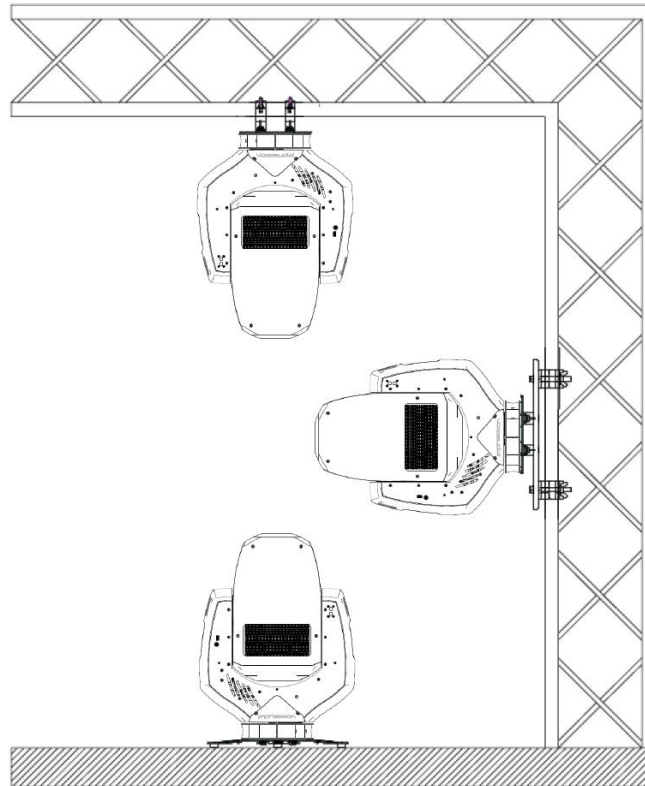


Figure 3-1: Mounting Options

Accessories are available to mount the GT-1 in various positions. These fasten to the connectors on the base to ensure safe and stable installation.

3.3.1 Mounting Upright on a Level Surface

For upright installation on a level surface, fasten the floor stand shipped with the fixture to the base. The floor stand mounts to the base with two Camlock quarter-turn pins. Line up and insert the pins into the base and turn 90° clockwise to lock. Do the opposite to release them.

There are eyelets on both sides of the floor stand that a ratchet strap can be passed through for additional bracing if necessary.

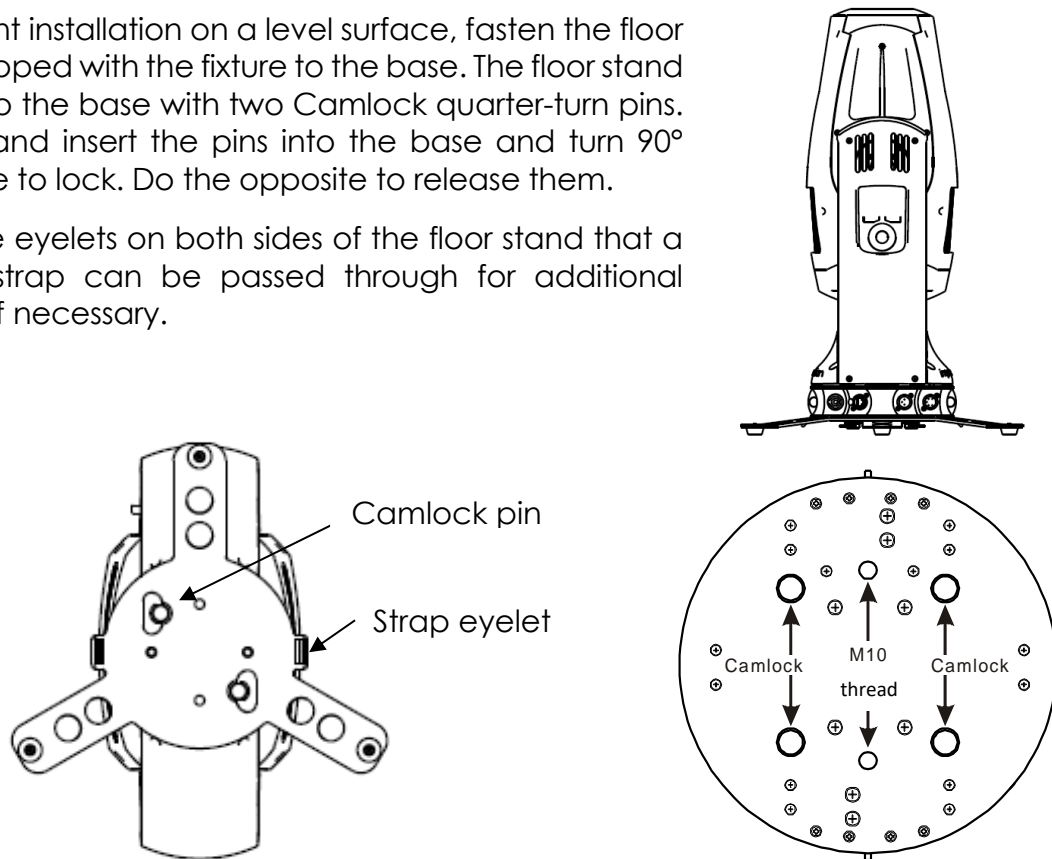


Figure 3-2 Upright Mounting Details

3.3.2 Head Down Mounting

To hang the GT-1 with the head down, mount two omega brackets to the base and fasten a suitable rigging clamp to each omega bracket. The brackets mount to the base with two Camlock quarter-turn pins. Line up and insert the pins into the base and turn 90° clockwise to lock. Do the opposite to release them.

Alternatively, two suitable clamps may be bolted directly to the base with suitable 12 mm diameter hardware. Two countersunk 12 mm screws are shipped with the fixture for this purpose. **Notice! The threaded holes are 19 mm (3/4") deep. Use fasteners that reach at least 11 mm (7/16 in.) and no more than 19 mm (3/4 in.) into the threaded hole.**

Secure as directed in section 3.4.

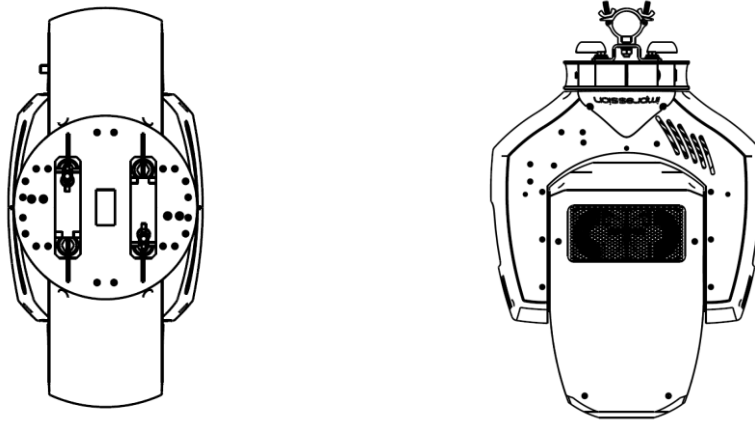


Figure 3-3: Omega Clamp Detail

3.3.3 Sideways Mounting

Notice! Never use the head-down mounting technique for sideways installation, as the base can be damaged and secure installation cannot be assured.

To hang the GT-1 sideways, fasten a dedicated mounting bar, available from GLP as an accessory, to the base. Fasten two suitable half-coupler rigging clamps to the mounting bar to hang the fixture. This technique is necessary to cope with the additional torque when the fixture is mounted sideways.

The mounting bar fastens to the base with Camlock quarter-turn pins. Line up and insert all four pins into the base and turn 90° clockwise to lock. Do the opposite to release them.

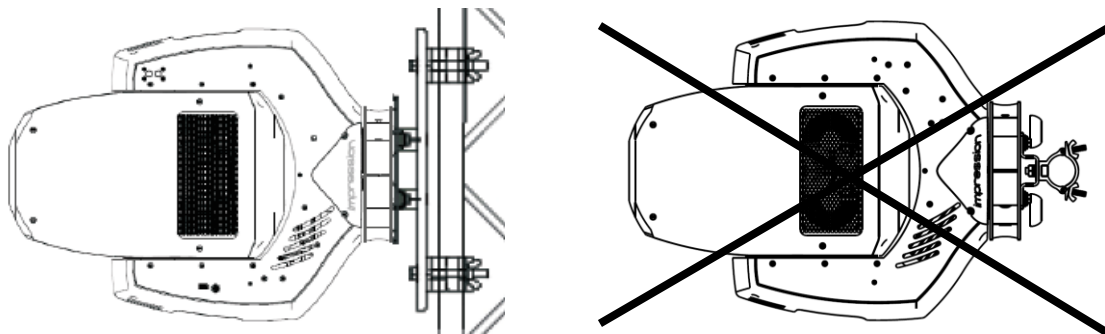


Figure 3-4: Sideways Mounting

3.4 Securing the Device

Warning! Use a secondary attachment (safety wire) that can hold at least 10 times the weight of the fixture whenever hanging the fixture. Two eyes are provided on the base for this purpose. Pass the safety wire through the eye in the base and through or around the truss or supporting structure.

3.5 Connections



Figure 3-5: GT-1 connection sockets

3.5.1 Power



The AC supply shall provide earth ground connection and overload protection. Before applying power, verify that the head is unlocked and can move freely.

The GT-1 provides a 3-conductor, 20 A Neutrik powerCON socket for connection to AC power. The autosensing power supply accepts 100-240 V, 50/60 Hz AC power. Do not connect the fixture to any other voltage or an external dimmer.

To prevent arcing at the power connection, turn the power switch off before connecting or disconnecting a live power cable. Verify that the head is unlocked before turning the fixture on.

The main fuse is located in a holder in the base. **WARNING! Always disconnect the fixture from the mains supply before replacing the fuse. Replace only with fuse of the specified type.**

3.5.2 Control Data

The GT-1 provides both 3-pin and 5-pin XLR input/output sockets for connection to a USITT DMX-512 Standard data link. Use only one DMX input and one DMX output.

The pin connections are Pin 1 = [Ground] / Pin 2 = [-] / Pin 3 = [+]. Pins 4 & 5 on the 5-pin sockets have no contact.

The fixture is ACN ready and provides a Neutrik RJ-45 socket for connection to an ArtNET II compatible Ethernet network.

3.6 Start/stop operation

To start or stop operation, toggle the power switch to the "I" (on) or "O" (off) position.

3.7 Transportation and Storage

The GT-1 should be transported either in a flight case or its original packaging to



protect it from damage from shocks during transportation.

When not installed, store the fixture in a dry location.

4 The Menu Field

The LCD display provides access to user settings, readouts, lamp control, and utilities.

From left to right, the top line of the main menu displays:

- main CPU software version
- pan, tilt, and zoom modes: N(ormal) or I(nverse)
- DMX mode
- dimming mode: L(inear) or E(xtra Soft)



Figure 4-1: Menu display

In the example shown in Figure 4-1, the fixture is running software version .71; with normal pan, inverted tilt, and normal zoom; Normal 23 channel DMX mode; and linear dimming.

When booting up, the panel displays two screens of fixture information including component firmware and hardware versions and fixture and lamp hours before displaying the PCB reset status screen.

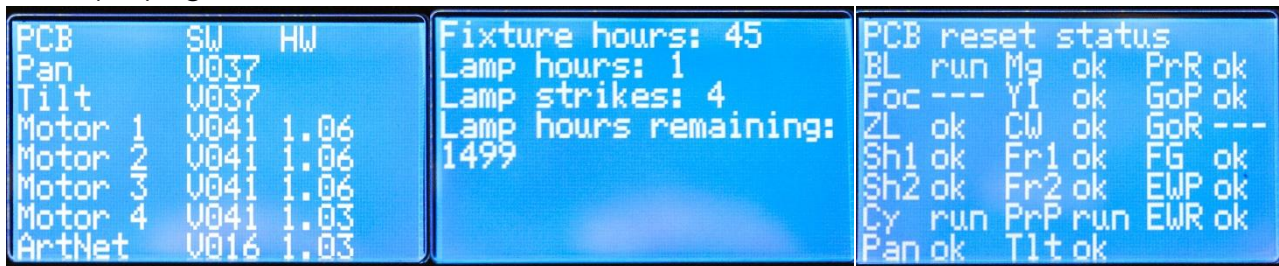


Figure 4-2: Example of boot sequence and reset displays

Following the label for each effect motor, the reset status screen displays either “---” (standby), “run”, “ok”, or “err” while the reset is in progress. When completed, the panel displays the main menu. A flashing display indicates loss of DMX.

Turn the control dial to scroll menu options. Press the Enter button to select a setting, issue a command, or enter a submenu. Press the Mode button to escape and return to the top of the menu.

DMX control is disabled when the menu is active.



Menu Selection		Value	Remarks
DMX Start Address		1-490	Set the DMX start address
Special			
Set dimming mode*			
	ESoft	-	Softer, nonlinear dimming
	LIN	-	Linear dimming
Show Errors		-	Display error messages
DMX hold*		ON/OFF	Hold last values if DMX signal drops
Test mode		ON/OFF	Run a test sequence
Default*		-	Return all user settings to default values
Temperature main		XX	Readout temperature on main PCB (°C)
Temperature base		XX	Readout temperature in base (°C)
Temperature head		XX	Readout temperature in head (°C)
Boot count		XX	Read number of fixture starts
Fixture hours		XX	Read total fixture hours
Lamp strikes		XX	Read number of lamp starts
Lamp hours		XX	Read number of lamp hours
Reset lamp hours		-	Set hours and strikes counters to 0
Adjust			
	Key Code	0-255	Enter code to access menu
	Pan offset	-99 to 99	Enter position offset values
	Tilt offset		
	Beam lens offset		
	Zoom offset		
	Frost1 offset		
	Frost2 offset		
	Prism Position offset		
	Prism Rotation offset		
	Focus offset		
	RotGobo Pos. offset		
	RotGobo Rot. offset		
	FixGobo offset		
	ColorWheel offset		
	Cyan offset		
	Cyan offset fine		
	Magenta offset		
	Magenta offset fine		
	Yellow offset		
	Yellow offset fine		
	Shutter1 offset	ON/OFF	Initiate test
	Shutter2 offset		
	LBAM test mode		

* May be set remotely by DMX



	Serial	1-9999	Enter user-defined ID number
Lamp on*		-	Switch lamp on
Lamp off*		-	Switch lamp off
Old CMY curve*		ON/OFF	Select dimming curve for early CMY flags
Position feedback*		ON/OFF	Toggle position feedback
Reverse pan*		ON/OFF	Reverse pan control
Reverse tilt*		ON/OFF	Reverse tilt control
Reverse zoom*		ON/OFF	Reverse zoom control
Reset pan/tilt only*		-	Reset pan/tilt movement
Reset head only*		-	Reset effects in head
Reset*		-	Reset everything

* May be set remotely by DMX

5 DMX Channels

5.1 Normal Mode (23 DMX Channels)

Channel	Function	Time & Value	Percent	DMX
1 Pan, MSB	coarse pan (high/8-bit)	0-640°	0-100%	0-255
2 Pan, LSB	fine pan (low/16-bit)		0-100%	0-255
3 Tilt, MSB	coarse tilt (high/8-bit)	0-262°	0-100%	0-255
4 Tilt, LSB	fine tilt (low/16-bit)		0-100%	0-255
5 Color Wheel	color wheel position and rotation	(1) open (2) primary red (3) primary blue (4) CTO 4200 (5) CTO 3200 (6) CTO 5600 (7) half minus green (8) light frost (9) vivid pink (10) cyan (11) medium orange (12) Congo blue color scroll / split colors negative rotation, fast to slow rotation stop positive rotation, slow to fast	0-1% 2% 4% 5% 7% 8% 10% 12% 13% 15% 16% 18% 19-65% 66-82% 83% 84-100%	0-3 4-7 8-11 12-15 16-19 20-23 24-27 28-31 32-35 36-39 40-43 44-47 48-167 168-211 212 213-255
6 Cyan	cyan color mixing	no cyan to full cyan	0-100%	0-255
7 Magenta	magenta color mixing	no magenta to full magenta	0-100%	0-255
8 Yellow	yellow color mixing	no yellow to full yellow	0-100%	0-255
9 Gobo Wheel 1	rotating gobo selection	(1) Open (2) Pick Up Sticks (3) Window Grills (4) Dotted Lines (5) Square Outline (6) Fan Flags (7) Linear (8) Speckle (9) Explosion	0-12% 14-23% 24-33% 35-44% 46-54% 56-65% 66-75% 77-86% 88-100%	0-33 34-60 61-87 88-114 115-140 141-167 168-194 195-221 222-255
10 Gobo Indexing / Rotation, MSB	coarse gobo indexing & rotation	coarse indexing, 0-360° negative rotation, fast to slow rotation stop positive rotation, slow to fast	0-49% 50-74% 75% 76-100%	0-127 128-191 192 193-255
11 Gobo Indexing / Rotation, LSB	fine gobo indexing & rotation	fine indexing/rotation speed	0-100%	0-255
12 Gobo Wheel 2	fixed gobo selection	(1) open (2) gobo 01 (3) gobo 02 (4) gobo 03 (5) gobo 04 (6) gobo 05 (7) gobo 06 (8) gobo 07 (9) gobo 08 (10) gobo 09 (11) gobo 10 (12) gobo 11 (13) gobo 12 (14) gobo 13 (15) gobo 14	0-1% 2% 4% 5% 7% 8% 10% 12% 13% 15% 16% 18% 19% 21% 22%	0-3 4-7 8-11 12-15 16-19 20-23 24-27 28-31 32-35 36-39 40-43 44-47 48-51 52-55 56-59

12 Gobo Wheel 2 continued	fixed gobo selection	(16) gobo 15 (17) gobo 16 (18) gobo 17 (19) gobo 18 (20) gobo 19 negative rotation, fast to slow rotation stop positive rotation, slow to fast	24% 25% 27% 29% 30% 32-65% 66% 67-100%	60-63 64-67 68-71 72-75 76-79 80-167 168 169-255
13 Shutter	shutter and strobe effects	closed random pulse, slow to fast fade-in pulse, random slow to fast fade-out pulse, random slow to fast fade-in/out pulse, rnd slow to fast flash, delayed 5 sec. to 1 sec. strobe effect, 1 to 10 Hz shutter open	0-5% 7-18% 19-30% 32-43% 44-55% 56-77% 79-93% 94-100%	0-15 16-47 48-79 80-111 112-143 144-199 200-239 240-255
14 Dimmer	dimmer	open to closed	0-100%	0-255
15 Focus, MSB	coarse focus (low/8-bit)	near to infinity	0-100%	0-255
16 Focus, LSB	fine focus (high/16-bit)	near to far	0-100%	0-255
17 Zoom	zoom angle	zoom angle, wide to near beam mode	0-91% 92-100%	0-234 235-255
18 Frost	insert frost filter	full out to full in	0-100%	0-255
19 Prism	prism selection	open (no prism) 8-facet 3-facet 4-facet linear	0-25% 26-49% 50-73% 74-100%	0-66 67-127 128-188 189-255
20 Prism Rotation	prism indexing and rotation	index 0-360° negative rotation, fast to slow rotation stop positive rotation, slow to fast	0-49% 50-74% 75% 76-100%	0-127 128-191 192 193-255
21 Effect Wheel	insert effect wheel	full out to full in	0-100%	0-255
22 Effect Wheel Rotation	effect wheel rotation	rotation stop negative rotation, fast to slow rotation stop positive rotation, slow to fast	0% 1-49% 50% 51-100%	0 1-127 128 129-255
23 Control Channel	fixture control: set to level 0 before sending command, hold command for 3 seconds	enable commands reserved new CMY curve old CMY curve reset head (only) lamp off no function lamp on Esoft dimmer curve linear dimmer curve disable position feedback enable position feedback disable DMX hold enable DMX hold zoom inverse, Off zoom inverse, On filt inverse, Off filt inverse, On pan inverse, Off pan inverse, On factory defaults fixture reset	0% 1-68% 69% 71% 72% 74% 76% 77% 79% 80% 82% 83% 85% 87% 88% 90% 91% 93% 94% 96% 97% 99-100%	0 1-175 176-179 180-183 184-187 188-191 192-195 196-199 200-203 204-207 208-211 212-215 216-219 220-223 224-227 228-231 232-235 236-239 240-243 244-248 249-251 252-255

6 Optional Accessories

Describe accessories and how to install

7 Cleaning and Maintenance



WARNING! Never look directly into the beam of light or into the lamp. An exposed lamp emits hazardous radiation that can cause burns. Brief exposure can cause eye injury.

7.1 Suggested Maintenance Intervals

The cleaning schedule depends on the operating environment. The intervals below are suggestions from our experience with typical installations. Adjust as necessary.

Maintenance Task	Interval	How
Lamp replacement	1000 hours	See page 24.
Front lens	weekly	soft cloth and glass cleaning fluid
Metal gobos	yearly	vacuum cleaner, airbrush, etc.
Glass gobos	yearly	soft cloth and glass cleaning fluid
Prism	yearly	soft cloth and glass cleaning fluid
Animation wheel	yearly	vacuum cleaner, airbrush, etc.
Internal lenses	yearly	soft cloth <u>no</u> glass cleaning fluid
Fans and air channel	monthly	vacuum cleaner, airbrush, etc.
Moveable parts	yearly	suitable lubricant

7.2 Cleaning

Never use alcohol or solvents to clean the lens! Never let optical parts come into contact with oil, grease, alcohol or similar solvents. (add consequences)

Never touch optical components with bare fingers.

Before running the fixture wait until all parts are dry.

GT-1 components require occasional cleaning to prevent the buildup of dust, dirt, and smoke fluid residue. Pay special attention to the air vents and front lens. Failure to keep the fixture clean will significantly reduce light output and may cause damage. Regular cleaning will ensure the maximum performance and reliable operation. **Under no circumstances should alcohol or solvents be used to clean the fixture or its lenses!**

7.3 Lubrication

add information on points to lubricate and suitable lubricants, get illustration

7.4 Head Maintenance

A hot discharge lamp can explode and cause severe injury. Turn off the lamp and allow it to cool for 60 minutes before opening the head. Wear safety goggles and gloves.



With the exception of installing gobos, any operation that requires removal of a cover shall be performed by a professional service technician with the tools, skills, and personal protective equipment to maintain high-powered lighting equipment safely and efficiently.

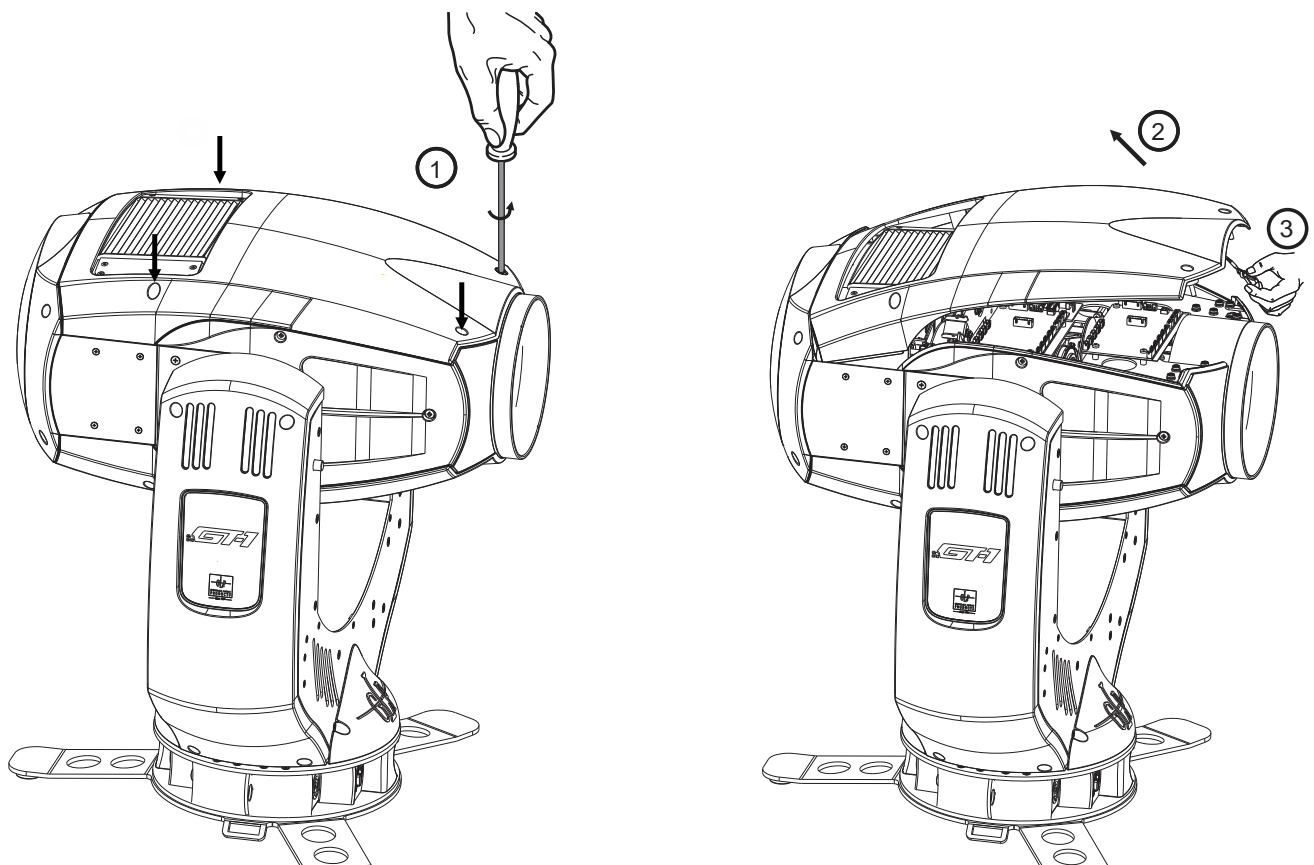


Figure 7-1: Head cover removal

7.4.1 Removing head covers

To remove the top head shell, orient the head as shown above with the front lens to the right and the yoke arm with the GT-1 logo facing you. To remove the bottom head shell, orient the head with the front lens to the left. Remove the head shells as follows:

1. Release the four shell retaining pins by turning them a quarter turn

- counterclockwise with a slotted screwdriver.
2. Lift the head shell up from the front.
3. Release the shell safety cable.
4. Lift the head shell further to free it from the rear cover and remove.

Installation is the reverse. Start at the back and align the opening in the head shell with the air vent to get started.

To remove the rear head cover, simply remove the screw in each corner.

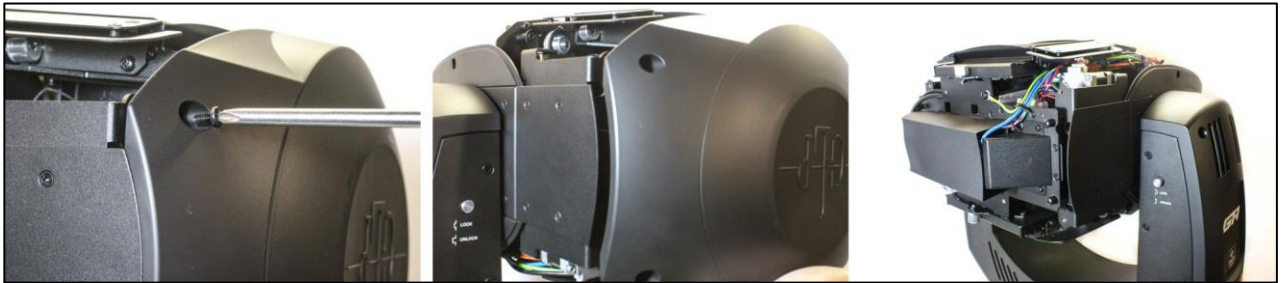


Figure 7-2: Back cover removal

7.4.2 Gobo Change, Single Gobo

Note: Wear gloves when handling gobos. If replacing multiple gobos, it may be easier to remove the module.

To replace a single gobo, proceed as follows:

1. Remove the top head shell as described above.
2. Bring the desired gobo slot to the access port.
3. Turn the holder so the ends of the gobo spring are at the top of the plate as shown to left in Figure 7-3.
4. Using needle-nose pliers, compress and remove the gobo spring.
5. Using a small, soft tool such as a bent cotton swab, gently press the gobo up out of the holder as shown below to right, and remove.

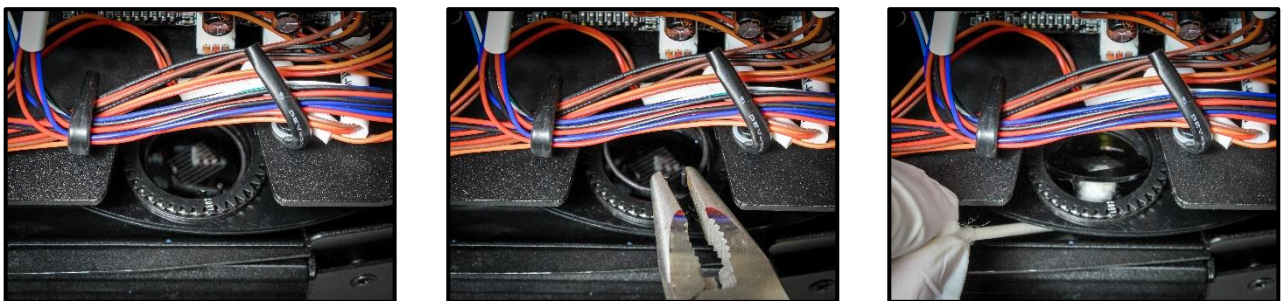


Figure 7-3: Removing a glass gobo

6. Insert the replacement gobo with the coated side facing the lamp.
7. Replace the gobo spring and rotate the holder to verify that the spring is fully seated against the disc.
8. Replace the top head shell.

7.4.3 Removing the Gobo Module

Remove the gobo module as described below and shown in Figure 7-4:

1. Remove the top and bottom head shells and the rear head cover.
2. On the top side of the head, loosen the captive thumb screws on each side of the gobo module (Figure 7-4 panel 1).
3. Flip the head so the bottom faces up.
4. Unplug the bottom fan assembly (panel 2).
5. Loosen the captive thumb screws on each side of the fan (panel 3) and the captive thumb screw at the back of the assembly. Remove the fan assembly.
6. Unplug the gobo module (panel 4).
7. Loosen the two captive thumb screws on the bottom of the module (panel 5).
8. Tilt the head down to slide the zoom lens clear of the module, then lift the module up and out of the head (panel 6).

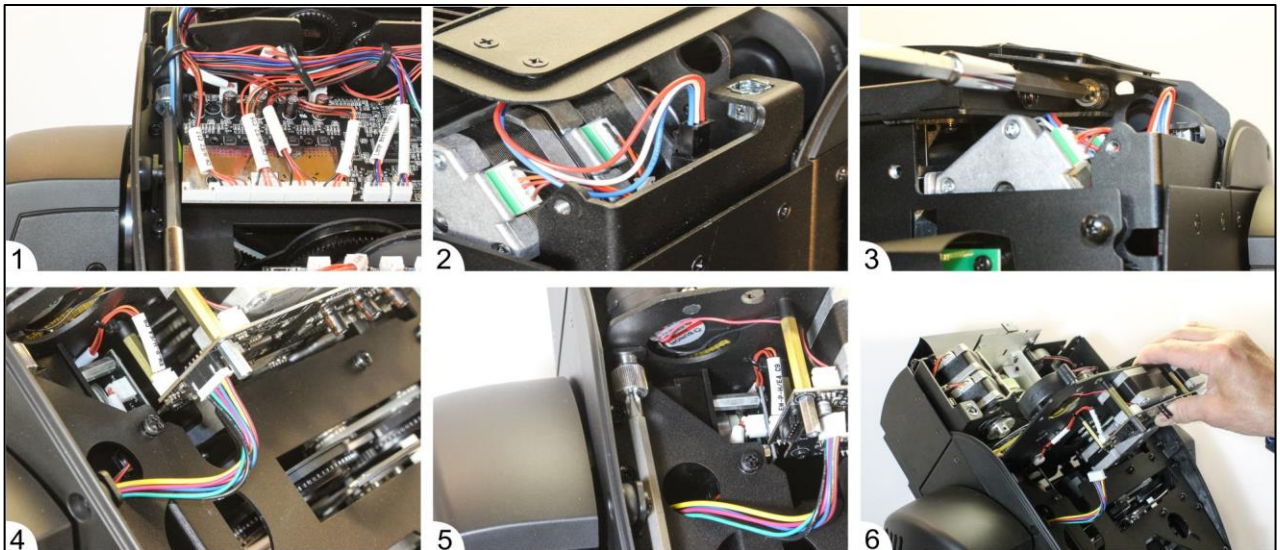


Figure 7-4: Removing the gobo module

When installing, insert the module plate into the slots behind the captive thumb screws.

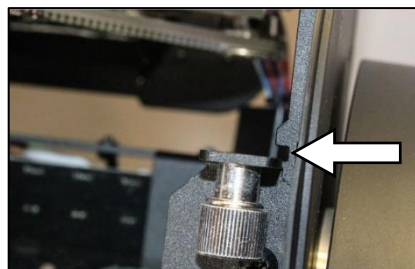


Figure 7-5: Module slot

7.4.4 Lamp Change

The average lamp life is 1500 hours. For best performance and to minimize the risk of lamp explosion, replace the lamp after 1000 hours of use.

To remove the lamp:

1. Remove the head shells and rear cover.
2. Disconnect and remove the fan assemblies from the top and bottom of the lamp housing (1).
3. Turn the head so the top faces up. Pull the top of the ballast cover to unhook from the stand-off spacers (2).
4. Unplug the lamp wires from the ballast (3).
5. Loosen the captive screws at each corner of the lamp housing assembly (4). Move the assembly out of the way without disconnecting it (5).
6. Loosen the four 5.5 mm nuts that secure the lamp retaining clips (6).
7. Pivot the top clip away from the lamp (7). (On some models the top-left nut may need to be fully removed.)
8. Remove the lamp and disconnect the lamp wires (8).
9. Inspect the UV shield and have it replaced if it is cracked or damaged (9).

All optical components must be in good condition to prevent injury from UV radiation.

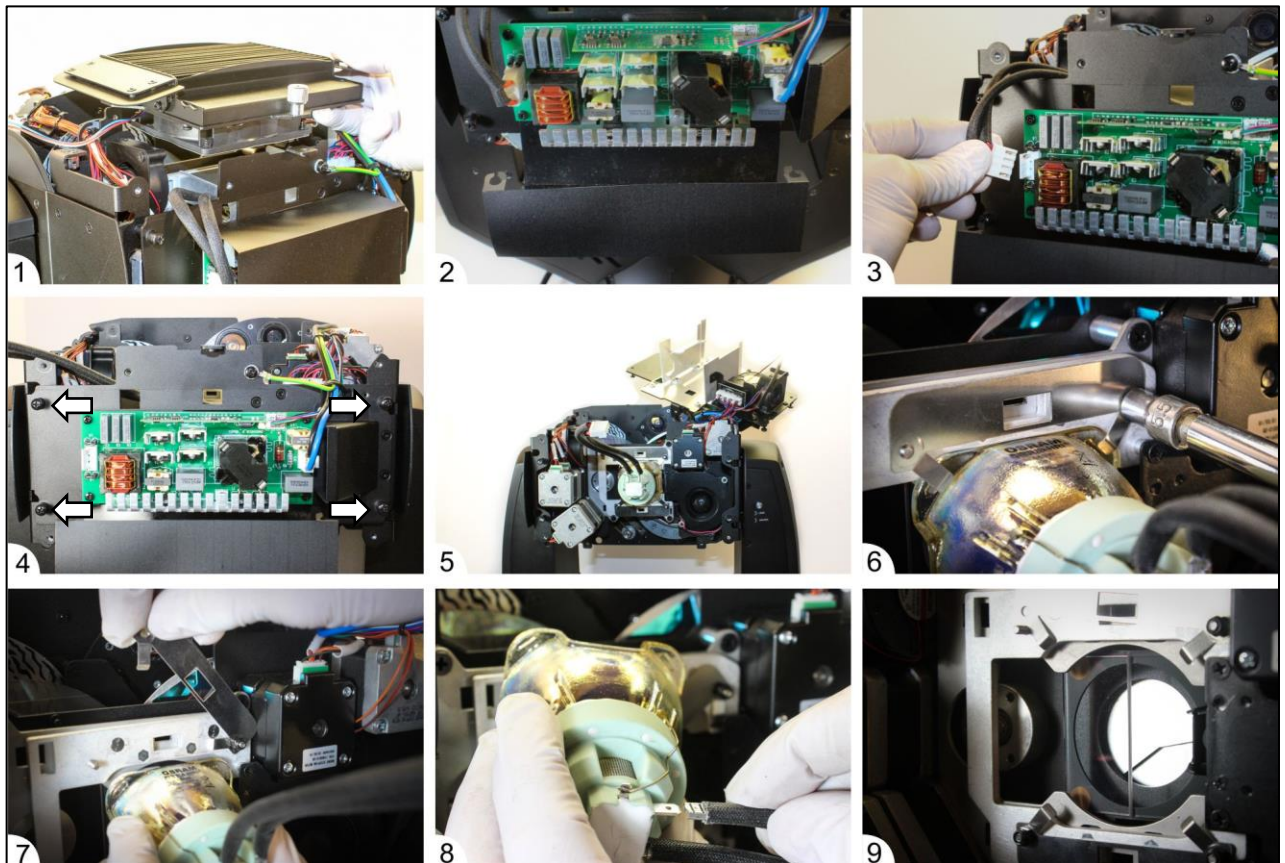


Figure 7-6: Lamp removal

To install a new lamp:

1. Connect the lamp wires to the lamp's spade terminals.
2. Position the lamp in the housing with the wires leading towards the top of the head (1) and tighten the retaining clips.
3. Fasten the lamp housing assembly to the head (2).
4. Lead the lamp wires through the lamp housing assembly and connect to the ballast (3).
5. Hook the ballast cover onto the stand-off spacers (4).
6. Note the different fan wire connectors when reinstalling the fan assemblies: the top fan has the white connector (5). Lead the top fan wires under the larger wire bundle as shown to prevent it from being pinched (6).
7. Install the top and bottom head covers.
8. Reset the lamp hours counter from the display panel.
9. Before installing the rear head cover, you may want to check lamp alignment and adjust if necessary as described below.

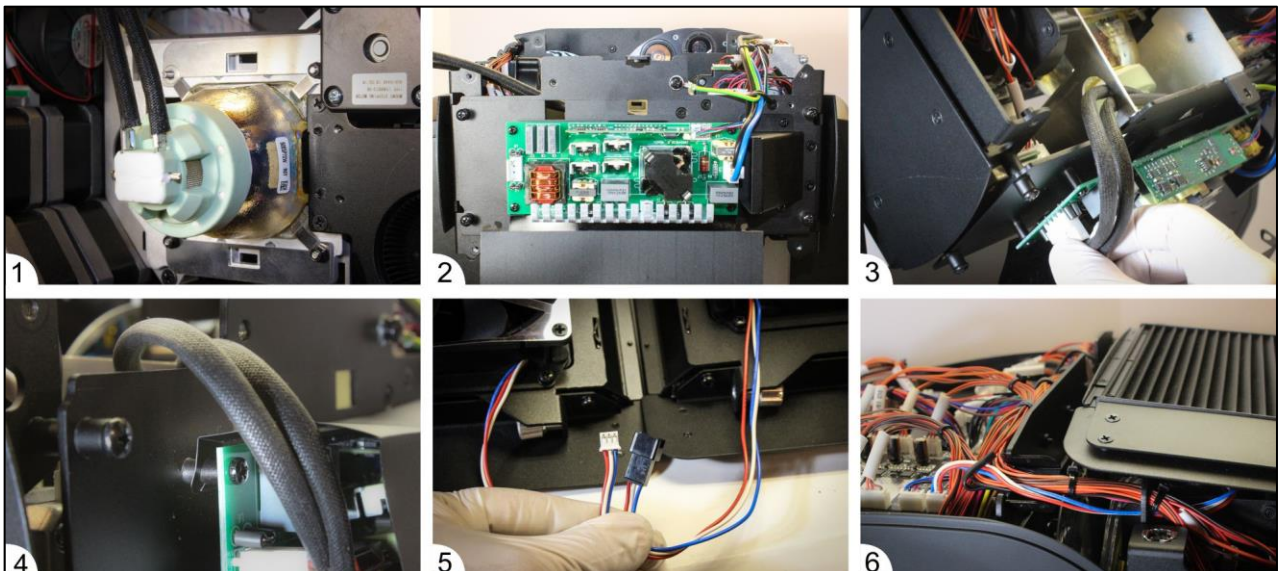


Figure 7-7: Lamp installation

7.4.5 Lamp Adjustment

The position of the lamp can be adjusted to center the hotspot. **Warning! The adjustment procedure requires unshielded exposure to the lamp and may result in serious injury.** Use extreme caution, wear protective equipment, and avoid looking directly at the light output. Apply a strong color filter while performing the adjustment.

There are five adjustment slots in the lamp holder (1). Move the lamp holder up, down, left, or right by twisting a slotted screwdriver inserted in a slot as shown in panel 2 (fan removed for clarity). The top-left slot can be used to move the holder to the left (using inside position) or right (using the outside position).

Perform the adjustment with the fans and head shells installed (3).

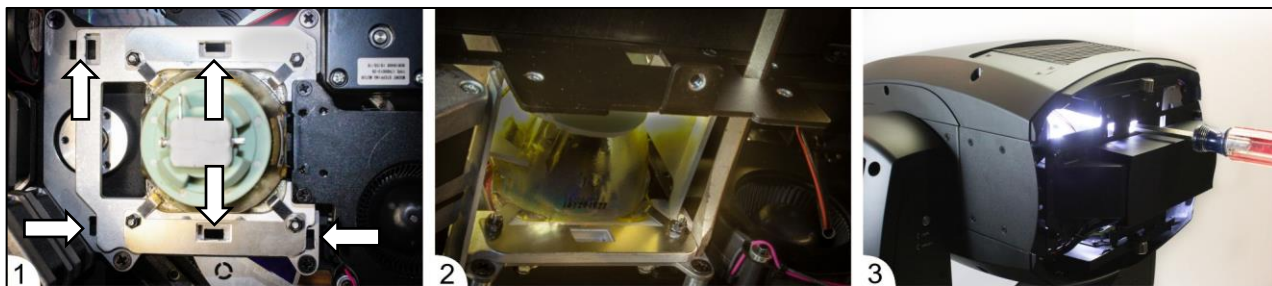


Figure 7-8: Lamp adjustment

7.5 GLP Service and Support

Contact information for the nearest GLP service and support is available online at www.glp.de/en/service, by email at info@glp.de, or by telephone at the following numbers:

- GLP Germany: +49 (7248) 927 19-55
- GLP N. America: +1 818 767-8899
- GLP U.K.: +44 1392 690140
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

8 Technical Specifications

Lightsource

Lamp type	OSRAM SIRIUS HRI 440W
Lifetime	1500 h
Color temperature	7300 Kelvin

Optical system

Minimum zoom	3.5°
Maximum zoom	56.7°
Focus	motorized, 2m - infinite
Beam mode	2.5°

Movement

Resolution	8 - 16 Bit
Position feedback	yes
Pan	640°
Tilt	262°

Control

Control modes	Normal
Display	illuminated graphic LCD, intuitive touch wheel control, self-charging buffer battery, automatic orientation
Protocol	ArtNet, DMX-512, RDM
Wireless	Lumenradio CRMX DMX/RDM (optional)
RDM	Bidirectional communication
Cooling	temperature controlled overheating protection

Effects

Dimmer	0-100% electro mechanic
Shutter	electromechanical
Effect wheel	interchangeable, rotating and indexable
Frost	yes
Prism	rotating 3-way, 8-way, 4-way linear
Gobo wheel 1	8 gobos, rotatable and indexable, interchangeable, dichroic color
Gobo wheel 2	14 fixed metal gobos plus 6 pinholes
Color temperature filter	mechanical, CTO 2500 K, CTB 9000 K
Color wheel	11 dichroic color filters, CTB Filter, CTO Filter
Color mixing	CMY color mixing, fixed colors

Connectors

Signal connection	XLR 5-pin, XLR 3-pin input & output
Power input	Neutrik PowerCon

Operating Conditions

Mains voltage	100-240 VAC / 50-60Hz
Power (@ 230V)	720 W
Fuse	20mm T 8A
Max. ambient temperature	45°C / 115°F
Operating position	any



Mounting Options

- Standing removable baseplate with brackets for ratchet belt
- Hanging (horizontal) adjustable bar for sideways truss installation (optional)
- Hanging (vertical) M10 socket for half coupler or other clamp, Omega brackets
- Safety wire attachment 2 eyelets

Shipping

- Single fixture cardboard
- Tourpack 2-way incl. Flight Case and Half Coupler

Housing Colors

- Standard colors black
- Optional special colors on request

Dimensions & Weight

- Length 229 mm / 9 in
- Width 472 mm / 18.6 in
- Height (head vertical) 618 mm / 24.3 in
- Weight 25 kg / 55 lbs

9 Dimensions

