Roboscan PRO 1220
users guide

Table Of Contents

INTRODUCTION

The Roboscan PRO 1220 is a high performance, intelligent lighting projector which features:

- 1200 Watt MSR lamp.
- 2x9 dichroic colours plus white and black-out, including remotely selectable black-out whilst changing.
- Colour mixing.
- 2x10 motorized gobos, including remotely selectable black-out whilst changing.
- Gobo mixing.
- Variable shutter speed control for strobe effects.
- 175 degree pan in 0.028 degree steps (6208 steps).
- 83 degree tilt in 0.056 degree steps (1472 steps).
- Variable pan and tilt speed with acceleration control, including remotely selectable black-out whilst moving.
- Motorized focus.
- Motorized iris.
- Motorized dimmer with micro-stepping resolution.
- Multiplying prisms.
- High Speed Strobe effect ranging from 2 - 16 Hertz.
- Frost Filter for softer lighting effects.
- Modular design of all components for ease of servicing.
- Optional Transport Handles and extra mounting bracket.
- Full Optical path with all lenses Double side, Multi-layer coated giving 35% higher light output than previous versions.
- Top cover with snap-lock and safety wire provides instant access to the unit.
- Efficient fan cooling.
- Can be controlled by the 2032 controller (16 pcs.) and 3032 controller (48 pcs.)
- Can be controlled via DMX 512 with a Martin Interface.
- The modular design of the Roboscan PRO 1220 enables the user to have future upgrades of features and so it will be possible to 'customize' your own personal unit.

SELECTING MAINS VOLTAGE AND FREQUENCY

The mains transformer can be wired to match 100, 120, 215, 230 or 250 Volts and the ballast to 50 or 60 Hz. Select according to your local power supply. REMEMBER TO DISCONNECT FROM THE MAINS FIRST!

Unscrew the 4 finger screws which secure the cover over the terminal connections located at the mirror end of the unit. Locate the connectors and connect the brown wire marked with a V to the desired terminal on the top Four, hereby selecting the correct voltage, connect the other brown wire, marked with an F to the desired terminal on the bottom Two, corresponding to the desired frequency.

Re-assemble the unit before connecting to the mains.

HOW TO INSTALL THE ROBOSCAN PRO 1220

IMPORTANT !
BEFORE ATTEMPTING ANY OF THE FOLLOWING PLEASE ENSURE THAT THE UNIT IS DISCONNECTED FROM ANY MAINS AC POWER

- To install the lamp inside the PRO 1220 you must first locate the rear end plate, at the end of the unit where the fans are located. On this end-plate you will see a black mounted lever. Press and then release the small section of the lever on the left hand side. The lever will then open. Now you are able to slide the whole top cover towards the mirror and then remove it upwards, being careful not to damage the mirror, revealing the inside of the unit. Locate the lamp holder which is placed at the fan end of the unit.

- Turn the screws marked No.1 (see Figure 1) one quarter turn and lift out the lamp holder plate. Hold the lamp by the ceramic parts, taking care not to touch the glass parts. Push the lamp firmly into the lamp-holder, carefully replace the lamp-holder plate and tighten screws marked No.1.

- To replace the top cover simply place it back onto the unit over the mirror and then slide it towards the fan end of the unit. It is necessary to replace the cover in this way as there are some securing points along the side of the unit which have to slide into one another to secure the cover correctly. When the cover is in place simply press the large section of the black lever until it clicks and locks into position.

- Remove the transport fixture from the mirror.

IMPORTANT !
IF YOU DO TOUCH THE GLASS PART OF THE LAMP WITH YOUR FINGERS YOU MUST CLEAN IT THOROUGHLY WITH ALCOHOL BEFORE USE

Figure 1

OPERATING WITH A CONTROLLER

- Connect the Roboscan to the controller using the XLR/XLR or XLR/Dsub cable which came with the controller.

- If you are only using one Roboscan insert the terminating plug which came with the controller into the unused XLR socket on the Roboscan.

- If you are using other lighting units with the controller they should be connected together with XLR/XLR cables. The order is not important - use an order which gives the easiest and shortest cable routing. The last unit on the link should be terminated with the terminating plug.

- Set the DIP switch on the Roboscan to the desired controller channel as shown on page 12.

- Switch the Roboscan(s) on before you switch on the controller. A short start-up and test routine will be performed (about half a minute).

- Switch on the controller and program your show!

NOTES ON HOW TO TURN ON THE PRO 1220 LAMP FROM YOUR CONTROLLER

To save valuable lamp life for the user, the PRO 1220 has been fitted with a remotely operated relay to allow the lamp to be turned on and off from your controller without affecting the rest of the unit. This function is automatically available from any controller that can control the PRO 1220.

Please note however, that, whenever the unit is turned on the lamp itself will remain off until you send a command to the unit to turn the lamp on.

- If you are using the Martin Professional 2032 controller you will need the following instructions :

After booting up the controller you will find yourself at the '**Main Menu'**, click on the field marked **'Sequence Editor'**. Select the units that you wish to turn on or off, if you have not configured the units yet you should refer to the Users Manual for your controller for further help. On this screen you will also see a field marked **'Tools'**, click on this field and a screen will appear as a sub-page. You will see that there are Two boxes - one marked **'Lamp On'** and one marked **'Lamp Off'**. These are the Two controls for turning the lamp on and off for the PRO 1220 ONLY. By clicking on the field marked **'Lamp On'** the lamp will fire and by clicking on the field marked **'Lamp Off'** the lamp will be turned off. These two features can be used in sequences that you write but they should be the only command given to the unit E.G. no color or gobo changes aswell. Please note that because the Roboscan PRO 1220 uses a discharge lamp YOU WILL NEED TO WAIT AT LEAST TEN MINUTES AFTER YOU HAVE SWITCHED THE LAMP OFF BEFORE YOU CAN SWITCH IT BACK ON AGAIN SUCCESSFULLY.

The Software required to run the Roboscan PRO 1220 via the Martin 2032 Controller is Version 1.38 or higher

- If you are using the Martin Professional 3032 controller you will need the following instructions :

After booting up the controller you will find yourself at the '**Main Menu'**, click on the field marked **'Sequence'**. Select the units that you wish to turn on or off, if you have not configured the units yet you should refer to the Users Manual for your controller for further help. On this screen you will also see a field marked **'Light'**, click on this field and a new bottom screen will appear as a sub-page. You will see that there are Two boxes - one marked **'Power On'** and one marked **'Power Off'**. These are the Two controls for turning the lamp on and off for the Centrepiece ONLY. By clicking on the field marked **'Power On'** the lamp will fire and by clicking on the field marked **'Power Off'** the lamp will be turned off. These two features can be used in sequences that you write but they should be the only command given to the unit E.G. no color or mirror changes aswell.

The Software required to run the Centrepiece via the Martin 3032 Controller is Version 1.05 or higher

- If you are using the Martin Professional DMX Interface and a separate DMX Controller you will need the following instructions :

To turn on the Lamp of the PRO 1220 via a DMX board you will first need to locate the channel faders that are controlling each unit. The first channel for each unit controls the Lamp and the Shutter. To send the signal required to turn the lamp On you should move this fader so that it sends a DMX value of between 252 and 255, this will ignite the lamp.

The Software required to run the Roboscan PRO 1220 via DMX Interface is Version 5 or higher

Please note that to prevent accidental switching off of the lamp by moving a DMX fader,this function is not supported by the DMX Interface.

SEQUENTIAL SOFTSTART OF THE MSR 1200 LAMP

Due to the surge of current that is used when first starting the MSR 1200 lamp it is recommended that you write a 'softstart' sequence that will turn on the lamps one at a time with an interval in between each start of approximately 5 seconds.

LAMP ADJUSTMENT

- The position of the lamp-holder is correctly adjusted at the factory but to insure optimum performance fine adjustment will be necessary when the projector is inst-alled in its permanent site. Procedure is as follows:

IMPORTANT !
WHILST ADJUSTING THE POSITION OF THE 1220 LAMP YOU MAY BE EXPOSED TO EXTREME HEAT AND BRIGHT LIGHT THEREFORE CAUTION SHOULD BE TAKEN BY COVERING SKIN AND BY WEARING EYE PROTECTION

- Before you begin to adjust the lamp, you will have to remove the top cover plate, (as explained in **'HOW TO INSTALL THE ROBOSCAN PRO 1220'**). Once you have removed the cover you will see a black switch positioned on the left hand side at the mirror end just inside the casing. This switch is actually designed so that the lamp will to off if, for any reason, the cover is removed, which means that while you are adjusting the position of the lamp this switch needs to be fixed down constantly.

A Point the beam at a flat surface. Using the controller set the Roboscan PRO 1220 to produce a full power, full size white image (that is without gobos, filters and prisms and with iris fully open and the dimmer on 100%). Focus to produce as sharp an image as possible.

B Loosen screws 4 & 5 (see Figure 2) and move the lamp from side to side until the brightest part of the image is in the centre. Tighten the screws.

C Loosen screws 2 & 3 (see Figure 2) and move the lamp forwards and backwards until the image is evenly illuminated. Tighten the screws.

A correctly adjusted projector produces an evenly illuminated image with a sharp edge.

N.B. If you switch off the lamp allow it to cool for at least 10 minutes before switching on again.

1 : Lamp-holder retaining screw
2-3: Screws for forwards/backwards adjustment
4-5: Screws for sideways adjustment

Figure 2

ADJUSTING THE MIRROR

Re-adjusting the mechanical stop on the Roboscan PRO 1220-mirror adaptor is required if the pan or tilt motor occasionally loses steps, leaving the mirror incorrectly positioned after a reset is performed. This error occurs when the recoil of the mechanical reset bounces the mirror and bracket a whole pan or tilt motor step. (N.B. A controller is necessary to make this adjustment)

- Reset the Roboscan PRO 1220
- The pan motor adjustment:

1 Use the trackball to move the cursor to the upper-left corner of the movement-grid on the 2032-controller until the screw (A1) in figure 3 is positioned at the upper mechanical-stop (A2).
2 Release the lock-nut on the adjusting screw (A1).
3 Turn the screw (A1) clockwise about 1/2 - 1 turn, hereby increasing the distance between the head of the screw and the mechanical-stop (A2).
4 Tighten the lock-nut on screw (A1).
5 Reset the Roboscan PRO 1220 a number of times to check the accuracy of the new reset position.
6 Use the trackball on the 2032 controller to move the mirror through all other positions, check that adjustment screw (B1) does NOT touch the mechanical stop (B2) during these steps. If it does then adjust screw (B1) accordingly.

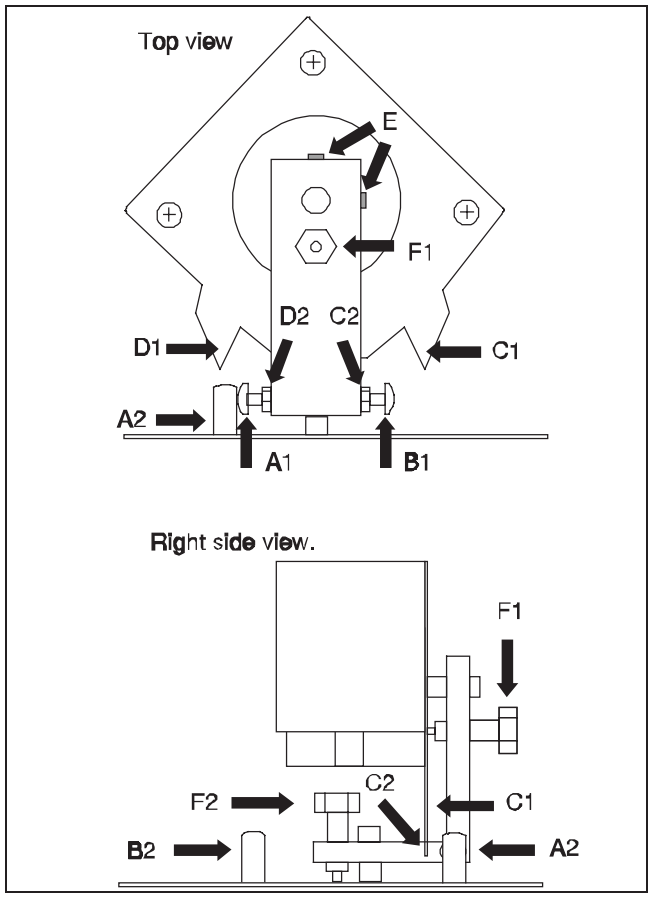


Figure 3

- The Tilt-motor adjustment:

1 Use the trackball to move the cursor to the upper-left corner of the movement-grid on the 2032-controller until the top mechanical-stop (C1) in figure 3 is positioned at the edge of the mirror bracket (C2)
2 Loosen the two allen-screws (E) holding the axle of the motor while observing that the motor does not slide vertically from its current position.
3 Carefully turn the motor and mirror clockwise (observe that the motor axle does NOT turn.) until there is a distance of about 1/2 to 1 mm between the edge of the mirror bracket (C2) and the top mechanical-stop (C1).
4 Tighten the allen-screws.
5 Use the trackball on the 2032-controller to move the mirror through all outer positions, check that bottom mechanical-stop (D1) does NOT touch the edge of the mirror bracket (D2) during these steps. If it does then re-adjust as described making the distance between (C2) and (C1) even smaller.

ADJUSTING THE PAN/TILT DAMPERS

Re-adjustment of the Pan or Tilt dampers is necessary if the end-stop adjustments have caused either of the motors to slide along its axis at any time.

- Loosen the dampers marked (F1) and (F2), See Figure 4, until the spring-loaded plastic pin is not touching the motor. Using the controller, set the Pan/Tilt speed to minimum and turn the lamp on. Then, still using the controller move the mirror from, either extreme left to extreme right for Pan adjustment, or, extreme top to extreme bottom for Tilt adjustment. Whilst the mirror is moving watch the beam movement to ensure that it is smooth. Tighten the dampers (F1) and (F2) until the smoothness of the mirror movement is affected and it becomes more 'twitchy'. At this point you should turn the dampers slightly back so that you restore the full smoothness of the mirror movement.

- If the dampers are set to a position that is too loose you will find that the mirror will lose steps when running at the higher movement speeds.

- If the dampers are set to a position that is too tight you will find that it will affect the smoothness of the mirror movement at the lower movement speeds.

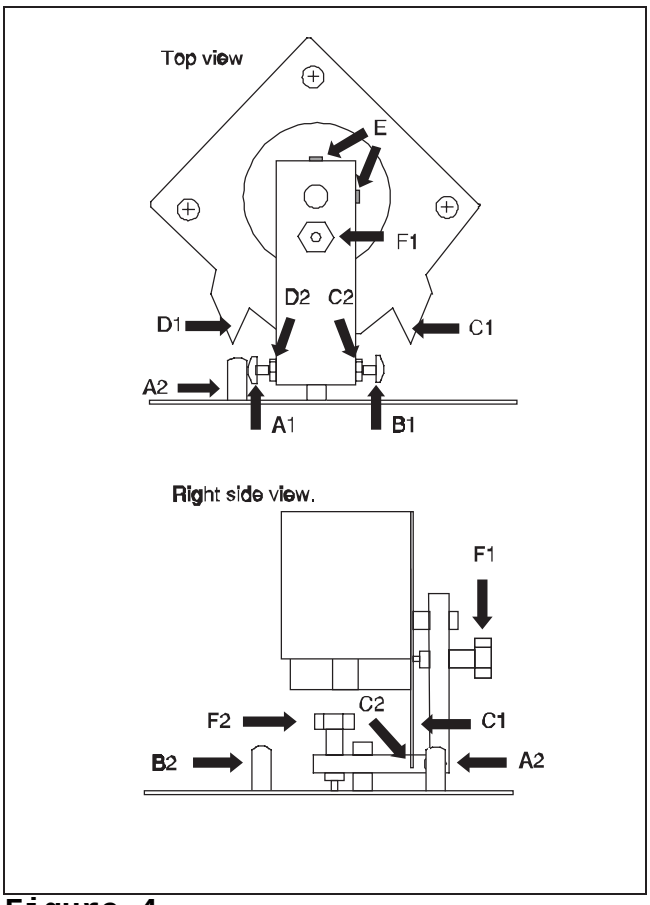


Figure 4

REGENERATING BAD LAMPS

It can occur that, after a period of time, problems can develop with discharge lamps when they have been running with too low voltage. The low voltage causes the lamp to burn with a blue arc inside and also causes the lamp to become black on the inside. When the lamp is black on the inside the lamp will refuse to start at normal voltage.
In this situation it is possible to regenerate the lamp and so continue its expected life, to do this you should follow the instructions below :

Unscrew the 4 finger screws which secure the cover over the terminal connections located at the mirror end of the unit. Locate the Brown wire marked with a V. If this wire is connected to the 120V terminal then move it to the 100V terminal. If the brown wire is connected to the 230V or the 250V terminal then move it to the 215V terminal.

Switch on the power to the unit and if the lamp starts let it burn at this voltage for approximately 5 minutes and then switch off again. The lamp will now be clear on the inside and ready to re-use at the normal voltage. Re-connect the Brown wire to the terminal where it was before and start the unit as normal.

If the lamp refused to start, please contact your local Martin Dealer and let him regenerate the lamp in a special fixture.

REMOVING MODULES

The Roboscan PRO 1220 has been constructed with ease of servicing and maintenance in mind and is constructed totally in a modular fashion. If you have problems with any particular section, you want to put in your own custom gobos or you need to clean parts of the unit it is a simple operation to remove any module, simply :

- Remove the top cover of the unit as described in the section marked 'INSTALLING THE ROBOSCAN PRO 1220'.

- Locate the module that you wish to remove from the unit. On this module you will see that there are Three PCB Connectors connecting the module to a wiring loom, remove these Three connectors taking care to note the location and direction of each one.

- On each side of every module there is a finger screw, unscrew these Two screws and the module can be removed, to do this simply pull each side of the module straight out of the unit being careful as you lift.

REPLACING MODULES

- To replace the module simply reverse the steps above being careful when you replace the module to ensure that it is straight and locates properly, there are Two brass pins on the bottom of the module which have to locate into holes in the bottom of the inner casing before you are able to re-tighten the finger screws.

DIP SWITCH SETTINGS FOR THE ROBOSCAN PRO 1220

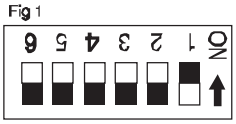
Address settings for RoboScan PRO 1220					
Unit no.	Section A	Section B	Unit no.	Section A	Section B
1	1	2	9	1,5	2,5
2	1,2	3	10	1,2,5	3,5
3	1,3	2,3	11	1,3,5	2,3,5
4	1,2,3	4	12	1,2,3,5	4,5
5	1,4	2,4	13	1,4,5	2,4,5
6	1,2,4	3,4	14	1,2,4,5	3,4,5
7	1,3,4	2,3,4	15	1,3,4,5	2,3,4,5
8	1,2,3,4	5	16	1,2,3,4,5	6

Sequence settings for RoboScan PRO 1220	
Description	Section A and B use the same settings
Test	All switches set to OFF position
Demo	2,6
Demo random 1	2,3,6
Demo random 2	4,6
Mechanical stop (For service use)	1,3,4,5,6
Adjustment (For Service use)	3,4,5,6
Led chase (For Service use)	2,4,5,6

This page shows the different address and sequence settings for the DIP switches in section A and B on the RoboScan PRO 1220.

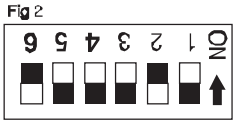
The above settings refer to the pin(s) on the DIP switch which are set to the ON position.

Fig 1



The example in figure 1 would be described above as; "1" (Unit no. 1, Section A)

Fig 2



The example in figure 2 would be described above as; "2,6" (Demo (Either section)).

TECHNICAL SPECIFICATIONS

Roboscan PRO 1220	
Dimensions : Length Width Height	 1090 mm 316 mm 290 mm
Weight:	49.0 Kg
Fuse:	20 AT (6.3 X 32 mm)
Power consumption:	1550 W
Lamp:	Philips 1200 W MSR