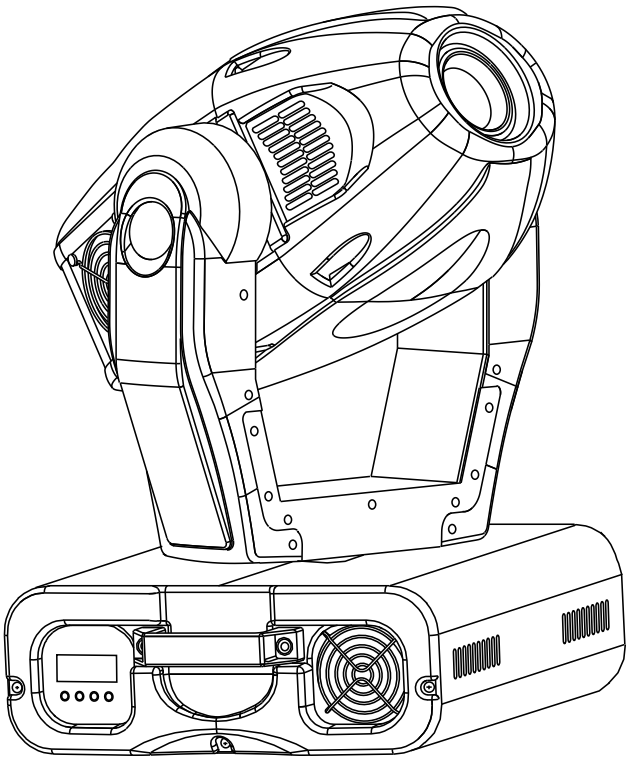
SERVO SPOT 575

automated light system

USER MANUAL



Version 1.0

SERVO SPOT 575

automated light system

Table of contents

CAUTION!
Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOU INITIAL START - UP!

1. Safety instructions

Every person involved with installation and maintenance of this device have to:
- be qualilfied
- follow the instructions of this manual

Caution ! Be careful with your operations.
With a voltage of 230V you can suffer
a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

Important:
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

Always plug in the power plug last. Make sure that the power-switch is set to OFF-position before you connect the device to the mains. The power-plug has to be accessible after installing the device.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.

The electric connection, repairs and servicing must be carried out by a qualified employee.

Do not connect this device to a dimmer pack.

Do not switch the fixture on and off in short intervals as this would reduce the lamp's life.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Do not touch the device's housing with bare hands during its operation (housing becomes hot)!
For replacement use lamps and fuses of the same type and rating only.

CAUTION ! EYEDAMAGES !
Avoid looking directly into the light source
(meant especially for epileptics) !

2. Operating determinations

This device is a moving-head spot for creating decorative effects and was designed for indoor use only.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Never run the device without lamp!

Do not shake the device. Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

The minimum distance between light-output and the illuminated surface must be more than 1 meter.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct eye bolt only.

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explode and emit a high ultraviolet radiation, which may cause burns.

The maximum ambient temperature t_a = 40° C must never be exceeded. Otherwise, the lamp is switched off and the fixture is out of operation for 5 minutes.

Allow the fixture to cool for at least 15 minutes before replacing the lamp.

CAUTION!
The lens has to be replaced when it is obviously damaged,
so that its function is impaired, e. g. due to cracks or deep scratches!

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

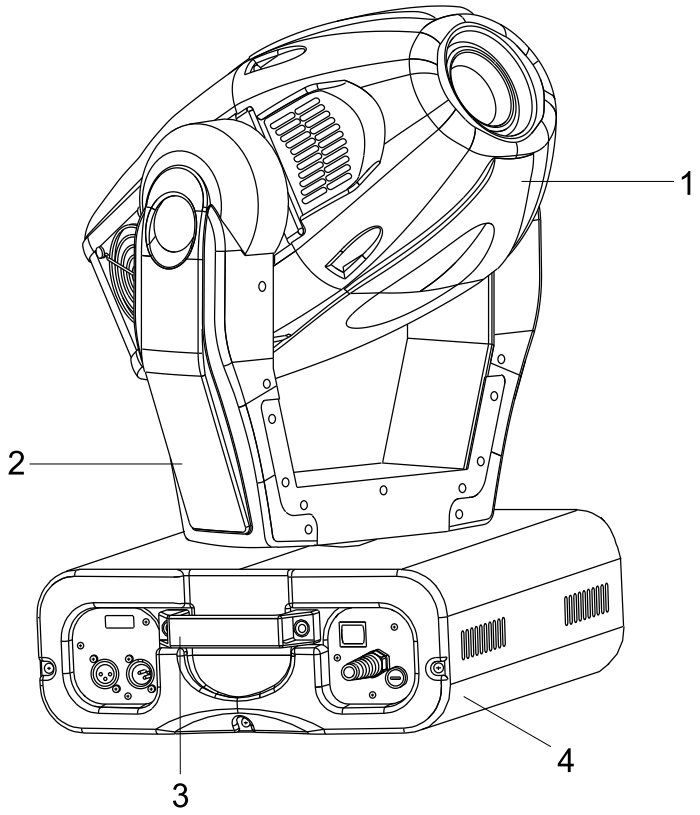
CAUTION!
The lamp has to be replaced when it is damaged
or deformed due to the heat!

Please use the original packaging if the device is to be transported.

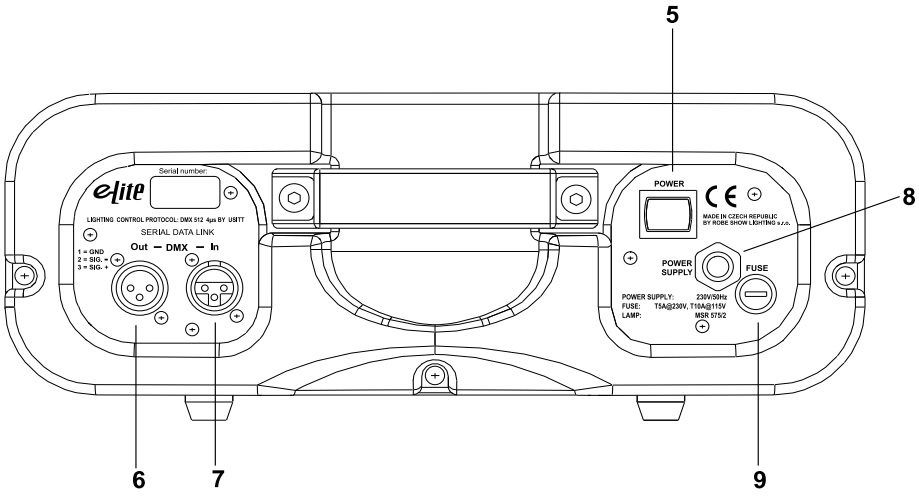
Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, burns due to ultraviolet radiation, lamp explosion, crash etc.

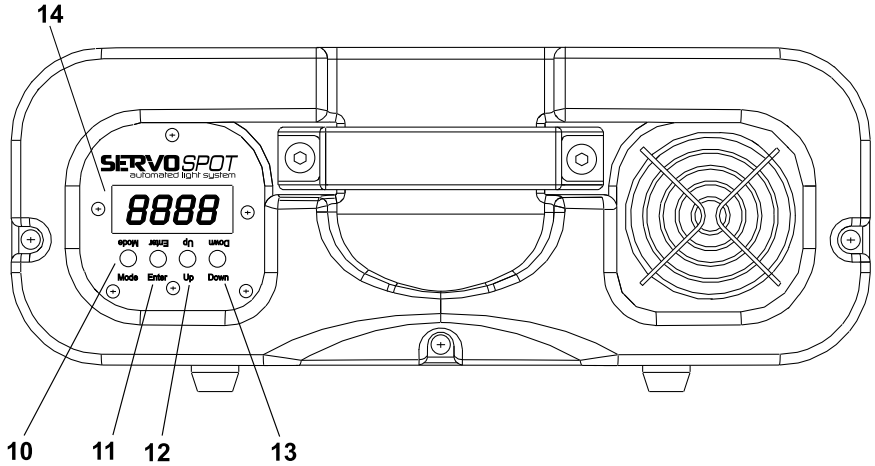
3. Description of the device



1 - Moving head
2 - Yoke
3 - Carrying handles
4 - Base



Rear panel:
5 - Power switch
6 - DMX output
7 - DMX input
8 - Power cord
9 - Fuse holder



Front panel:
10 - Mode-button
11 - Enter-button
12 - Up-button
13 - Down-button
14 - Display

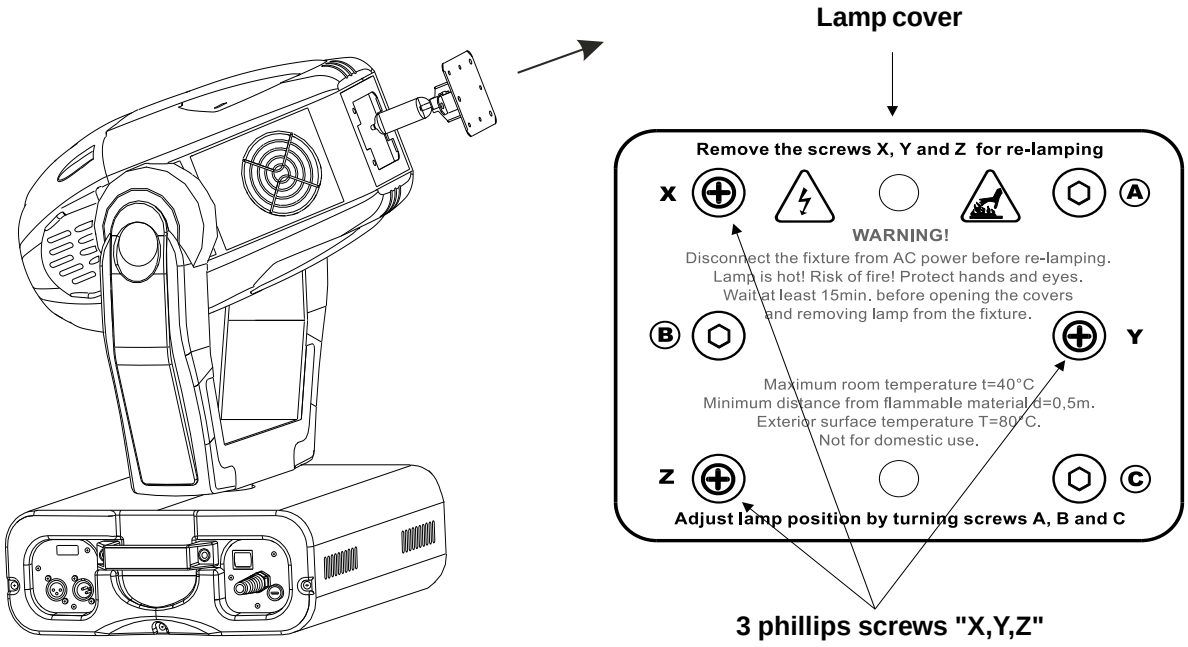
4. Installation

4.1Fitting the lamp

DANGER !
Install the lamps with the device switched off only.
Unplug from mains before !

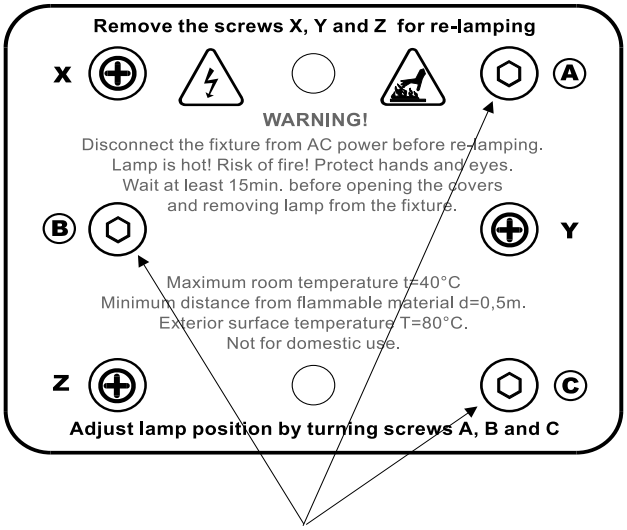
To insert the lamp OSRAM HSR 575/2 95V/575W GX-9,5 or PHILIPS MSR 575/2 95V/575W GX-9,5 , MSD 575 95V/575W GX-9,5 loosen the lamp cover at the rear of head (see the drawings) by remowing the 3 fastening screws which are marked **"X,Y,Z"**.Carefully pull out the cover with the lamp socket assembly.If changing the lamp, remove the old lamp from the socket. Insert the lamp to the socket.
Do not install a lamp with a higher wattage! A lamp like this generates temperatures the device is not designed for.Damages caused by non-observance are not subject to warranty. Please follow the lamp manufacturer‘s notes!Do not touch the glass-bulb with bare hands during the installation! Make sure that the lamp is installed tightly into the lampholder system.
Reclose the lamp cover and tighten the 3 screws.
Before striking the lamp, reset the **"LAti"** counter in the main menu of the Control Board, by pressing the **"Up"** and **"Down"** buttons in one time and then confirming with the **Enter**-button.
Adjust the lamp position by turning the screw **"A,B,C"** (see **"Lamp adjustment "** below).

Lamp assembly:



Do not operate this fixture with opened housing-cover!

4.2 Lamp adjustment:



3 adjustment screws "A,B,C"

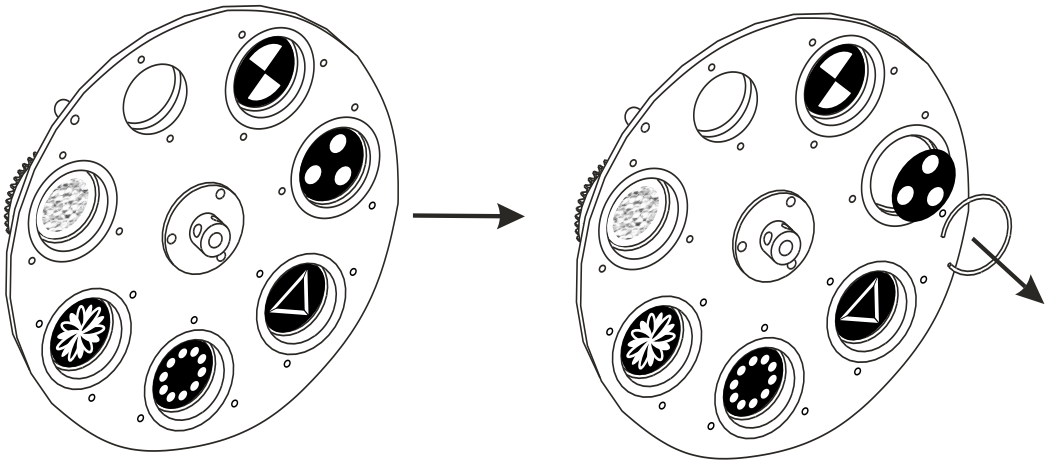
The ServoSpot 575 lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance.
Strike the lamp,open the shutter and the iris,set the dimmer intensity onto 100% and focus the light on a flat surface (wall).Center a hot-spot(the brightest part of the image) by using the 3 adjustment screws "**A,B,C**".Turn one screw after another a quarter-turn clokwise(counter-clokwise) to set the hot-spot in the center of the image.If you cannot detect the hot-spot,adjust the lamp until the light is evenly distributed.

4.3 Inserting/Exchanging rotating gobos

DANGER!
Install the gobos with the device switched off only.
Unplug from mains before!

If you wish to use other forms and patterns as the standard-gobos, or if gobos are to be exchanged, open the top cover of the head by loosening 2 screws on the top cover.
Remove the fixation ring with an appropriate tool. Remove the gobo and insert the new gobo. Press the fixation ring together and insert it in the front of the gobo.

CAUTION!
Never unscrew the screws of the rotating gobo
as the ball bearing will otherwise be opened!

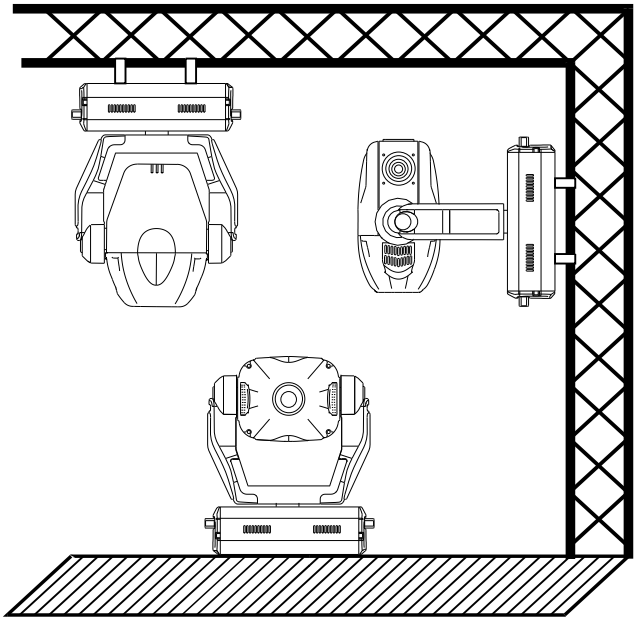


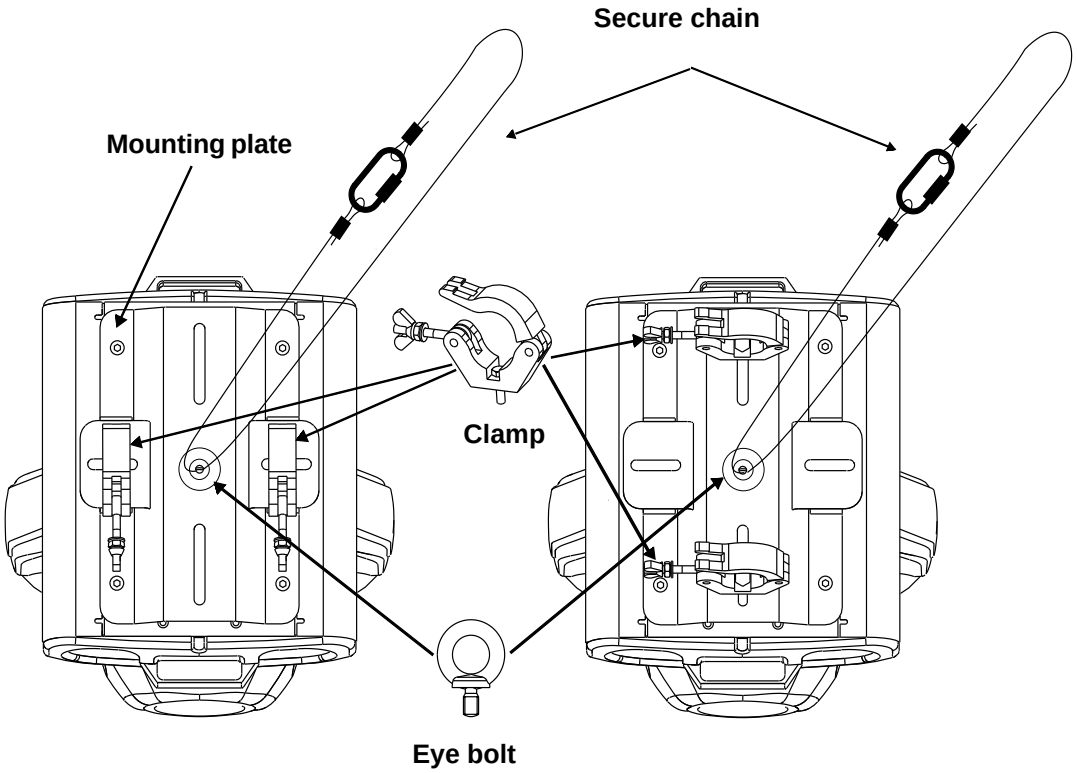
4.4 Rigging the fixture

Danger of fire !
When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in between a distance of min. 0,5 m.

Warning ! Use 2 clamps to rig the fixture on the truss.
Follow the instructions mentioned at the bottom of the base.
Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.

The ServoSpot 575 can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).
The fixture's base enables to be mounted in two ways. Use the clamps with screws M12.
Fix a mounting plate and an eye bolt (a part of delivery) on the underside of the base(see the drawing below).
Fasten a safety chain to eye bolt.The safety chain(cord) must hold at least 10 times the weight of the fixture. Never use the carrying handles for secondary attachment.





4.5 Connection to the mains

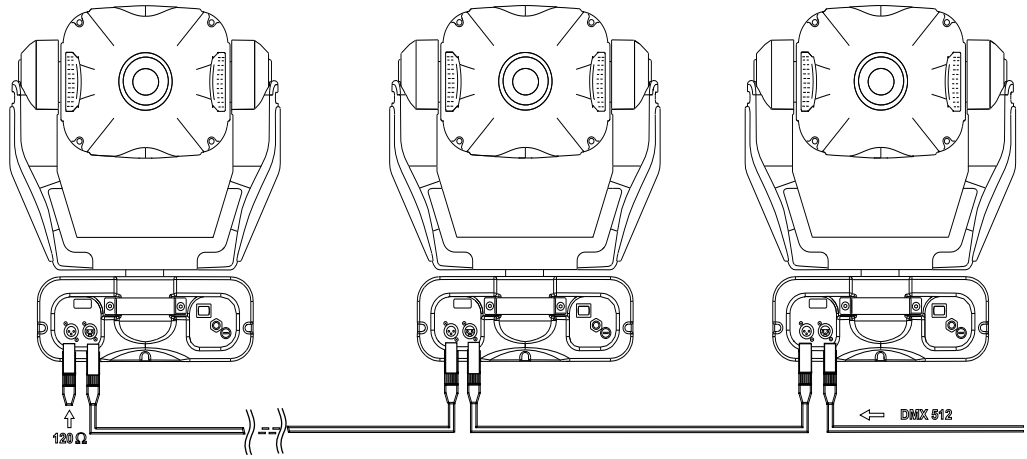
Connect the fixture to the mains with the enclosed power-plug.
The earth has to be connected!

The occupation of the connection-cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	⏚

4.6 DMX-512 connection/connection between fixtures

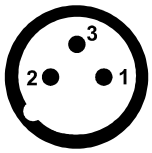
The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.



Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

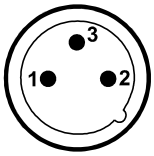
Occupation of the XLR-connection:

DMX - output
XLR mounting-socket:



1 - Ground
2 - Signal (-)
3 - Signal (+)

DMX-input
XLR mounting-plug:



1 - Ground
2 - Signal (-)
3 - Signal (+)

If you are using the standard controllers, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ohm resistor between Signal (–) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

5. DMX PROTOCOL

Channel 16 bit	Channel 8 bit	Value	Function	Type of control
1	**1**		**Pan**	
		0-255	Pan movement by 530°	proportional
2			**Pan fine**	
		0-255	Fine control of pan movement	proportional
3	**2**		**Tilt**	
		0-255	Tilt movement by 280°	proportional
4			**Tilt fine**	
		0-255	Fine control of tilt movement	proportional
5	**3**		**Speed of PAN/TILT movement**	
		0	Max. speed (tracking mode)	step
		1-249	From max. speed to min.speed (vector mode)	proportional
		250-252	Max. speed,(track.mode),black-out while color or gobo changes	step
		253-255	Max.speed (vector mode),black out while pan/tilt moving or color/gobo changes	step
6	**4**		**Lamp on/off,reset,fans speed control**	
		0-127	From max.speed of fan to min. speed of fan	proportional
		128-139	Lamp on,reset,	step
		140-229	No function	step
		230-239	Lamp off after 3 sec	step
		240-255	No function	step
7	**5**		**Colours 1**	
		0	Open/white	proportional
		13	Light blue	proportional
		26	Red	proportional
		38	Blue	proportional
		51	Light green	proportional
		64	Yellow	proportional
		77	Magenta	proportional
		90	Cyan	proportional
		102	Green	proportional
		115	Orange	proportional
		128-190	Forwards rainbow effect from fast to slow	proportional
		191-193	No rotation	step
		194-255	Backwards rainbow effect from slow to fast	proportional
		0-255	*Colour macro function (channel 8 set from 128-255)-64 different colours in following order:white, pink,magenta,red,orange,yellow,green,cyan,blue,UV*	*proportional*
8	**6**		**Colours 2**	
		0-11	White	step
		12-23	Deep red	step
		24-35	Deep blue	step
		36-47	Pink	step
		48-59	Cyan	step
		60-71	Magenta	step
		72-83	Yellow	step
		84-95	5600K correction filter	step
		96-107	3200K correction filter	step
		108-119	UV filter	step

Channel 16 bit	Channel 8 bit	Value	Function	Type of control
		120-127	White	step
		128-255	Enable macro color function on channel 7	step
9	**7**		**3-facet prism rotatin control,Prism macros**	
		0	Open position (no prism)	step
		1- 63	Forwards rotation from fast to slow	proportional
		64	No rotation	step
		65-127	Backwards rotation from slow to fast	proportional
		128-255	***Prism/gobo macros***	
		128-135	Macro 1	step
		136-143	Macro 2	step
		144-151	Macro 3	step
		152-159	Macro 4	step
		160-167	Macro 5	step
		168-175	Macro 6	step
		176-183	Macro 7	step
		184-191	Macro 8	step
		192-199	Macro 9	step
		200-207	Macro 10	step
		208-215	Macro 11	step
		216-223	Macro 12	step
		224-231	Macro 13	step
		232-239	Macro 14	step
		240-247	Macro 15	step
		248-255	Macro 16	step
10	**8**		**Static gobos**	
		0-7	Open/hole	step
		8-15	Gobo 1	step
		16-23	Gobo 2	step
		24-31	Gobo 3	step
		32-39	Gobo 4	step
		40-47	Gobo 5	step
		48-55	Gobo 6	step
		56-63	Gobo 7	step
		64-71	Gobo 8	step
		72-79	Gobo 9	step
		80-223	***Shaking gobos with variable speed***	
		80-95	Gobo 1	step
		96-111	Gobo 2	step
		112-127	Gobo 3	step
		128-143	Gobo 4	step
		144-159	Gobo 5	step
		160-175	Gobo 6	step
		176-191	Gobo 7	step
		192-207	Gobo 8	step
		208-223	Gobo 9	step
		224-255	Gobo wheel rotation from slow to fast	proportional
11	**9**		**Rotating gobos**	
		0-31	Open/hole	step
		32-63	Rot.gobo 1 (metal)	step
		64-95	Rot.gobo 2 (metal)	step
		96-127	Rot.gobo 3 (metal)	step
		128-159	Rot.gobo 4 (dichroic)	step
		160-191	Rot.gobo 5 (dichroic)	step
		192-223	Rot.gobo 6 (glass)	step
		224-255	Rot.gobo wheel cont.rotation from slow to fast	proportional

Channel 16 bit	Channel 8 bit	Value	Function	Type of control
12	**10**		**Rotating gobo index,rotating gobo rotation**	
		0-127	Gobo indexing	proportional
		128-190	Forwards gobo rotation from fast to slow	proportional
		191-192	No rotation	step
		193-255	Backwards gobo rotation from slow to fast	proportional
13	**11**		**Iris**	
		0	Open	step
		1-179	Max.diameter to min.diameter	proportional
		180-191	Closed	step
		192-223	Pulse closing from slow to fast	proportional
		224-255	Pulse opening from fast to slow	proportional
14	**12**		**Focus,multistep zoom**	
		0-85	Zoom 15°-Continuous adjustment from far to near	proportional
		86-170	Zoom 18°-Continuous adjustment from far to near	proportional
		171-225	Zoom 22°-Continuous adjustment from far to near	proportional
15	**13**		**Shutter,strobe**	
		0-31	Shutter closed	step
		32-63	No function (Shutter open)	step
		64-95	Strobe-effect from slow to fast (max.10 flashes/s)	proportional
		96-127	No function (Shutter open)	step
		128-159	Pulse-effect in sequences from slow to fast	proportional
		160-191	No function (Shutter open)	step
		192-223	Random strobe-effect from slow to fast	proportional
		224-255	No function (Shutter open)	step
16	**14**		**Dimmer intensity**	
		0-255	Gradual adjustment of the dimmer intensity from 0 to 100%	proportional

6. Addressing

The control board on the front panel of the ServoSpot 575 allows you to assign the DMX fixture address, which is defined as the first channel from which the ServoSpot 575 will respond to the controller.
If you set, for example, the address to channel 5, the ServoSpot 575 will use the channel 5 to 20 for control.
Please, be sure that you don't have any overlapping channels in order to control each ServoSpot 575 correctly and independently from any other fixture on the DMX data link.
If two, three or more ServoSpot 575 are addressed similarly, they will work similarly.

For address setting follow this procedure:

1) Switch On the ServoSpot 575 and wait until the fixture reset has finished (**"rSt"** is flashing at the display).
2) Press the **[Mode]** key in order to access the main menu. Browse through the menu by pressing the **[Up]** and **[Down]** keys until the display shows **"A001"**. Confirm by pressing **[Enter]** key and the letter **"A"** will flash.
3) Use the **[Up]** and **[Down]** keys to select the desired address.
4) Confirm by pressing **[Enter]** or **[Mode]** to cancel.

Controlling:

After having addressed all ServoSpot 575 , you may now start operating these via your lighting controller.
Note: After switching on, the ServoSpot 575 will automatically detect whether DMX 512 data is received or not. If there is no data received at the DMX-input, the display will start to flash **"A001"** with actually set address. This situation can occur if:
- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the device
- the controller is switched off or defective, if the cable or connector is defective or the signal wires are swap in the input connector.

Note: It's necessary to insert the XLR termination plug (with 120 Ohm) in the last lighting in the link in order to ensure proper transmission on the DMX data link.

7. Remotely controllable functions

7.1 Lamp

The ServoSpot 575 is run with a PHILIPS MSD 575,MSR 575/2 or OSRAM HSR 575/2 lamp.
A relay inside of the ServoSpot 575 allows you to switch On and Off the lamp via itself control board on the front panel of base or via your controller without affecting the rest of the lighting.

7.2 Switching On and Off the lamp by the control board

1. Switch On the ServoSpot 575 and wait until the fixture reset has finished.
2. Press the **[Mode]** key in order to access the main menu. Browse through the menu by pressing the **[Up]** and **[Down]** keys until the display shows **"LAMP"**. Confirm by pressing **[Enter]** key.
3. Use the **[Up]** and **[Down]** keys to select **"On"** for switch On the lamp and **"Off"** for switch Off the lamp and press **[Enter]** to confirm or **[Mode]** to cancel.

Note: It is also important to note, that the discharge lamp is cold restrike types, that means, that they have to be cold before re-striking. For this reason, you have to wait 5 minutes (max. speed of fan must be adjusted) after having switched Off the lamp before you can switch it back On again. If you try to switch On the lamp within 5 minutes after having switched it Off, the ServoSpot 575 will store this information and automatically ignite the lamp when the 5 minutes period has expired. The message **"HEAt"** will appear on the control board display of the ServoSpot 575. If the ignition of the lamp is seven times unsuccessful, on the display will appear **"LA.Er"**, meaning that the lamp could be damaged or even missed, or there could be a failure on the ignitor or ballast.

7.3 Colour wheels

The ServoSpot 575 contains two colour wheels both with 10 color positions - 9 of these with dichroic colors and the last one white. The wheel 1 can be positioned between two adjacent colors in any position. It is also possible to rotate the color wheel 1 continuously at different speeds("Rainbow effect" in both directions). Hot and cold colour temperature filters (3200K and 5600K) and UV filtr are situated on the colour wheel 2.
By color macro function it is possible to obtain 64 different colours in following order: white, pink, magenta, red, orange, yellow, green, cyan, blue, UV

7.4 Static gobo wheel

The wheel has 9 metal gobos plus an open position.Adjustable gobo wheel rotation from slow to fast,gobo-shake function.

7.5 Rotating gobo wheel

The rotating gobo wheel includes 3 metal gobos, 1 glass gobo and 2 dichroic gobos rotating in both directions, indexable, rotating gobo wheel continuousli rotation from slow to fast. The rotating gobos can be interchanged.

7.6 3-facet rotating prism

The 3-facet prism rotating in both directions at different speeds,16 prism-gobo macros

7.7 Iris

Motorized adjustable iris,variable pulse effects.

7.8 Focus-multistep zoom

Motorized focus enables the beam to be focused anywhere on stage at different beam angles: 15°,18°,22°,provided by the special multistep zoom.

7.9 Dimmer/Shutter/Strobe

Smooth 0 - 100 % dimming is provided by the combined mechanical dimmer/shutter unit. This unit may also be used for strobe effect (1 - 10 flashes per second)

7.10 Fan

The ServoSpot 575 is cooled by three axial fans - two in the projector head and one in the base. The speed of the fan (and of course the noise) can be continuously reduced if very quiet performance is required.
By the Control Board using the **"FAnS"** function you can choose 5 types of low fan speed operating:

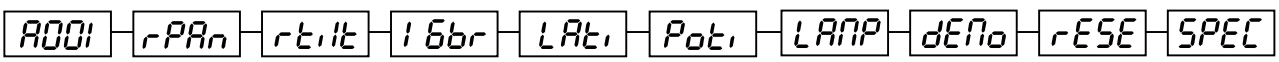
1. "HIGH" - high (max.) speed of fans
The cooling fans work on max. speed (max. cooling)
2. "rEG" - continuous controlling of the fan speed
the fan automatically raises its speed in order to control inside temperature of the lighting, if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level.
3. "LoOF" - low speed/Switch Off the lamp operating
the fan keeps the adjusted low speed until the temperature exceeds max. inside temp. Then the ServoSpot 575 automatically switch Off the lamp.
4. "LoHI" - low/high speed of the fan operating
the fan keeps the adjusted low speed until the temperature exceeds max. inside temp. of the fixture, then the ServoSpot 575 automatically switch from low to high the fan speed.
5."Auto" - continuous controlling of the fan speed without the DMX value.
This mode is similar to "reG", but the initial level of the fan speed can´t be adjusted by the DMX.

8. Control Board

The control board situated on the front panel of the ServoSpot 575 offers several features. You can simply set the lighting address, read the number of lamp or unit hours, switch On and Off the lamp, run test show, make a reset and also use special functions for manual, demo and service purposes.

8.1 Main functions

The main menu is accessed by pressing the **[Mode]** key - press this one so many times until the display shows message **"A001"** (with actually stored address). Browse through the menu by the pressing **[Up]** and **[Down]** keys - the display shows step by step these messages: **A001, rPAn, rTilt, 16br, Lati, Poti, LAMP, dEMo, rESE, SPEC**. Press **[Enter]** if you wish to select one of them. The functions are described in the following sections and the function hierarchy is shown below.



DMX 512 Address settings

The letter **"A"** flashes. Use the **[Up]** and **[down]** keys to select required address (001 - 497) and press **[Enter]** to confirm or **[Mode]** to cancel and return to the main menu.

Pan reverse

This function allows you to invert the pan movement. Use the **[Up]** and **[Down]** keys to select **"On"** if you wish this feature or **"Off"** if you don't wish this feature and press **[Enter]** to confirm or **[Mode]** to cancel and return to the main menu.

Tilt reverse

This function allows you to invert the tilt movement. Use the **[Up]** and **[Down]** keys to select **"On"** if you wish this feature or **"Off"** if you don't wish this feature and press **[Enter]** to confirm or **[Mode]** to cancel and return to the main menu.

Movement resolution

By this function you can adjust the desired movement resolution 8 or 16 bit. Use the **[Up]** and **[Down]** keys to select **"On"** if you wish the 16 bit high resolution or **"Off"** if you wish only 8 bit resolution and press **[Enter]** to confirm or **[Mode]** to cancel and return to the main menu.

Note: If you adjust the 16 bit resolution , the fixture will occupy 16 DMX channels, if you adjust the 8 bit resolution, the fixture will be operated by only 14 DMX channels. Please, check the DMX protocol.

Lamp On time

This option enables you to read the total number of hours that the lamp has been powered On. Press **[Enter]** or **[Mode]** to return to the main menu. In order to reset the counter to 0, you have to hold the **[Up]** and **[Down]**-button and press the **[Enter]**-button.

Power On time

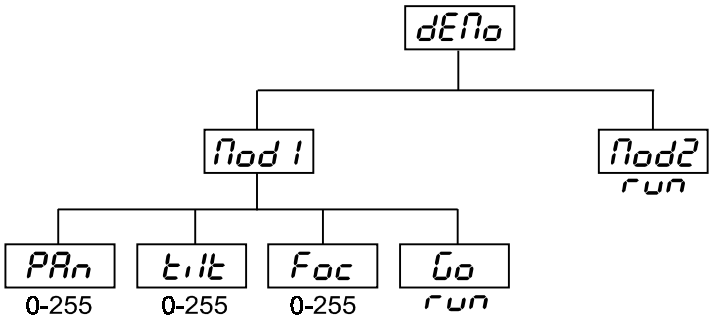
By this option you can read the total number of hours that the ServoSpot 575 has been powered On. Press **[Enter]** or **[Mode]** to return to the main menu.

Switch On/Off the lamp

Use the **[Up]** and **[Down]** keys to select **"On"** if you wish the switch On the lamp or **"Off"** if you wish switch Off the lamp and press **[Enter]** to confirm or **[Mode]** to cancel and return to the main menu.

Demo sequences

This function allows you to run a special demo-test sequences without an external controller, which will show you some possibilities of using ServoSpot 575. Press **[Up]** and **[Down]** keys to select the **"Mod1"** or **"Mod2"** sequences. The **"Mod1"** is suitable for projections on the wall, ceiling or ground without any head-movement, the **"Mod2"** uses all ServoSpot 575 functions and therefore is good for a complete introduction of the fixture.

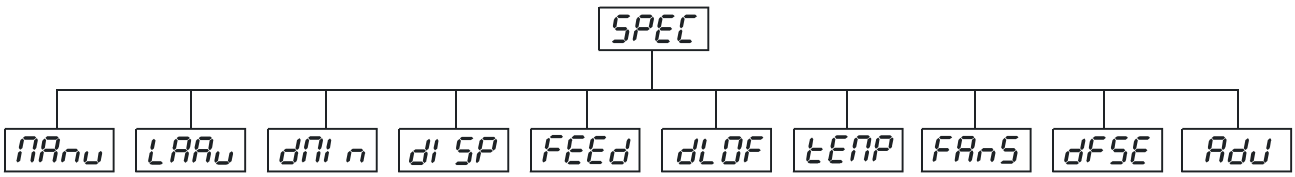


Reset Function

Press **[Enter]** key to run reset. This option enables the ServoSpot 575 to index all effects (functions) and return to their standard positions.

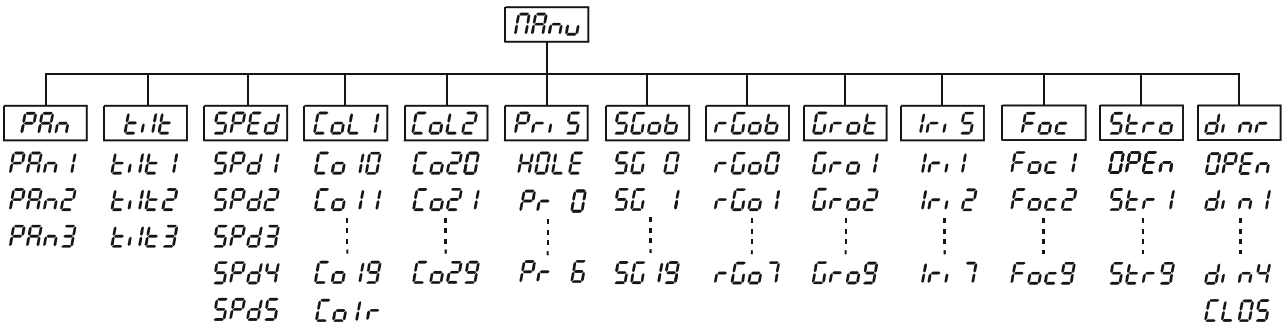
8.2 SPEC - Special functions

Use the **[Up]** and **[Down]** keys to browse through the special functions and select the one by pressing **[Enter].**



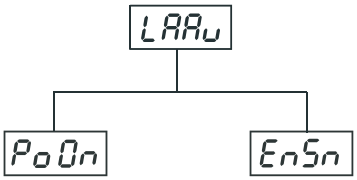
Manual control of effects

This function allows you to control manually the channel functions of the fixture. Use the **[Up]** and **[Down]** keys to select desired function and press **[Enter]** to adjust the effect or **[Mode]** to cancel and return to the menu.



Lamp On automatically

This menu allows you to turn the lamp On after switching the fixture On and switch On/Off the lamp light sensor.



Lamp On after switching the fixture On

This function enables to turn the lamp On automatically after switching the fixture On. Use the **[Up]** and **[Down]** keys to select **"On"** if you wish to turn the lamp On automatically after switching the fixture On or **"Off"** if you wish the lamp Off after switching On the fixture and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

Switch On/Off the lamp light sensor

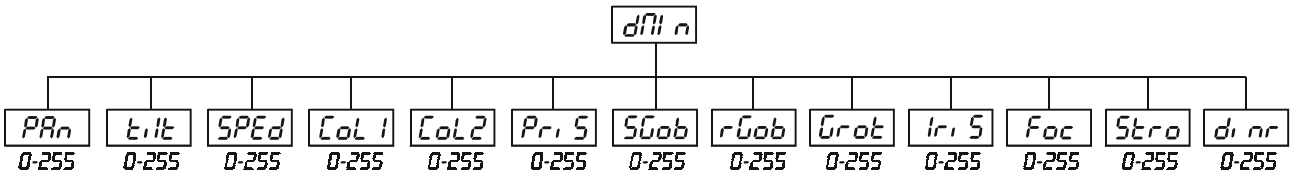
Use the **[Up]** and **[Down]** keys to select **"On"** if you wish to switch the lamp light sensor On and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.**The option"On" is for the standard operation.**

Use the **[Up]** and **[Down]** keys to select **"Off"** if you wish to switch the lamp light sensor Off and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

Important: The option"Off" is for "emergency operation" only if the lamp light sensor is defective and you will wait for a delivery of the spare light sensor! If the lamp light sensor was switched Off,the error messages "**LAEr,SnEr,HEAt**" will not appear on the display (only the message "HEAt" will appear if the lamp was turned Off and On within 5 minutes) and at switching On of the lamp the electronics will still try to ignite the lamp until it shines (even when the lamp is damaged or absent), on this account some electronics parts could be damaged!

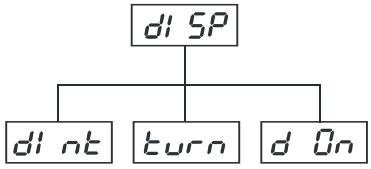
DMX values

Readout DMX values of each channel received by the fixture. Use the **[Up]** and **[Down]** keys to select desired channel and press **[Enter]** to read its value coming to the fixture or **[Mode]** to cancel and return to the menu.



Display adjusting

This function allows you to adjust the display settings:



Display intensity

By this function you can adjust from 20% to 100% the display intensity . Use the **[Up]** and **[Down]** keys to select the level of the display intensity and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

Display-reverse

With this function, you can rotate the display by 180°. Use the **[Up]** and **[Down]** keys to selec**t "normal display"** or "**display turned by 180**°" and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

Display- On

This function allows you to keep the display On or to turn Off automatically 2 minutes after last pressing any key on the control board. Use the **[Up]** and **[Down]** keys to select **"On"** if you wish to keep the display On or **"Off"** if you wish to turn Off automatically 2 minutes after last pressing any key on the control board and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

PAN/TILT feedback

This function allows to return the mowing head to the required position after changing the position by external force (e.g.by stroke). Use the **[Up]** and **[Down]** keys to select **"On"** if you wish to anable this function or **"Off"** if you wish not to return the mowing head to the required position and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.
Note: If the feedback was switched Off , the pan/tilt position is changed by external force and the feedbeck is switched On again, the moving head might not to be synchronized with the DMX signal.You have to make a reset in order to synchronize the moving head with the DMX signal.

Lamp Off via DMX

This function allows you to switch Off the lamp by DMX. Use the **[Up]** and **[Down]** keys to select **"On"** if you want to switch Off the lamp by DMX or **"Off"** if you don't want to switch Off the lamp by DMX and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

Temperature

Temperature readouts of the fixture inside in Celsius. Inside temperatures below 80° C are not critical. 80° C and more lead to the lamp being switched off. Please note that the outside temperature should not exceed 40° C.

Low fan speed operating

By using this function you can choose 5 types of low fan speed operating. Browse through this menu by the pressing **[Up]** and **[Down]** keys - the display shows step by step these messages: **"Auto,HIGH, reG, LoOF, LoHI"**. Press **[Enter]** if you wish to select one of them or **[Mode]** to cancel and return to the menu.

high (max.) speed of fans

The cooling fans work on max. speed (max. cooling)

continuous controlling of the fan speed

the fan automatically raises its speed in order to control inside temperature of the lighting, if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level.

low speed/Switch Off the lamp operating

the fan keeps the adjusted low speed until the temperature exceeds max. inside temperature of the fixture, then the ServoSpot 575 automatically switch Off the lamp.

low/high speed of the fan operating

the fan keeps the adjusted low speed until the temperature exceeds max. inside temperature of the fixture, then the ServoSpot 575 automatically switch from low to high the fan speed.

continuous controlling of the fan speed without the DMX value

This mode is similar to "reG", but the initial level of fan speed can´t be adjusted by the DMX.

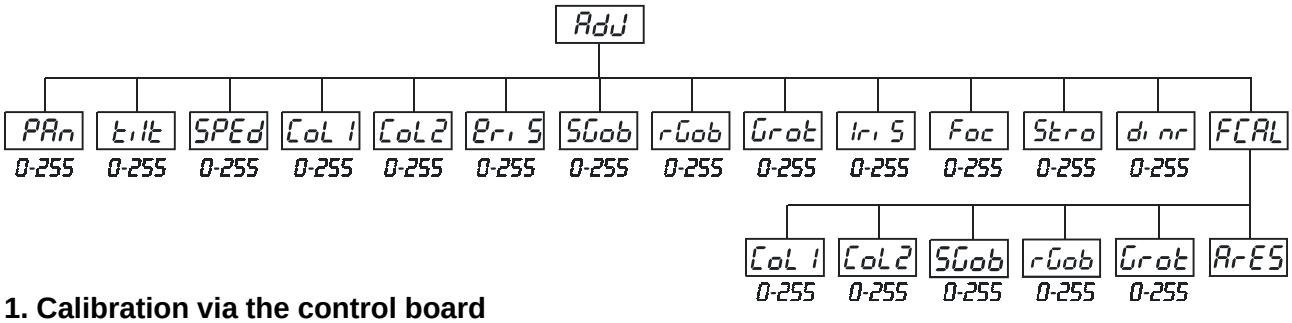
Default settings

Press **[Enter]** to reset all fixture personalities (not the adjusting functions) to the default values. On the display will appear **"rSt"** meaning that the fixture makes the reset. See the table of personality setting and their default positions.

Personality	**Display**	**Default values** (SHADED)
Pan reverse	rPAn	On OFF
Tilt reverse	rtiLt	On OFF
Movement resolution	16br	On OFF
Lamp On after switch. the fixture On	PoOn	On OFF
Switch On/Off the lamp light sensor	EnSn	On OFF
Display-On	d On	On OFF
Display intensity	d Int	20 40 60 80 100
Display- reverse	turn	turn usng
PAN/TILT feedback	FEEd	On OFF
Lamp Off via DMX	dLOF	On OFF
Low fan speed operating	FAnS	Auto HIGH rEG LoOF LoHI

Adjusting the default positions of colour, gobo and effect wheels

By this function you can calibrate and adjust the colour and gobo wheels to their standard/right positions. Use the **[Up]** and **[Down]** keys to browse through the adjusting menu - the display shows step by step these messages: **"PAn, Tilt, SPEd, Col1, Col2, PriS, SGob, rGob, Grot, IriS, Foc, Stro, dimr, FCAL"** by which you can adjust the fixture to the required/desired position (0-255) before the function calibration. Then when the positioning is finished use the last **"FCAL"** function (Fixture calibration).



1. Calibration via the control board

Press **[Enter]** and the **[Up]** and **[Down]** keys in order to display the following messages: **"Col1, Col2, SGob, rGob,Grot"** for very smooth function calibration. Select one of them, press **[Enter]** and use the **[Up]** and **[Down]** keys in order to adjust their right value from 0 to 255. Then press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu. This can be repeated for each calibration parameter if it is required. When the calibration is finished, it is necessary to use the **"ArES"** function in order to write the calibration values to the memory (EPROM) and to make a reset in order to check the newly adjusted positions of the colour and gobo wheels. When the reset of the fixture is finished, the display will show the **"FCAL"** message. Press **[Enter]** to repeat the calibration or **[Mode]** to return to the **"AdJ"** menu.

2. Calibration via the external controller

Press **[Enter]** and the **[Up]** and **[Down]** keys in order to display the following messages: **"Col1,Col2,SGob, rGob, Grot"** - calibration parameters. Select one of them and press **[Enter]**.
Now you can calibrate the colour 1,colour 2, static gobo and rotating gobo wheels by your controller. The DMX calibration protocol is described in the table.

DMX Calibration protocol:

DMX chanel	Function		
1	Colour 1	Smooth microstep movement	Calibration 0-255
2	Colour 2		Calibration 0-255
3	Static gobo		Calibration 0-255
4	Rotating gobo		Calibration 0-255
5	Gobo rotating		Calibration 0-255
6	No function		
7	Colours 1	Standard protocol	
8	Colours 2	Standard protocol	
9	Prism	Standard protocol	
10	Static gobos	Standard protocol	
11	Rotating gobos	Standard protocol	
12	Gobo rotation	Standard protocol	
13	Iris	Standard protocol	
14	Focus	Standard protocol	
15	Strobe	Standard protocol	
16	Dimmer	Standard protocol	

After having calibrated required functions press **[Enter]** to confirm (or **[Mode]** to cancel and return to the menu without reset by the **"ArES"** function) and use the **"ArES"** function in order to write the calibration values to the memory (EEPROM) and to make a reset in order to check the new adjusted positions of the colour 1, colour 2,static gobo and rot.gobo wheel and gobo indexing.

9. Error and information messages

HEAt

This message appears if you try to switch on the lamp within 5 minutes after having switched it off (the lamp is too hot). The message will appear on the display if the lamp doesn't ignite within 28 seconds. The ServoSpot 575 will store this information and automatically ignite the lamp when the 5 minutes period has expired.

Caution: The message is disabled if the lamp light sensor (function "EnSn") is switched Off (only if the lamp was turned Off and On within 5 minutes,the message "HEAt" will appear).

LAEr

The ignition of the lamp is seven times unsuccessful (the HEAt message appeared six times before), and the display shows **"*LAEr*"**, meaning that the lamp could be damaged or even missed, the fixture is overheating (this can occur if the ambient temperature is 40° C or more) or there could be a failure on the ignitor or ballast. Please place or replace the lamp, check the ambient temperature or contact your dealer if the situation was not caused by the lamp.

Caution: The message is disabled if the lamp light sensor (function "EnSn") is switched Off.

FAn

The message informs you that the fixture was overheating and the lamp was switched off. This message will appear on the display if the fan speed operating "LOOF" is selected.

MbEr

This messsage informs you that the main PCB does not communicate correctly with the Control Board.

CIEr (color-wheel 1 error)

This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The color-wheel is not located in the default position after the reset.

C2Er (color-wheel 2 error)

This messsage will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The color-wheel is not located in the default position after the reset.

rGEr (rotating gobo-wheel error)

This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The rotating gobo-wheel is not located in the default position after the reset.

IGEr (rotating gobo indexing error)

This message will appear after the reset of the fixture and if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The rotating gobo is not located in the default position after the reset.

SGEr (static gobo-wheel error)

This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The static gobo-wheel is not located in the default position after the reset.

PrEr (prism error)

This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The prism-wheel is not located in the default position after the reset.

FtEr

The message informs you that the fixture was overheating (occured if the ambient temperature is 40° C or more) and that the relay switched off the lamp. This message will appear on the display until the temperature will be on a suitable level, then the display will show the HEAt message meaning the lamp is too hot.

SnEr

This message appears if the lamp lighting sensor is failed. Please, contact your dealer.
Caution: The message is disabled if the lamp light sensor (function "EnSn") is switched Off.

PoEr

This message will appear if the fixture was shortly disconnect from the main.

PAEr (PAN-yoke movement error)

This message will appear after the reset of the fixture if the yoke's magnetic-indexing circuits malfunction (sensors failed or magnet missing) or the stepping motor is defective. (Or its driving IC on the main PCB). The yoke is not located in the default position after the reset.

tiEr (TILT-head movement error)

This message will appear after the reset of the fixture if the head's magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping motor is defective. (Or its driving IC on the main PCB). The head is not located in the default position after the reset.

FrEr

It will appear if the frequency of the mains is not standard 50 or 60Hz.

10. Technical specifications

Power supply:

EU-model:.....208/230/240V AC, 50/60Hz ~
Fuse:.....T 5.0A@ 230V
US-model:.....100/115/208/230V AC, 50/60Hz ~
Fuse:.....T 10A@115V
Power consumption:.....900 VA

Lamp:

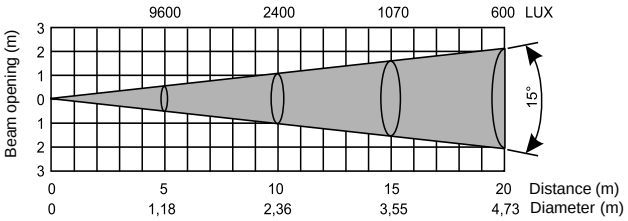
-OSRAM HSR 575/2 95V/575W GX-9,5 750h ; PHILIPS MSR 575/2 95V/575W GX-9,5 750h or MSD 575 95V/575W GX-9,5 2000h

Optical System:

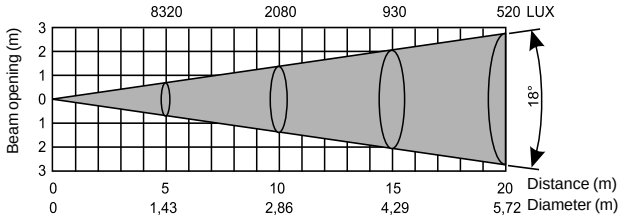
- High luminous-efficiency parabolic reflector, focus lens and multistep zoom lenses system(15°,18°,22° beam angles)
- All lenses are anti-reflection coated

Beampath:

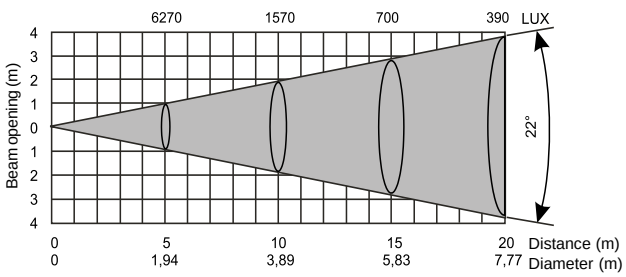
Beam angle 15°



Beam angle 18°



Beam angle 22°



Colours:

Colour wheel 1:

- 9 dichroic colour-filters plus white,colour-wheel with variable rotation speed in both directions

Colour wheel 2:

- 6 dichroic-colour filters,colour temperature filters 3200 K and 5600 K,UV filter plus white

Static gobos:

- 9 static metal-gobos plus an open position
- static gobo wheel cont. rotation

Rotating gobos:

- 6 interchanged gobos plus an open position:3 metal gobos, 1 glass gobo and 2 dichroic gobos rotating in both directions at different speeds
- Gobo indexing
- Rotating gobo-wheel cont. rotation
- Outside diameter 27 mm, image diameter 23 mm.

Strobe:

- Strobe effect with variable speed (1 - 10 flashes per second)

Dimmer:

- Smooth dimmer from 0 - 100 %

Prism:

- 3-facet-prism rotating in both directions at different speeds

Focus:

- Remotely controllable via DMX
- Motorized multi-step-zoom with three different apertures (15°,18°,22°)

Iris:

- Motorized (steplessly adjustable) iris for different beam diameters

Effects:

- 16 prism-gobo macros
- 9 static shacking gobos with variable speed
- preprogrammed variable iris pulse effects

Motors:

- 16 high quality stepping-motors controlled by microprocessors

Electronics:

-Addressing,special functions setting,effects calibration via control panel with 4-digit LED display
-Readout fixture and lamp usage,receiving DMX values,temperature, etc
-Built-in analyzer for easy fault finding,error messages
-Remotely switching of the lamp
-Bilt-in demo sequences
-Black-out while head moving or gobo/color changing
-Silent fans cooling,remotely controllable speed of fans
-Self-resetable thermo-fuse
-Digital serial input DMX-512
-16 control-channels (full 16 bit protocol):

Channel 1: Horizontal head-movement 8 bit
Channel 2: Fine Horizontal head-movement 16 bit
Channel 3: Vertical head-movement 8 bit
Channel 4: Fine Vertical head-movement 16 bit
Channel 5: Pan/Tilt speed
Channel 6: Fan speed, On/Off lamp, reset
Channel 7: Colours 1
Channel 8: Colours 2
Channel 9: Prism rotation control,Prism/Gobo macros
Channel 10: Static gobos

Channel 11: Rotating gobos
Channel 12: Gobo rotation, gobo indexing
Channel 13: Iris
Channel 14: Focus,multistep zoom
Channel 15: Shutter, strobe
Channel 16: Dimmer

Pan/Tilt:

-Pan movement range 530°
-Tilt movement range 280°
-8/16 bit movement resolution
-Automatic Pan / Tilt position correction
-Maximum PAN-movement 530° in 2.65 s
-Maximum TILT-movement 280° in 1.68 s

Rigging:

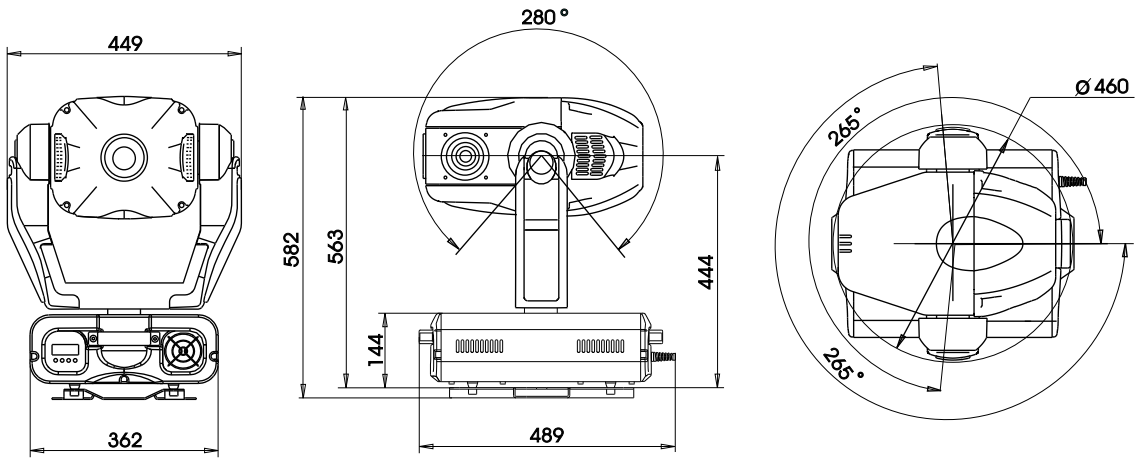
-Stands directly on the floor
-Mounts horizontally or vertically with 2 clamps
-2 truss orientation
-Safety chain/cord attachment bolt

Temperatures:

-Maximum ambient temperature t_a: 40° C
-Maximum housing temperature t_B (steady state): 80° C

Dimensions and weight:

-Length of base (including handles):	467 mm
-Width of yoke:	449 mm
-Height (head horizontal):	582 mm
-Weight (net):	33 kg
-Shipping weight:	38 kg



11. Maintenance and cleaning

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not build up on or within the fixture. Otherwise, the fixture‘s light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the fixture to function reliably throughout its life.
A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

DANGER !
Disconnect from the mains before starting any maintenance work

The objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.
The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.
The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.
To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating.
Before replacing the fuse, unplug mains lead.

Procedure:

1) Unscrew the fuseholder on the rear panel with a fitting screwdriver from the housing (anti-clockwise).
2) Remove the old fuse from the fuseholder.
3) Install the new fuse in the fuseholder.
4) Replace the fuseholder in the housing and fix it.

12. Appendix

We believe you will enjoy your ServoSpot 575. We assure you will enjoy this product for years if you follow the instructions given in this manual.
If you have any questions and comments, please do not hesitate to contact us.

Please note: errors and omissions for every information given in this manual excepted. Every information is subject to change without prior notice. Any claim due to missing or wrong information in this manual is herewith excluded!