



# SCANNER SC-57/R



**User's manual  
product code: 991246**

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# SCANNER SC-57/R

# INTRODUCTION



We thank you for choosing the SC-57/R.

Characterized by an attracting design and an incredible optic system, the SC-57/R is suitable for any kind of ambient.

A modern and reliable electric circuit gives stability and functioning safety for long time.

To make the most of this unit and to make it work correctly in the years, before connecting it to its source and using it, we suggest you to carefully read this manual.

In this way you could be more familiar with its commands and connections so to easily use it.

All the sections of this manual have been studied to make as easy and complete as possible the use of the SC-57/R.

To make the manual more clear and easy to consult, we have used the following symbols and conventions:



## IMPORTANT

very important warnings, to be read with the maximum attention;



important parts of the text that give details and/or explanations on the use of the SC-57/R.



practical advices for an efficient use of the SC-57/R.

**The safety of the unit is guaranteed only strictly following the instructions, so it is recommended to accurately preserve them.**

# SAFETY PRECAUTIONS



## IMPORTANT

**READ ALL CAUTIONS AND WARNINGS PRIOR TO OPERATE THIS EQUIPMENT.  
INSTRUCTIONS TO PREVENT INJURIES OR DAMAGES DUE TO FIRE, ELECTRIC SHOCKS, MECHANICAL  
HAZARDS AND UV RADIATIONS HAZARDS.**

### •PROTECTION AGAINST FIRE

1) This unit has been made to work only with the Lamp: **HMI 575W GS (OSRAM)**.

**! ABSOLUTELY NEVER USE OTHER KIND OF LAMPS.**

- 2) Keep a minimum distance of 0,3 mt. from walls or any inflammable surface.
- 3) Keep a minimum distance of 1 mt. from lighted objects.
- 4) Replace the fuses with others of the same kind and value (5x20 250V 5A).
- 5) Do not install the projector close to heat sources. Do not lay the connection cables on the projector when it is hot.

### •PROTECTION AGAINST ELECTRIC SHOCKS

- 1) This projector must be earthed.
- 2) Class I equipment. The protection conductor must be part of the power supply cable.
- 3) For the connection to the main power supply proceed as in fig. 2/a, page 6.
- 4) Disconnect the power supply before the Lamp replacement or before opening the unit.
- 5) Do not install the projector outdoors, exposed to rain or moisture.

### •PROTECTION AGAINST MECHANICAL HAZARDS

- 1) When installing the projector use a safety chain.
- 2) To avoid explosion risks, open the projector only after 5 minutes after the lamp is off.
- 3) The temperature of the projector can reach high levels. Wait for almost 5 minutes before operating on it.
- 4) Replace the Lamp if it is damaged or deformed by the heat.

### •PROTECTION AGAINST UV RADIATIONS HAZARDS

- 1) Do not start on the projector without the protecting screen or if the lenses and the ultra-violet filters are damaged.
- 2) The protecting screens, the lenses and the ultra-violet filters must be replaced if visibly damaged and if their efficiency has been reduced, for example by slits or deep cuts.
- 3) Do not directly look at the Lamp when it is on.

### •WARNINGS

- 1) Do not dismantle and modify the unit.
- 2) To avoid any inflammable liquids, water or metal objects entering the unit.

**YOUR REFERENCE**

Cite the model and the serial number anytime you contact your retailer to ask for information or assistance.

**STANDARD PACKAGE**

The standard package of the SC-57/R contains:

- 1) Projector
- 2) Mains connector
- 3) DMX XLR5 (pc. 2) signal connectors
- 4) User's manual
- 5) Guarantee

- ON REQUEST:**
- \* Lamp (code 060256)
  - \* Black clamp Ø50 (code 194019)

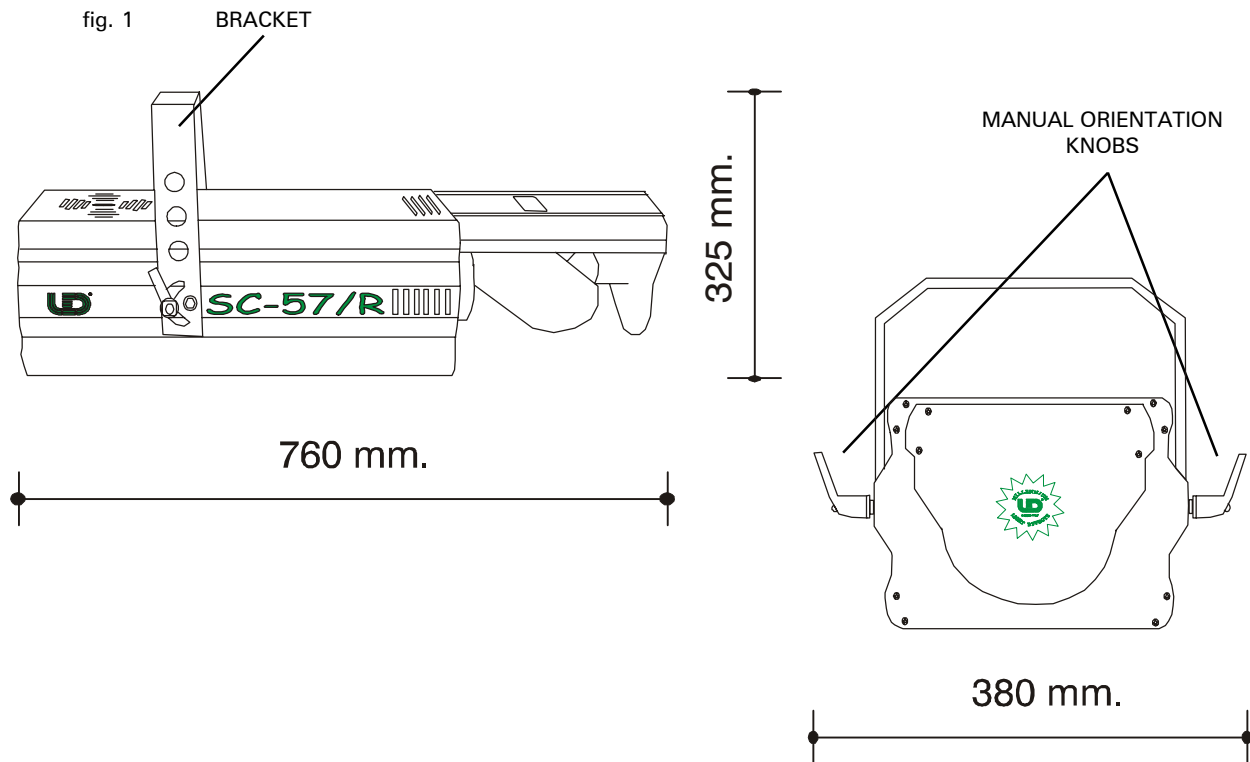


**IMPORTANT**

**Make sure that the unit has not been damaged during the transportation.  
 In case it has happened or in case the unit does not work correctly, immediately contact the Retailer.  
 If the unit has been directly sent to you , immediately contact the Freight Company.  
 Only the final receiver (the person or the Company that receive the unit) is in the position to  
 complain for the above inconveniences.**

**TECHNICAL FEATURES**

<b>LAMP</b>	Discharge lamp HMI 575W GS (OSRAM) Colour temperature: 5.600° K Average lamp life: 750 hours
<b>MOVEMENT</b>	6 Stepper motors + 1 dc.: 180° PAN, 40° TILT. Thanks to a sophisticated system of micro-steps of the stepper motors, the horizontal and vertical movements of the mirror are extremely linear and accurate in both fast and slow movements.
<b>VERTICAL MOVEMENT</b>	+50°/- 50° Manual orientation.
<b>COLOURS</b>	7 COLOURS (all interchangeable) + WHITE (fig. 3/a, page 7). It is possible to regulate the rotation speed of the colour wheel (rainbow effect).
<b>GOBOS</b>	5 ROTATING GOBOS (all interchangeable) + WHITE (fig. 3/a, page 7). It is possible to regulate the rotation speed of the gobo wheel (rainbow effect).
<b>STROBO/BLACKOUT</b>	BLACKOUT effect; STROBO effect with an adjustable frequency. (min. 1 flash/sec., max. 12 flash/sec.).
<b>ROTATING PRISM</b>	Rotating three-faces Prism. Adjustable rotation speed.
<b>LIGHT BEAM AMPLITUDE</b>	Diam. 1,4 mt. (14°), with the projector at 6 mt. of distance.
<b>INPUT POWER</b>	<ul style="list-style-type: none"> <li>• Nominal operating voltage: 230 Vac; 50 Hz.</li> <li>• Rated power supply: 650 W.</li> <li>• Nominal current: 5 A (230 Vac).</li> </ul>
<b>WORKING POSITION</b>	Any position.
<b>DIMENSIONS (W x D x H)</b>	mm. 380 x 760 x 325 (Fig. 1, page 5).
<b>WEIGHT</b>	Kg. 22
<b>BODY</b>	Steel and aluminium.



## ASSEMBLING

- ! Before installing the SC-57/R, make sure that the carrying structure is safe and able to support the weight of the unit.

The SC-57/R is equipped with a bracket with three holes (diam. 10 mm.) to fix clamps and/or screw bolts (fig. 1).

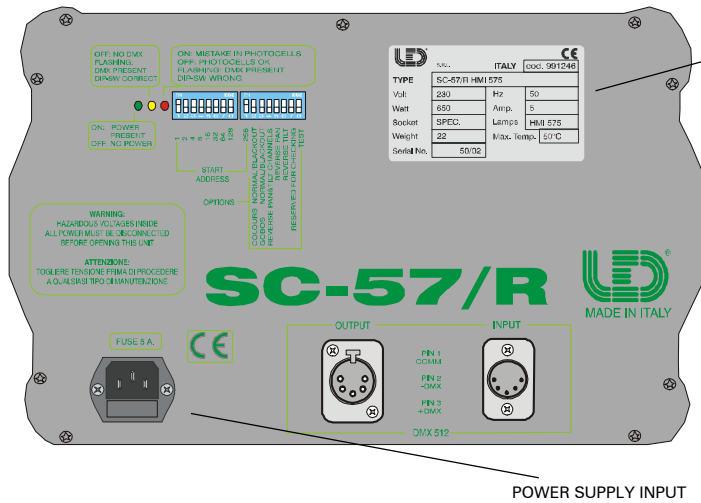
To orientate the unit, follow these instructions:



- 1) Unscrew the knobs placed at the both sides of the unit (fig. 1);
- 2) Orientate the unit in the preferred position;
- 3) Screw the above said knobs.

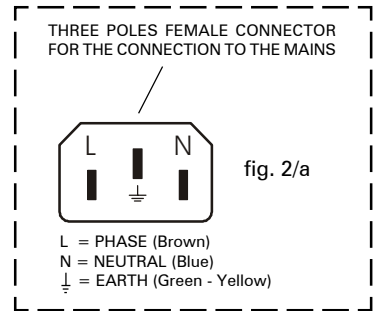
- ! Once finished make sure that the unit is correctly fixed and stable.
- ! Always make sure that you are using a safety chain.
- ! Do not install the unit outdoor directly exposed to rain or moisture.
- ! To avoid installing the projector close to heat sources.
- ! The unit must be at a minimum distance of 30 cm. from the walls or from any inflammable material and 1 mt. from lighted objects.
- ! The unit must be placed where it could be easily aerated. To avoid obstructing the in/out air gratings.

# CONNECTION TO THE POWER SUPPLY

fig. 2



 S.R.L. <b>ITALY</b> cod. 991246 			
<b>TYPE</b>	SC-57/R HMI 575		
Volt	230	Hz	50
Watt	650	Amp.	5
Socket	SPEC.	Lamps	HMI 575
Weight	22	Max. Temp.	50°C
Serial No.	50/02		



## BEFORE USING THE PROJECTOR



### IMPORTANT

The unit must be connected to the earth. The inobservance of these instructions automatically makes the guarantee expiring.



Carefully read the precautions on page 3 before installing the projector.

In particular read the following points:

- 1) Disconnect the power supply before replacing the lamp or doing any maintenance job.
- 2) Do not open the projector if are not passed at least 5 minutes after it went off.
- 3) Always wear protective gloves and goggles to replace the lamp or to work inside the projector.
- 4) The protecting screens, the lenses and the ultra-violet filters must be replaced if visibly damaged. Slits or deep cuts remarkably reduce their efficiency.
- 5) To avoid any bad performance of the projector or that the lamp breakage could damage its optic, replace the lamp as soon as it reaches its average life time (750 hrs).
- 6) Periodically clean the in/out air grates.
- 7) In case the projector must be held on a structure (truss), make sure that it is well and safely fixed, even using a safety chain from the projector to the structure.
- 8) Do not install the projector outdoors, directly exposed to rain and moisture.
- 9) Before connecting the projector to the main power supply, make sure that the working voltage and frequency correspond to the values indicated on the label (fig. 2).  
 The SC-57/R is supplied to work at a working voltage of 230V 50Hz (60Hz on request); 5A.  
 For being supplied with a voltage of 100-120V it is absolutely necessary an auto-transformer with the following characteristics:
  - Output voltage 230V.
  - Output current 6A.
- 10) The connection of the projector to the mains is described in fig. 2/a:
  - 10 a) Do not install the projector close to heat sources. Do not lay the connection cables on the projector when it is hot.
  - 10 b) The unit must be placed where it could be easily aerated. To avoid obstructing the in/out air gratings.
  - 10 c) The projector must be distanced almost 0,3 mt. from walls or any inflammable surface and almost 1mt. from lighted objects.

## MOUNTING AND REPLACING THE LAMP



### IMPORTANT

**In case of replacement of the Lamp or maintenance, never open the unit unless are passed at least 5 minutes after it went off.**

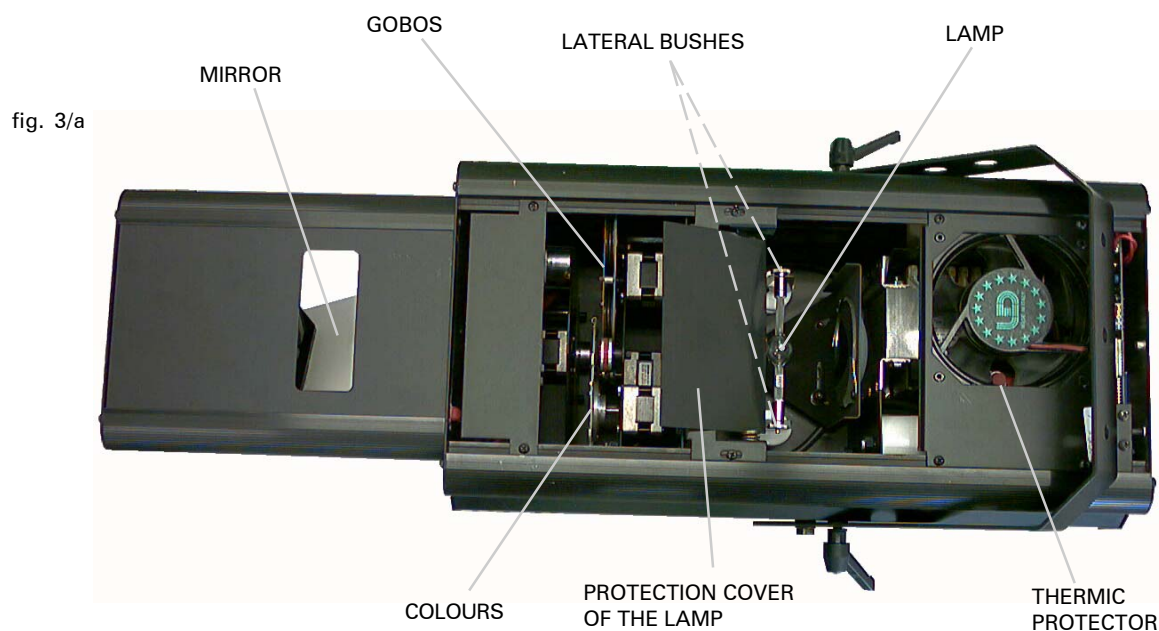
- 1) Disconnect the projector before replacing the lamp. Wear protective gloves and goggles.
- 2) Unscrew the locking bolt of the rear panel of the projector (fig. 3).
- 3) Take out the top cover and disassemble the lamp, pushing it towards its spring clip and rotating it up (fig. 3 and 3/a).
- 4) Undo the two lateral bushes of the lamp and take it out (fig. 3/a).

Before mounting the new lamp, make sure that into the lamp holder there is not anything that may cause interruptions to the thermic and electrical conduction.

- 5) Undo the two lateral bushes of the new lamp and insert it in the lamp holder positioning up the bulb protuberance, fasten the lamp bushes.

**!** Avoid touching the new lamp with the nude hands; in case it accidentally happens, clean the bulb with the proper tissue given with the replacement lamp.

- 6) Make sure the spring clip is back in its place, assemble the top cover and the locking bolt.



SC-57/R  
CODE 991246



## FOCUS

To regulate the focus, depending on the distance, operate on the hand regulator of the objective (fig. 4), rotating it right to left or left to right.



For the best focus regulation it is suggested to use a GOBO (i.e. GOBO B).

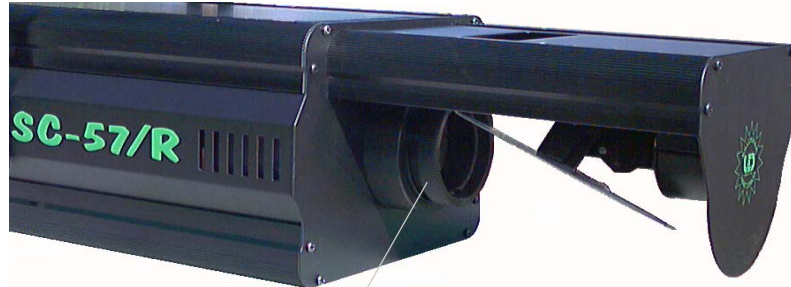


fig. 4

HAND FOCUS  
REGULATION

## GOBOS REPLACEMENT

To replace the GOBOS is extremely simple:

1) Disconnect the projector from the power supply;

! In case it has been recently used, make sure that has cooled down.

2) Unscrew the locking bolt of the rear panel of the projector and take out the top cover (fig. 3, page 7);

3) Keep stopped the rotor and softly take out the spring using a pointed object;

4) Replace the GOBO and softly take back the spring.

! Never push on the GOBO to take out the spring, to avoid damaging the same GOBO and/or the rotor.

# DMX SIGNAL CONNECTION

## DMX LINE TERMINAL



### IMPORTANT

Do not connect or wrongly connect the DMX line terminal is probably the most common cause of a defective functioning of a DMX line.

The DMX line terminal is a resistance placed between the two data pin 2 and 3 at the end of the line.

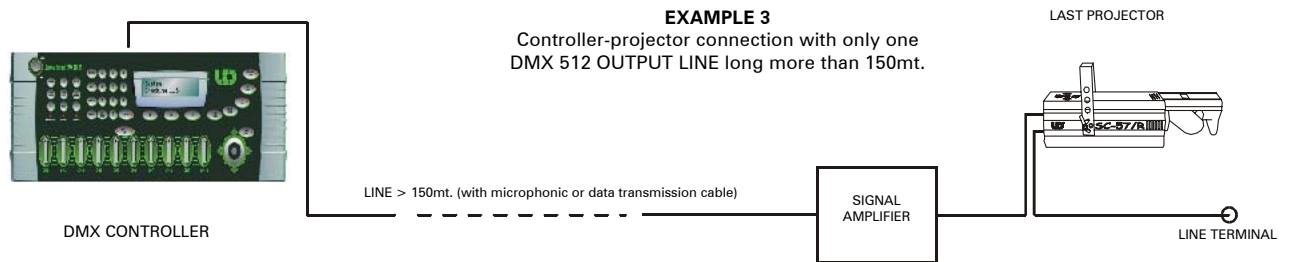
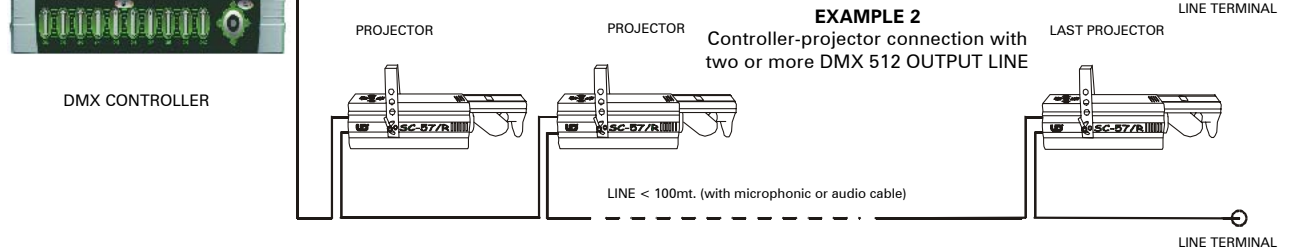
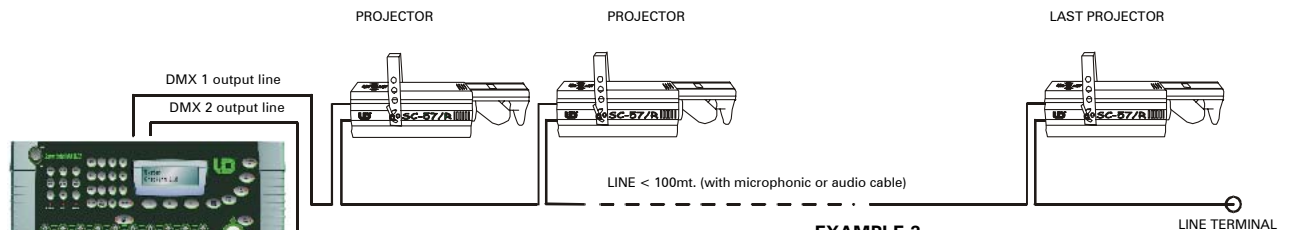
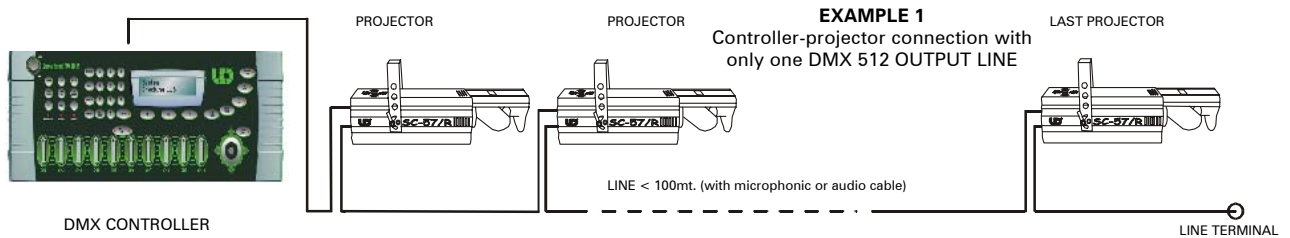
The terminal resistance should ideally have the same value of the impedance of the DMX connecting cable.

It is recommended, for all DMX system, to insert the line terminal into the DMX output connector of the last connected projector .



It is suggested to use a DMX line terminal with a resistance value of 100/120 Ohm.  
We supply, on request, a DMX line terminal with a resistance value of 120 Ohm.

## EXAMPLES OF CONNECTIONS: DMX CONTROLLER - PROJECTOR



SC-57/R  
CODE 991246

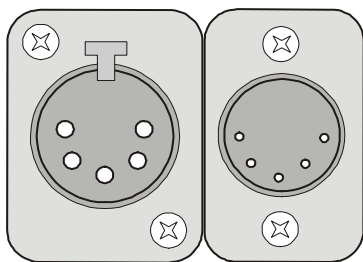


fig. 5

PIN	WIRE	SIGNAL
1	SHIELD	GROUND/RETURN/OV
2	INNER CONDUCTOR	DATA COMPLEMENT ( -, INVERTED)
3	INNER CONDUCTOR	DATA TRUE ( +, NON INVERTED)
4		N.C.
5		N.C.

fig. 5/a

**DMX SIGNAL CONNECTION**

The DMX signal connection to the SC-57/R must be done through the input signal connectors XLR 5 pins, placed on the rear panel of the projector (fig. 5).

The nomenclature of the pins of the DMX input connectors is listed in the table reported in fig. 5/a.

To avoid any problem in the transmission of the signal it is recommended to use a cable for very fast data transmissions.

A normal audio cable is suitable only for lines long not more than 100mt.

The best performances and the maximum stability are obtained using a shielded microphonic cable which section must be of at least 2x0,25mm, or, a data transmission cable.

In case of lines long more than 150/200mt. it is recommended to use a DMX Repeater Amplifier.

**CONFIGURATION AND CONTROLS**

On the rear panel of the SC-57/R (fig. 6) there are some led and some switches to correctly configure the projector.

**LED**

- **Led "POWER" (green)**    **on:**                    the main pc board receives the right power supply;  
    **off:**                    the main pc board is not supplied.
- **Led "DMX" (yellow)**    **flashing:**            the DMX input signal is on;  
    **off:**                    the dmx input signal is out.
- **Led "CONTROL" (red)**    **on:**                    the GOBO and the COLOUR wheels have not been properly settled;  
    **flashing:**            the DMX address is incorrect;  
    **off:**                    the settling has been correctly executed.

**SWITCH**

- **START ADDRESS**        to fix the DMX addresses.
- **OPTIONS**                    to activate/not activate optional functions.

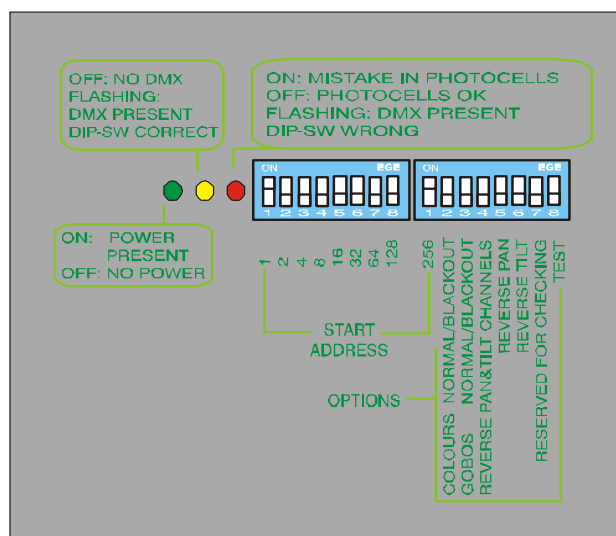


fig. 6

# SWITCH "OPTIONS"

On the rear panel of the projector there are some switches - switch "OPTIONS" (fig. 7) - to be used to activate or not activate the following options:

- **COLOURS NORMAL/BLACKOUT (DIP-SW "2")**      **ON:** to change colours (COLOUR wheel) obscuring the light beam;  
**OFF:** to change colours (COLOUR wheel) not obscuring the light beam.
- **GOBOS NORMAL/BLACKOUT (DIP-SW "3")**      **ON:** to change gobos (GOBO wheel) obscuring the light beam;  
**OFF:** to change gobos (GOBO wheel) not obscuring the light beam.
- **REVERSE PAN&TILT CHANNELS (DIP-SW "4")**      **ON:** to reverse the PAN/TILT channels,  
**OFF:** normal.
- **REVERSE PAN (DIP-SW "5")**      **ON:** to reverse the PAN movement;  
**OFF:** normal.
- **REVERSE TILT (DIP-SW "6")**      **ON:** to reverse the TILT movement;  
**OFF:** normal.
- **RESERVED FOR CHECKING (DIP-SW "7")**      **ON:** to execute the projector setting;  
**OFF:** normal.
- **TEST (DIP-SW "8")**      **ON:** to execute the self-setting;  
**OFF:** normal.

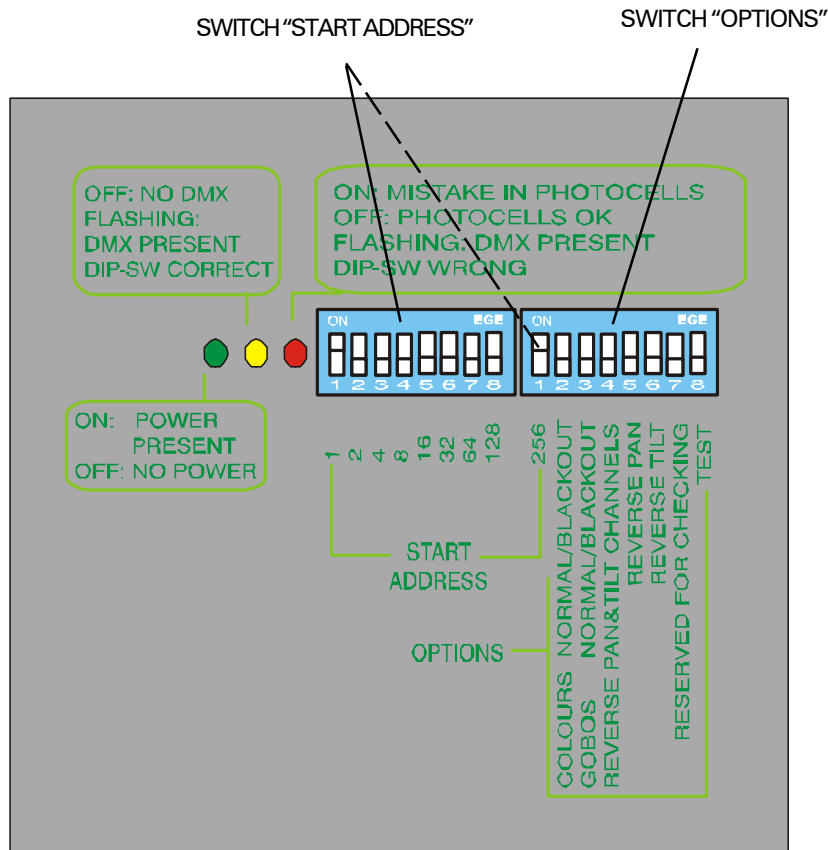


fig. 7

# DMX CHANNELS FUNCTIONS

The SC-57/R needs of seven channels to control its functions.

The connection between the channels and the functions of the projector is reported in the below table:

CHANNEL N°	PROJECTOR FUNCTION
1	PRISM
2	COLOURS + RAINBOW
3	GOBOS + RAINBOW
4	SHUTTER/STROBE SPEED
5	PAN COARSE
6	TILT COARSE
7	ROT. GOBOS

The full list of the DMX values is in the APPENDIX "A", page 18.

## ADDRESS SELECTION

To fix the DMX addresses use the switches "START ADDRESS" (fig. 7, page 11), placed on the rear panel of the projector.

The flashing of the "DMX" led on the rear panel indicates that the data transmission between the DMX controller and the projector is working.

In the following table are reported the correct channels for using four projectors SC-57/R (7 channels) in DMX 512.

PROJECTOR NUMBER	CHANNELS	SWITCH "START ADDRESS"									
		DIP-SW "1"	DIP-SW "2"	DIP-SW "3"	DIP-SW "4"	DIP-SW "5"	DIP-SW "6"	DIP-SW "7"	DIP-SW "8"	DIP-SW ("1")	
		1	2	4	8	16	32	64	128	256	
PROJECTOR N.1	1 - 7	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
PROJECTOR N.2	8 - 14	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
PROJECTOR N.3	15 - 21	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
PROJECTOR N.4	22 - 28	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF

# TROUBLESHOOTING

**TABLE 1 - GENERAL PROBLEMS**

PROBLEMS	PROBABLE REASONS	CONTROLS	SUGGESTED SOLUTIONS
<b>The projector does not start.</b>	The power supply is missing.	Measure the power supply tension on the principal connector.	Supply the projector with the right power.
	Defective power supply cables and/or connectors.	Check cables and connectors status.	Replace cables and/or connectors.
	The general fuse is interrupted.	Check the fuse status.	Replace the fuse (if defective)
<b>The projector works correctly but the lamp does not turn on (the thermic protector is on, fig. 3/a, page 7).</b>	The fan is not working.	Check the fan status.	Wait for the projector cooling. Replace the fan, if is defective. Put the thermic protector off.
	Obstructed air gratings.	-	Wait for the projector cooling. Clean the air gratings and put the thermic protector off.
<b>The projector works correctly but the lamp does not turn on or intermittently turns off.</b>	Defective lamp.	Check the lamp status.	Replace the lamp.
	The lamp is too hot to turn on.	-	Wait for the lamp cooling.
	Ambient temperature over 45°C.	-	Put down the ambient temperature to the normal one for the projector to work correctly (max 40°C).
	Too low power supplied.	Measure the power supplied.	Check the power source.
	Defective igniter.	Check the igniter status.	Replace the igniter.
	Wrong ballast connections.	Check the ballast connections.	Connect the ballast correctly.
<b>One of the functions of the projector is defective (i.e. GOBOS).</b>	Damaged stepper motor.	Execute the tests described at page 15.	Replace the stepper motor.
	Damaged motor driver (PBL3771).		Replace the motor driver (PBL3771).
	Wrong GOBO wheel rotation.	Disconnect the power supply and manually check that the GOBO wheel rotation is flowing and regular.	-

TABLE 2 - PROBLEMS TO THE CONNECTION DATA LINK

PROBLEMS	PROBABLE REASONS	CONTROLS	SUGGESTED SOLUTIONS
<b>None of the SC-57/R respond to the controller input. DMX led is fixed.</b>	Self-testing on (switch "OPTIONS" - DIP-SW "8" on).	Make sure the self-testing is off (switch "OPTIONS" - DIP-SW "8" off).	Put off the self-testing (switch "OPTIONS" - DIP-SW "8" off).
	DMX controller disconnected from the projectors.	Check if the connection of the DMX controller to the first of the SC-57/R is correct.	Connect properly the DMX controller.
	Interrupted connection cable from the DMX controller to the first SC-57/R.	Use an already tested cable and connect one projector per time, until the interrupted cable is found out.	Replace the DMX cable.
	Pin 2 and 3 of the connector of the connecting cable are inverted.	Use an already tested cable and connect one projector per time, until the defective cable is found out.	
	Connecting cable in short circuit.	Use an already tested cable and connect one projector per time, until the cable in short circuit is found out.	
<b>One or more SC-57/R do not execute the inputs of the DMX controller or do it wrongly.</b>	Wrong DMX address.	Check if the DMX address of the projector correspond to the DMX channel of the controller.	Configure properly the DMX address.
	One projector has a defective DMX pc board.	Use an already tested cable and take out from the line one projector per time, until the one with the defective DMX pc board is found out.	Replace the defective DMX pc board.
	The DMX line has not a DMX terminator.	Check if on the last projector there is a DMX terminator.	Put a DMX terminator on the last projector (page 9).

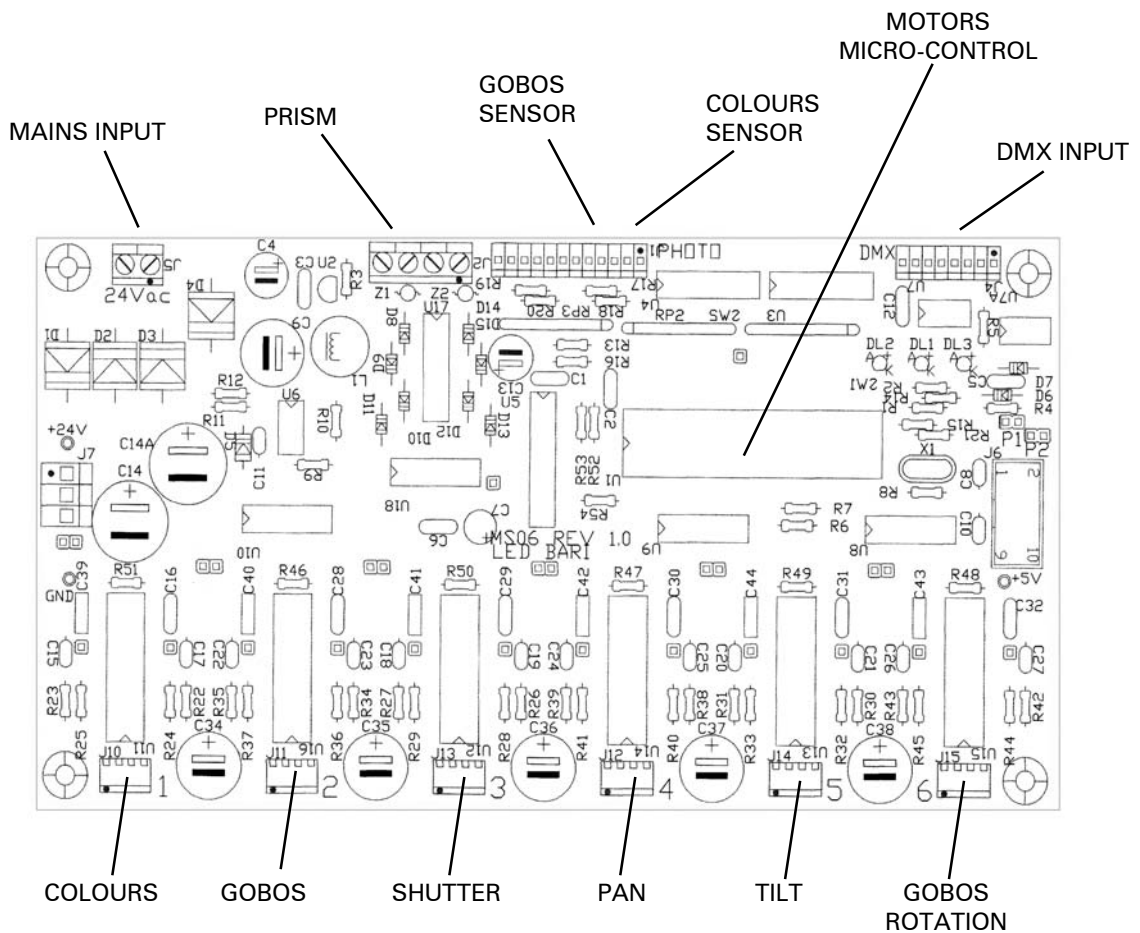
**MOTORS PC BOARD**

**BOARD MS06 (Fig. 8)**

**PROBLEMS AND SOLUTIONS**

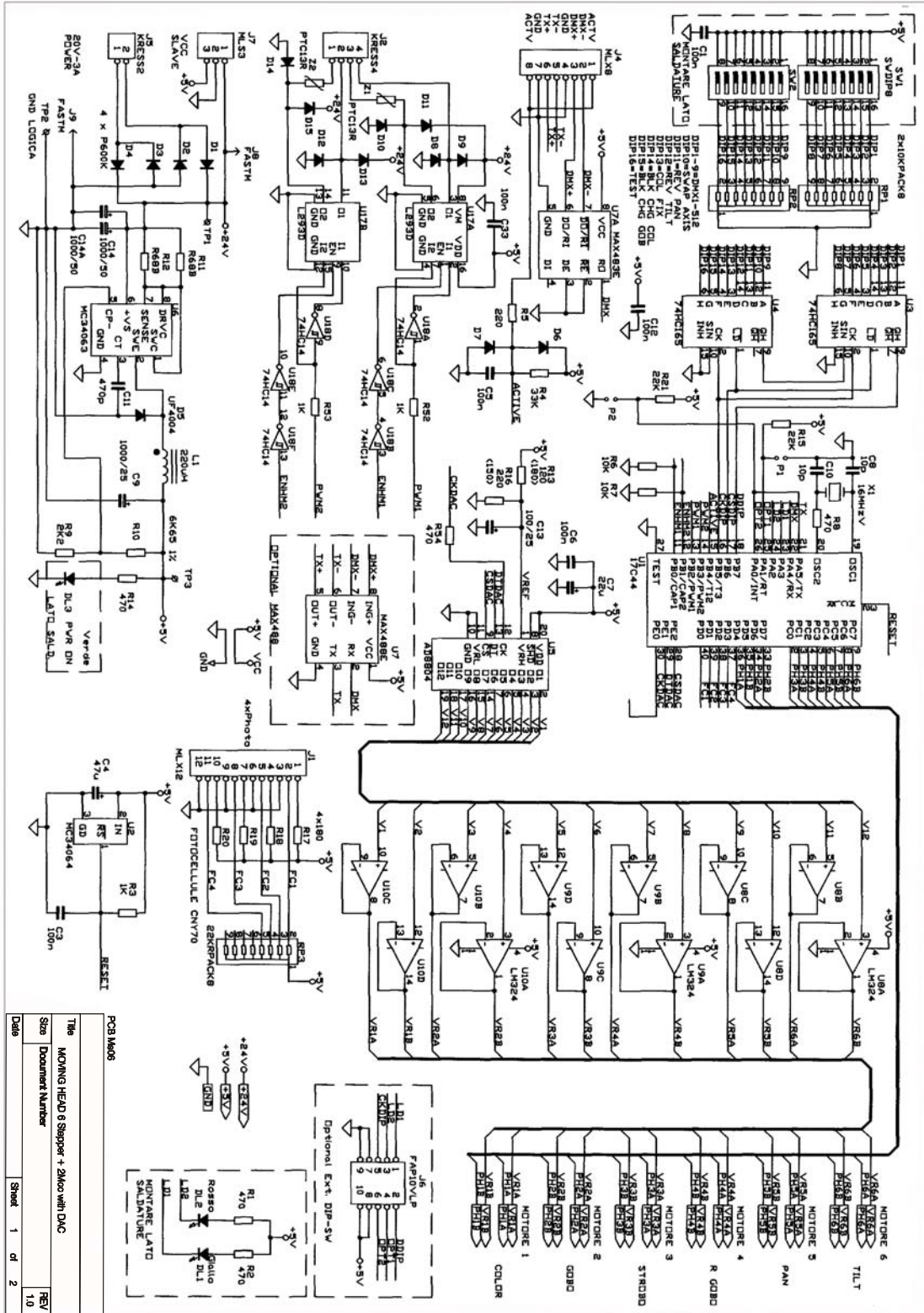
- If one of the Stepper Motors does not move (i.e. the GOBO wheel):
  - 1) put off the projector and disconnect the connecting cables of the GOBO and COLOUR wheels.
  - 2) connect the cable of the GOBO wheel to the connector of the COLOUR wheel.
  - 3) start on the projector:
    - 3a) if the motor of the GOBO wheel works properly, it is necessary to replace U16 (PBL3771).
    - 3b) if the GOBO motor still does not work, it is necessary to carefully check it, so as all the connections circuits (cable and connectors).

fig. 8



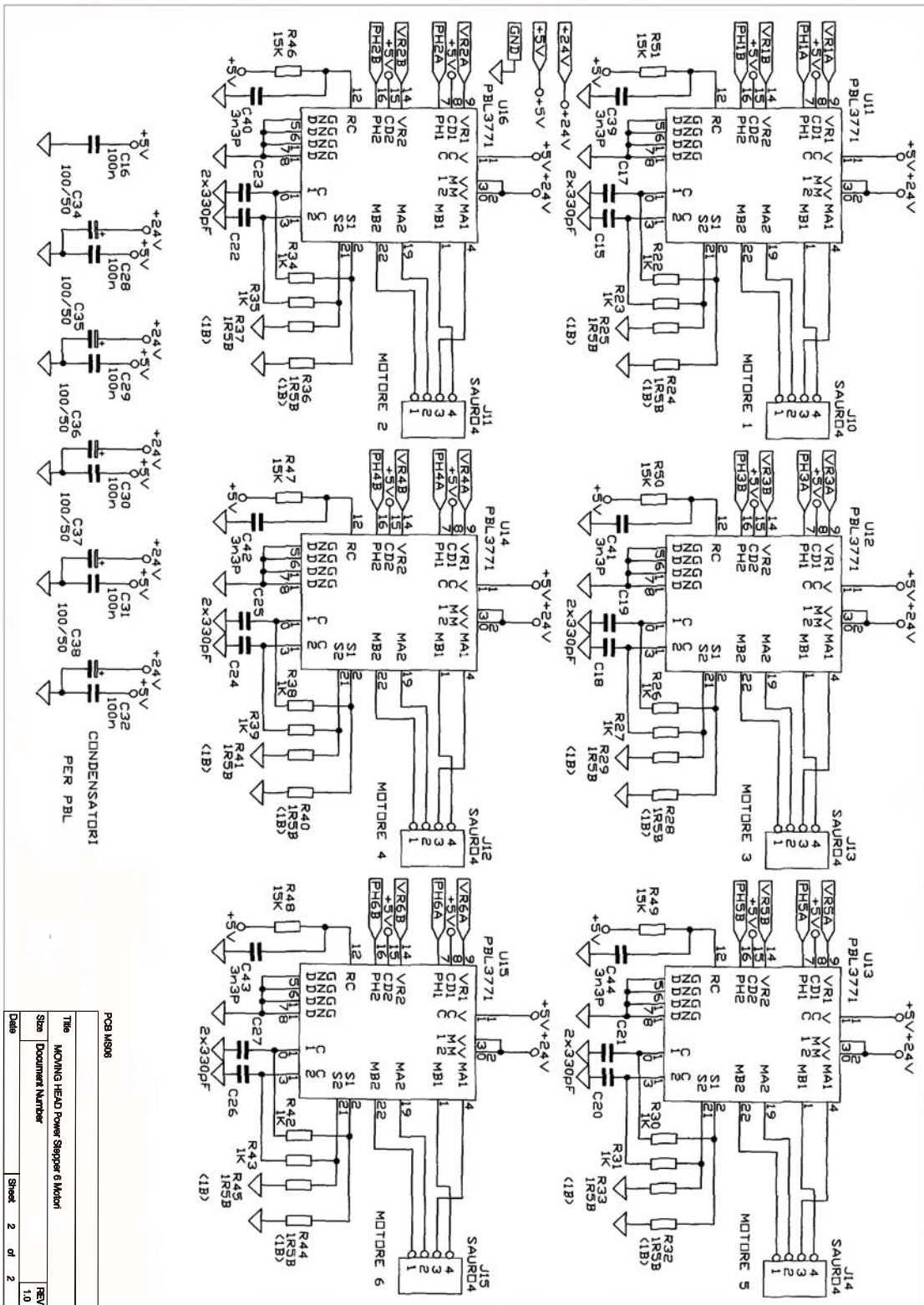


ELECTRICAL SCHEMES



PCB MODEL	PCB M006
TITLE	MORNING HEAD'S STOPPER + 2M00 WITH DAC
SIZE	DOCUMENT NUMBER
DATE	Sheet 1 of 2
REV	REV 1.0

•MS06•



• MS06 •

# MAINTENANCE

For operating a correct maintenance of the SC-57/R follow these instructions:

- 1) Periodically clean the in/out air grates;
- 2) Periodically clean the lenses, the dichroic filters and the mirror using antistatic cloths and products.
- 3) Periodically lubricate the gears of the GOBO and COLOUR wheels and of the PRISM support.

**!** Do not absolutely use solvents or abrasive products.

## APPENDIX "A"

### DMX CHANNELS FUNCTIONS

DMX channels functions complete list (7 ch. - page 12).

DMX CHANNEL	FUNCTION	DESCRIPTION	DECIMAL	PERCENTAGE
1	<b>PRISM</b>	<b>PRISM</b> PRISM OUT PRISM STOPPED ROTATING PRISM	00..15 16..31 32..255	00%..05% 06%..12% 13%..100%
2	<b>COLOURS + RAINBOW</b>	<b>COLOUR WHEEL</b> COLOUR A COLOUR B COLOUR C COLOUR D COLOUR E COLOUR F COLOUR G COLOUR H RAINBOW (16 SPEED)	000..019 020..039 040..059 060..079 080..099 100..119 120..139 140..159 160..255	00%..07% 08%..15% 16%..23% 24%..30% 31%..38% 39%..46% 47%..54% 55%..62% 63%..100%
3	<b>GOBOS + RAINBOW</b>	<b>GOBO WHEEL</b> GOBO A GOBO B GOBO C GOBO D GOBO E GOBO F RAINBOW (16 SPEED)	000..026 027..053 054..080 081..107 108..134 135..159 160..255	00%..10% 11%..20% 21%..31% 32%..41% 42%..52% 53%..62% 63%..100%
4	<b>SHUTTER / STROBE SPEED</b>	<b>STROBE</b> CLOSE SPEED 1 (MIN) SPEED 2 SPEED 3 SPEED 4 SPEED 5 SPEED 6 SPEED 7 SPEED 8 SPEED 9 SPEED 10 SPEED 11 SPEED 12 SPEED 13 SPEED 14 SPEED 15 (MAX) OPEN	00..15 16..30 31..45 46..60 61..75 76..90 91..105 106..120 121..135 136..150 151..165 166..180 181..195 196..210 211..225 226..240 241..255	00%..05% 06%..11% 12%..17% 18%..23% 24%..29% 30%..35% 36%..41% 42%..47% 48%..52% 53%..58% 59%..64% 65%..70% 71%..76% 77%..82% 83%..88% 89%..94% 95%..100%
5	<b>PAN COARSE</b>	<b>COARSE POSITIONING 8 BIT</b> 180°	000..255	00%..100%
6	<b>TILT COARSE</b>	<b>COARSE POSITIONING 8 BIT</b> 40°	000..255	00%..100%
7	<b>GOBOS ROTATION</b>	STOP LEFT TO RIGHT ROTATION STOP RIGHT TO LEFT ROTATION STOP	00..05 06..125 126..129 130..249 250..255	00%..01% 02%..49% 50%..51% 52%..97% 98%..100%





*LIGHTING*

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