SHOWCRAFT

Colourset

Series 2

OPERATING INSTRUCTIONS

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INTRODUCTION

Colourset is a digitally operated colour-changing system. It consists of a compact lightweight unit containing a user-fitted gel scroll, up to twenty-one colours in length.

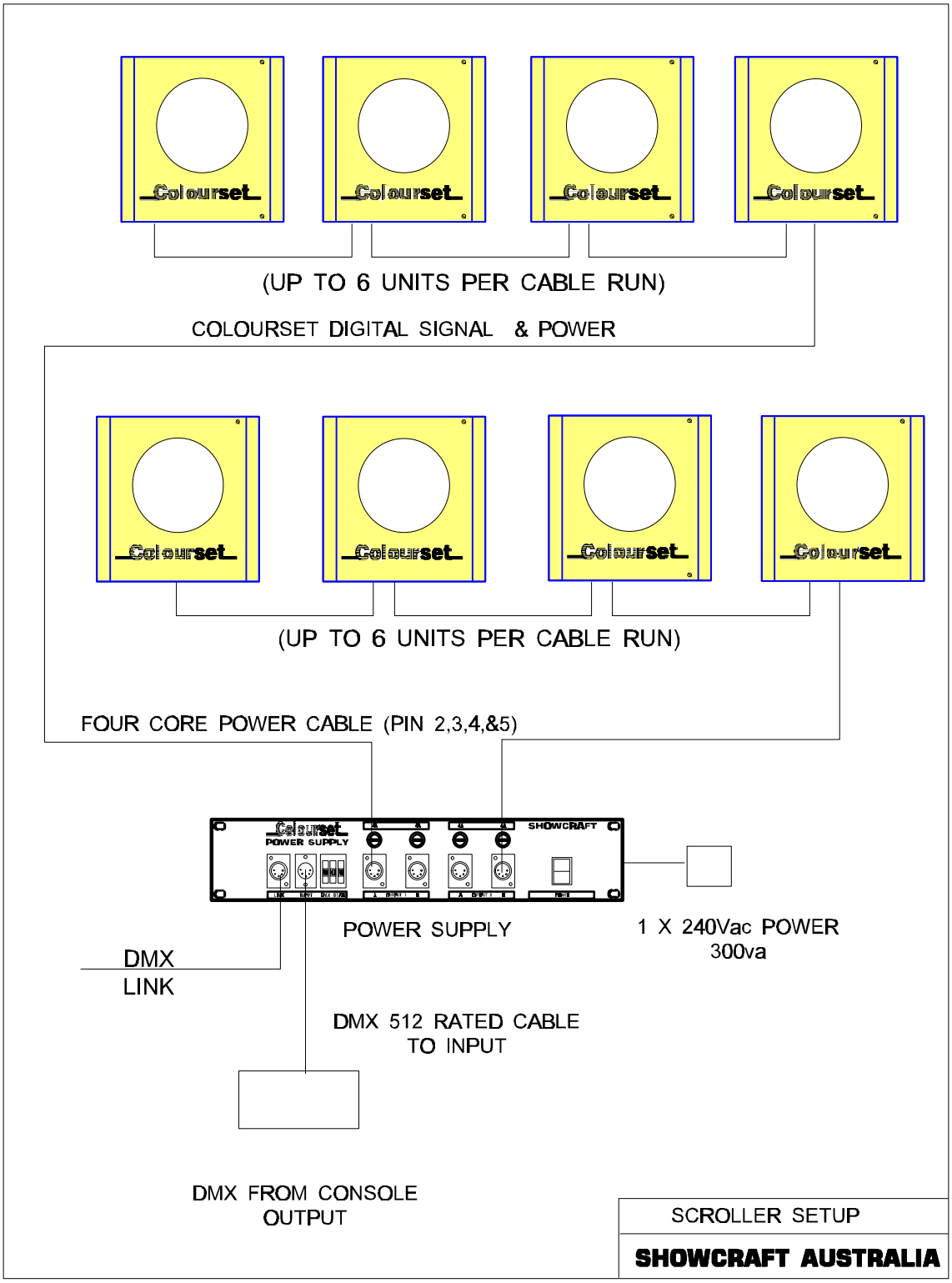
The Colour change unit is fitted onto a lantern utilising the existing gel frame runners. A wide range of changer sizes are available which will suit almost any theatre lantern available.

The Colourset ***Series 2*** scroller tracks a DMX output lighting console in real-time where the scroll position exactly mimics fader position. The Colourset scroller may also be operated in a manner that automatically positions the scroll only on full frames as the fader position is moved.

Power is supplied from a low voltage DC power supply which comes in a sturdy rack mount package and drives up to twenty-four scrollers of any size. Two data input connectors allow linking of multiple power supplies into larger systems. The power and data signal outputs are supplied on four individually fuse XLR 5 pin outlets. The scrollers obtain power and signal via a single lead daisy chain system and can be placed up to one hundred metres from the power supply. International supply capability is provided for with a 110/240 volt selector.

A stand-alone keypad controller is available to provide quick and easy control of Colourset scrollers. The controller has a memory capability of sixty-four scenes which can be created and stored for instant recall. It features a programmable cue sequence which can be triggered by a single key or internally timed. All keys are fitted with a visual status indicator which provides preview facilities.

SETUP DIAGRAM



QUICK SET UP

1. Position power supply as near as practical to scrollers.
2. Position changers on lantern gel colour frame runners.
3. Select channel number via thumbwheel on rear of changers, (eg. 1 thru 16)
4. Daisy chain 5pin leads from power supply outlets with a maximum of six scrollers per run.
5. For 5K and 8W units attach an IEC 240 volt lead to changer for fan power.
6. Connect signal lead from DMX line to power supply input.
7. Select DMX start channel number on power supply thumbwheel. **(example: 100)**
8. Connect IEC power leads to power supply and turn power on.
9. Turn power on to 5k and 8 way fan supply and check if fans are operating.
10. All units should be ready to operate at this point.
11. The DMX start channel as set on the power supply is the speed control fader. The next dimmer channel up will be the colour control for scroller one and the next dimmer channel for scroller two. **(example: If power supply is set on 100 then 100 is speed control, dimmer 101 is colour control for scrollers set on 1,.dimmer 102 is colour control for scrollers set on 2 etc.)**
12. Set all colour control channels to zero.
13. Set speed control fader to 90%.**(channel 100 in example)**
14. Changers will now operate with 0.5 sec frame change time.
15. Set colour control fader at 10%. This moves the corresponding scroller colour up one frame.
16. When using the Colourset controller, set power-supply thumbwheel to #000.

DMX CONTROL

The Colourset Power supply has a thumbwheel selector located on the front panel. Set this selector to the desired DMX start channel (DMX offset) for the scrollers.
On the rear of each scroller is a thumbwheel selector which can be assigned to any number from 1 to 99 (***Series 2*** units) or from 1 to 24 (Series 1 scrollers). This number, when added to the selected start channel will be the colour control channel of the particular scroller. Any number of scrollers can be operated in groups by assigning them to the same control channel.

Example: Set the Power supply selector to Channel 100. Set the scroller selector to 12. Now the scroller will be controlled for colour position by channel 112 on the console, and controlled for speed of change by channel 100 on the console.

COLOURSET CONTROLLER

The Colourset controller provides 16 individual channels. The thumbwheel selector located on the rear of each scroller is set to the number corresponding to the desired control channel. Any number of scrollers may be set on the same channel if required.
The Power supply thumbwheel must be set to #000 to enable the scrollers to receive data from the controller.

FADE TIMES

Mode 1: Fade times are generated within the scroller in this mode of control, the timing is set by the desk fader assigned to the DMX start channel as selected on the Colourset power supply.
Fade times are preset with this fader according to it's level. Refer to the chart for level/time settings. This fader must be maintained at a level greater than 10% to ensure that the scroller stays in Mode1 operation.

Frame Time:(secs)	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	0.1
LEVEL:(percent)	10	20	30	40	50	60	70	80	90	100

Mode 2: The scroller **tracks the level set by the fader** controlling the colour position for the ***Series 2*** Colourset scroller (note: This mode is not implemented in Series 1 scrollers). Access to this mode is enabled only when both the scroll position itself and the time control fader is at zero position. Ensure that the speed fader is not above zero when the scroll is on zero% otherwise the unit will change back to mode1 operation.
Since the scroll now tracks fader position, the fade times are set on the console in the same way that a normal dimmer fade time is programmed.

FRAME POSITIONS

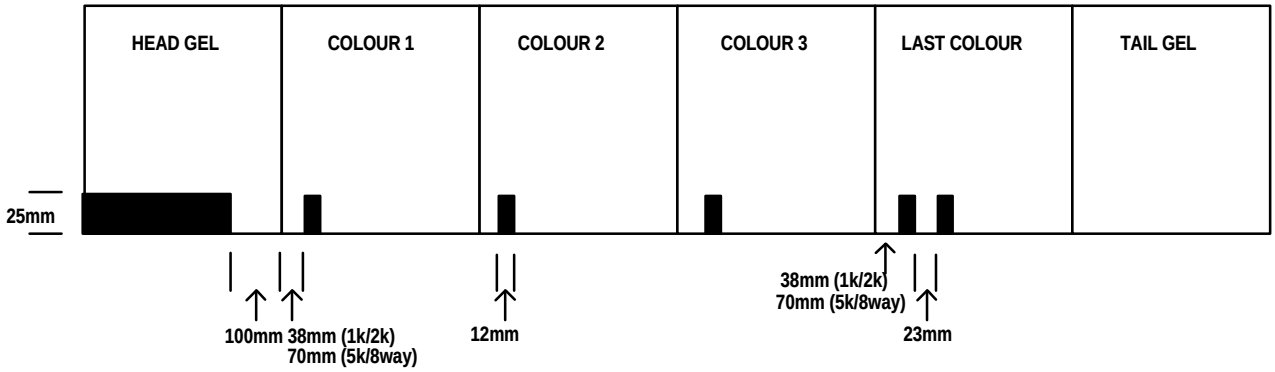
The Series 2 scroller can take up to 21 frames of gel. The gel length is measured by the Colourset scroller at power up and the control level is set within each unit according to the number of frames loaded.
If a scroll has 21 frames, each frame is located on each multiple of 5% level setting. i.e. 0% = frame 0, 5% = frame 1, 10% = frame 2
If a scroll has 11 frames, each frame is located on each 10% level. i.e. 0% = frame 0, 50% = frame 5, 100% = frame 10.
The Colourset scroller can be loaded with less than 11 frames, in this case the positions of each frame will still be on the 10% levels.
On power up the scroll length is determined and input levels are restricted to the maximum frames available; i.e. If there are only 9 frames in a scroller then the end of the scroll would be at 80%, pushing the fader past this point causes no effect to the scroller.
If the scroller is loaded with any number between 11 and 21 frames positions will be set on 5% multiples for the control fader.

GEL SCROLL

FRAME SIZE

	HEIGHT		WIDTH
1K units	180mm	x	230mm
2K units	310mm	x	370mm
2.5K units	380mm	x	500mm
5K units	470mm	x	500mm
8W units	640mm	x	500mm
9W units	470mm	x	650mm

All Colourset scrolls are assembled with a head gel and a tail gel added - these are the same size as all frames used in the scroll. Silver markers are 38mm from the edge of each gel for 1k and 2k and 70mm from the edge for 2.5k,5k,8w and 9w models



THIS DRAWING IS NOT TO SCALE

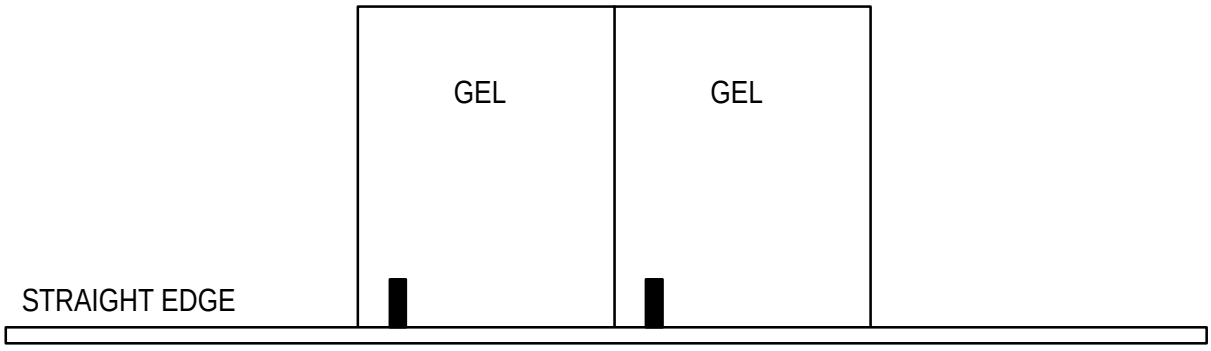
TAPES Showcraft recommends the following tapes

MARKING TAPE - "SCOTCH 850 SILVER TAPE"
12mm for markers
24mm for head gel strip

JOINING TAPE - "PERMACEL P-253 CLEAR"
18mm

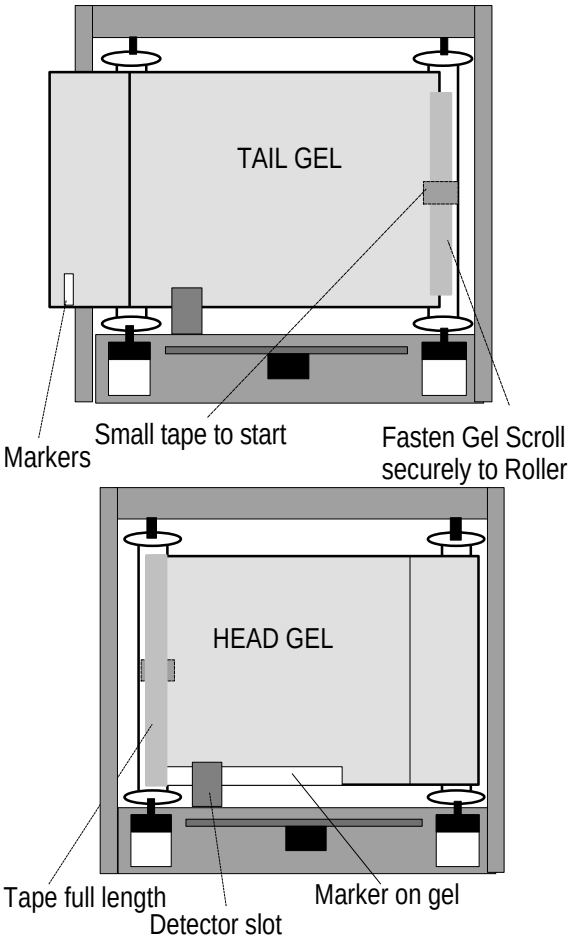
GEL SCROLL ASSEMBLY

1. Cut gels to size accurately and square. Use a template to ensure all cuts are accurate. It is important to ensure the edges to be joined are straight due to the possibility of white light coming through any gaps when the scroll is in use. The top and bottom edges also need to be straight to ensure the gel will roll from one roller to another without creating excess noise from scraping on the roller guides.
2. Ensure there are no large marks on the bottom 30mm of each gel frame. Printing, chinagraph pencil marks and dirty marks can interfere with the detection system used by the scroller if excessive.
3. Using a marked template, place the silver marking tapes on all the frames of gel ensuring they are in the positions according to the scroll layout.
4. Place each gel to be joined on a flat surface (table) with the bottom edges of each against a straight edge. Slide the two pieces to be joined together until the vertical edges touch. Take a length of tape longer than the join length and place over the join. Pressure the tape slowly from one end to the other in order to avoid creases and air bubbles in the tape.
5. Tape gel on both sides and trim off excess tape at top and bottom.
6. Make sure the area where the gel scroll is to made is reasonably clean and especially has no lint or loose fibres around. Gel can easily become statically charged and will attract dust and fibres as you move it around.
7. Once completed the gels can be rolled up and taped at the loose end until they are ready to be loaded into the scrollers. *Hint: roll gels starting with the head gel first as it is easier to load the scrollers from the tail end first.*



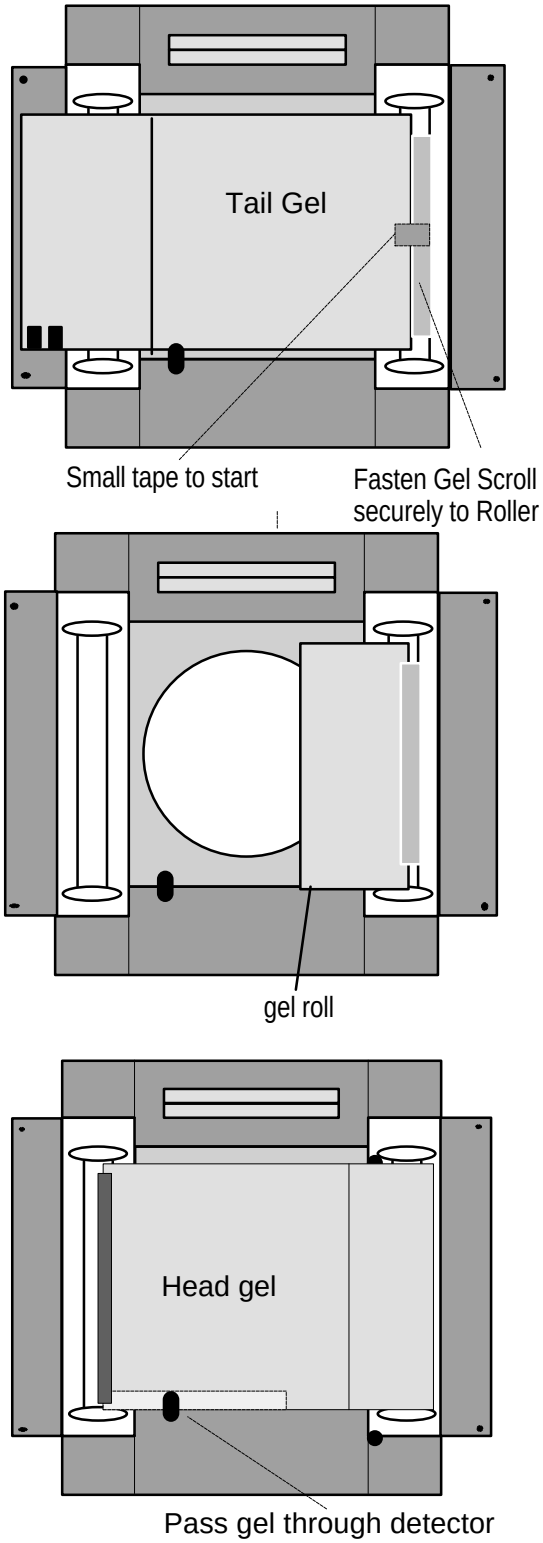
Using a straight edge during gel string assembly ensures that the completed scroll will be straight.

FITTING THE 1K/2K GEL SCROLL



1. Open the front cover of the scroller to gain access to the rollers.
2. Orient scroller with the motor section closest to you.
3. To follow this procedure the gel should be rolled with the tail piece at the free end.
4. Open the gel scroll out until you see the markers. You will see two 12mm markers close together which indicates it is the tail end of the scroll.
5. Lay the gel across the two rollers as shown in the diagram with the marker side of the gel closest to you.
6. Centre the end of the gel on the right-hand roller and apply a small piece of tape to attach it to the roller in the centre only. Double check that the gel is centred evenly between the two guide flanges of the roller.
7. Square up the gel across both rollers to make certain the gel will be square on the rollers and apply a long length of tape to secure the gel to the right-hand roller.
8. Wind the gel onto the right-hand roller by rotating the roller by hand until the whole length of gel is on the roller.
9. Hold the right-hand roller and pull the gel so it becomes tight on the roller.
10. Take the free end of gel and place a small amount of tape in the centre of the side to be attached to the roller. The bottom of the gel string, which will have a long silver marker on it, has to pass through the detector slot located at the bottom near the left-hand roller. Pass the gel in through the slot and using a small piece of tape in the centre of the head gel, tape it on to the left roller. Check that the gel is evenly spaced between the roller flanges.
11. Ensure that the gel is square on the rollers. Take a longer length of tape and secure the gel to the left roller.
12. The scroller is now ready for use. The gel and rollers will not be tensioned at this point. Tensioning is taken care of electronically once the scroller is powered.
13. To check the system without the use of a console, plug the scroller into a power supply and put the scroller thumbwheels on "00". At this point the scroller automatically starts a self-test operation and scrolls from frame to frame endlessly. During this process check the frame count and gel positioning.

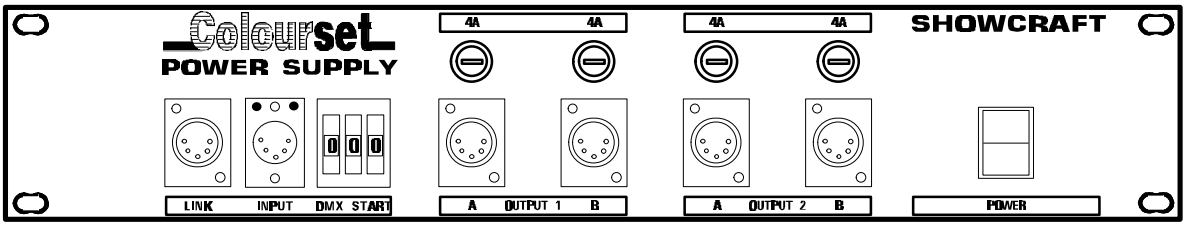
FITTING THE 5k/8way GEL SCROLL



1. Remove four screws on side flaps to gain access to the rollers.
2. Orient scroller so that the main cooling fan is at the top.
3. Lay gel scroll across the two rollers as in diagram. Centre the gel on the right hand roller and using a small length of tape secure the centre of the tail gel to the centre of the right-hand roller.
4. Align the gel to the left hand roller by pulling it tight to make sure that the gel will be taped on squarely to the right roller. Take a long piece of tape and secure the scroll edge to the roller.
5. Roll the gel up again and place it on the left hand side of the right roller. The gel can now be easily rolled onto the roller either by hand or by using the motor power of the scroller.
6. To use motor power put the thumbwheel on 00 and power up the scroller from the Colourset power supply. The gel will wind onto the roller with the motor driving. When it is wound on turn off the power to stop the roller.
7. This type of scroller mechanism requires mechanical tensioning before the gel is secured to the left hand roller. To tension the system hold the right hand roller from turning either by hand or by taping the free end of the gel to the metal frame work.
8. Turn the left-hand roller four to five turns anticlockwise to tension the spring.
9. Hold both rollers from unwinding and tape the gel leader onto the left hand roller. Use a small piece of tape in the centre and align the gel centrally on the roll. Once aligned check that the gel is now tensioned up, if OK then securely tape the gel onto the roller.

Finally check scroller operation by setting the thumbwheel to "00" (test state) and turn on power. Make sure the scroll is staying within the roller flanges and tension is maintained. Stop the scroll on one of the middle frames (frame 5) turn power off and check tension. The scroll will be at it's loosest point now. If there is no tension here you will need to add more tension to the scroll.

POWER SUPPLY



The Colourset power supply can be driven from either a DMX source or a Colourset controller. The supply is designed with split power and signal paths to avoid total system malfunctions. The outputs are grouped in such a way that the pair labeled "OUTPUT 1" are electrically isolated from the "OUTPUT 2" pair. The "A" and "B" outlets of each have their signal lines paralleled in each group and the DC power to each socket is individually fused. The input to the power supply is hard-wire linked to the socket labeled "LINK" to provide in/out facilities for data lines. Two LED indicators above the input socket indicate the presence of signal at this socket, both LED's will be on if the dmx/control signal is operating normally.
The power supply contains a circuit card which provides separate line drivers for the outputs as well providing protocol conversion. The output signal from the power supply to the scrollers is not a DMX signal however it is a data stream with a compatible hardware structure consequently no damage can occur if a DMX signal source is accidentally plugged into the scroller lines. The Colourset signal is optically coupled within each scroller to protect each input in the case of wiring faults.

SETUP

1. Place the power supply as near as practicable to the scrollers. The power supply output voltage is 36 volts DC. If long cable runs of more than 50 metres from the power supply to the scrollers are needed then the cabling would need to be of sufficient wire gauge to minimise voltage drops. The scrollers can run at voltages as low as 18 volt DC however the high speed changing ability will be impaired.
2. Each output can supply up to six scrollers daisy chained. The fuse located above each outlet protects the power supply from shorts or overloads on each individual outlet. Eight scrollers can be safely run from one outlet if need be; however the corresponding second output of the group (Output 1A and 1B) can then only take up to 4 scrollers.
3. Plug the input signal into the power supply. The two indicators above the input should light up even if the power is not turned on. In some installations the brightness of the two LED's may not be the same, this only means that the data signal is non-symmetrical.
4. Select the appropriate DMX start channel for the scrollers. The start channel selected will also be the speed and mode control for the scrollers on that power supply. Setting the start channel on an even 100's figure makes for an easy calculation of the scroller channel. **With a start channel of 300 and a scroller channel selected to say 54 this particular scroller will be operated by DMX dimmer channel 354 and it's speed control will be on dimmer channel 300.**
5. Plug the power supply into 240 Vac via the IEC inlet on the rear. This inlet also contains a voltage selector for 110v operation and a mains fuse holder. The fuse is located just below the inlet socket on the left hand side. If it is necessary to replace a mains fuse ensure that the correct type and rating is used. To prevent the possibility of damage to the scrollers, after first replacing the main power fuse, the output cables to the scrollers should be disconnected and then the power turned on. The DC voltage at the outlets (Pin 4&5) should now be measured to ensure it is between 30 volts and 38 volts DC, any reading outside of this range could point towards a doubtful supply.

TROUBLESHOOTING

UNITS

ALL UNITS DO NOT RESPOND

Check - DMX signal is present at the power supply input. Both indicator Leds should be lit.
- Thumbwheel on power supply is not set on zero.
- Power Supply is on.
- Power fuse on rear of power supply below IEC power input.
- Output fuses on front of power supply are OK.
- Power fuse on rear of power supply.

SOME UNITS DO NOT RESPOND

Check:
- Are all units on the same output line from the Power supply.
  YES: check the fuse on that power supply output.
  NO: check channel assignment at scroller and at console.
- Leads are four core power cable NOT signal cable
- Maximum of 6 units per power supply output
- Maximum of 24 units per power supply

Check - Has scroll initialisation taken place.
YES: Check thumbwheel settings on each unit and/or desk channel assignment.
NO: Initialisation will not take place unless signal is being received at the scroller or if there is no power to the scroller.
Check for power at scroller by checking if the cooling fan is operating.
NO: Check fuse on power supply or cabling to the scroller.
YES: Try another scroller in the same position, if the new scroller works then there could be a blown fuse within the faulty scroller, check the fuse located on the circuit board inside the scroller. DO NOT put a fuse of any other value than 1 amp in this position. If there is still a fault return the unit to the factory for repair.

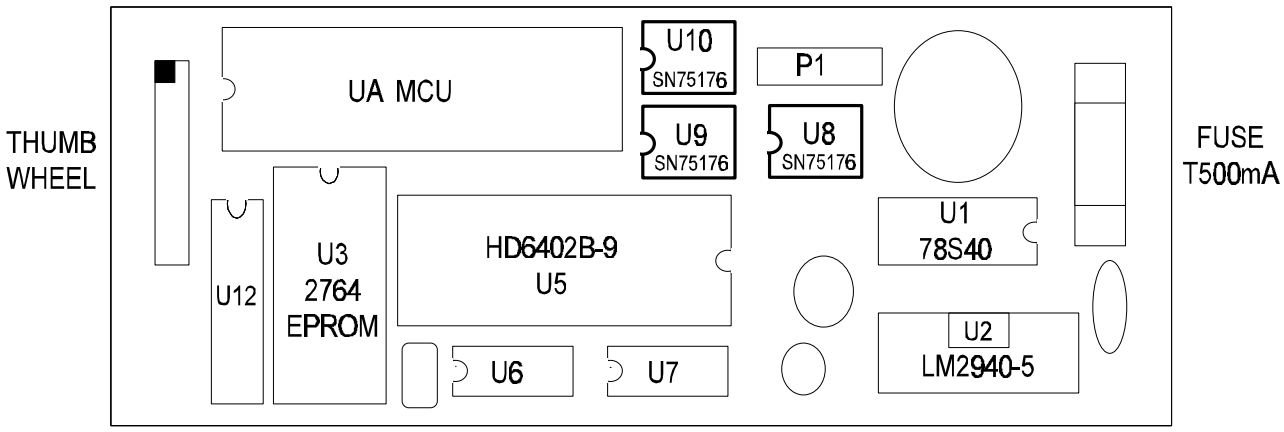
IF FUSE(S) NEED REPLACING USE ONLY SAME TYPE & RATING FUSES

POWER SUPPLY OUTPUT CHANNELS (front)
32mm Type "T" HBC 5A Fuse (or 4A)

POWER SUPPLY MAINS FUSE (rear)
20mm Type "T" HBC 6.3A Fuse / 240V
12A Fuse / 120V

CONTROLLER MAINS FUSE (rear)
20mm Type "T" HBC 250mA Fuse / 240V
500mA Fuse / 120V

UNIT CIRCUIT BOARD (inside unit)
20mm Type "T" HBC 1A Fuse



The input receiver is also prone to damage from earth potential differences and over voltage surges. Again it is on a socket and is the same type of device as the output drivers SN75176 **U10** is the **INPUT RECEIVER.**

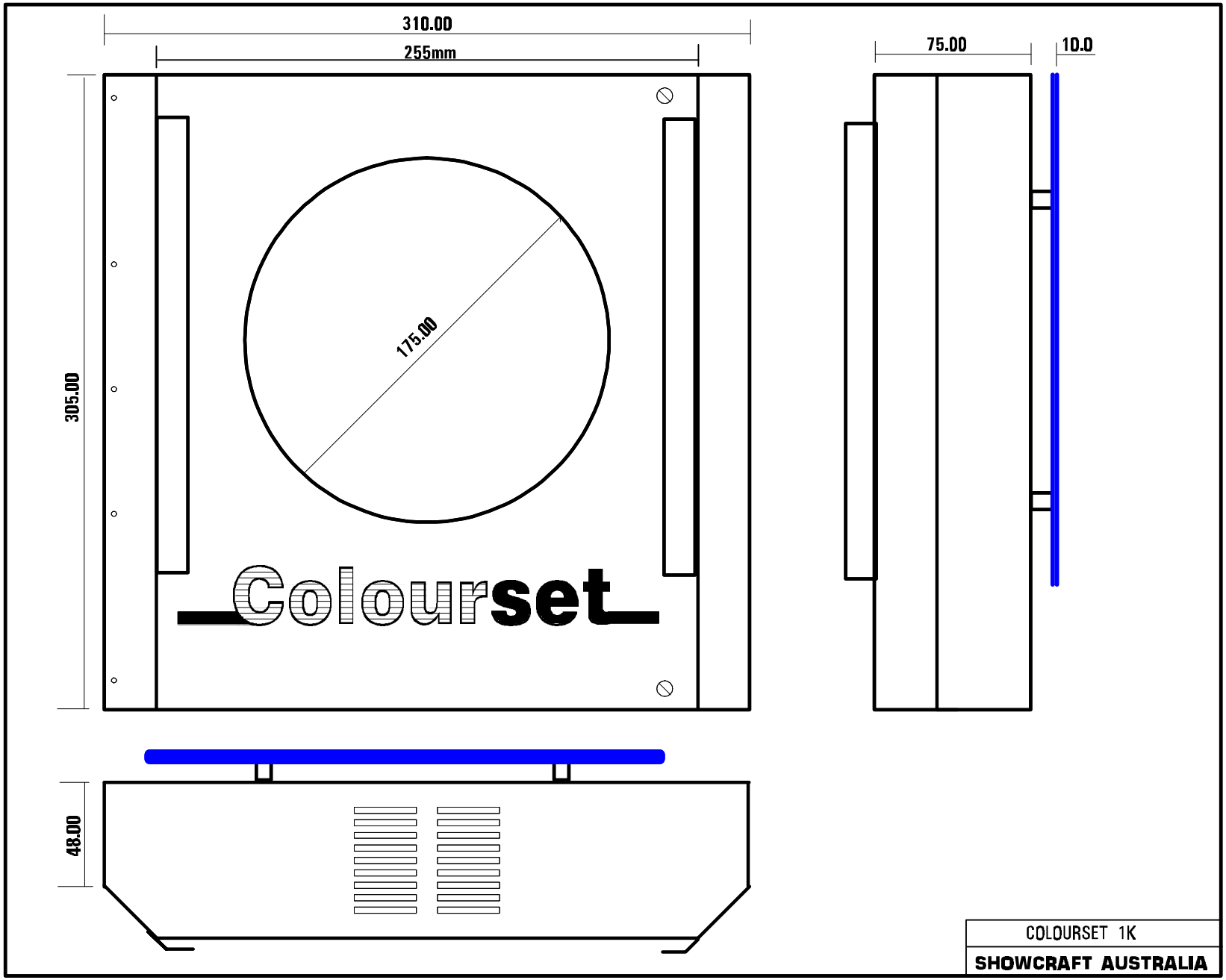
OUTPUT CONNECTORS

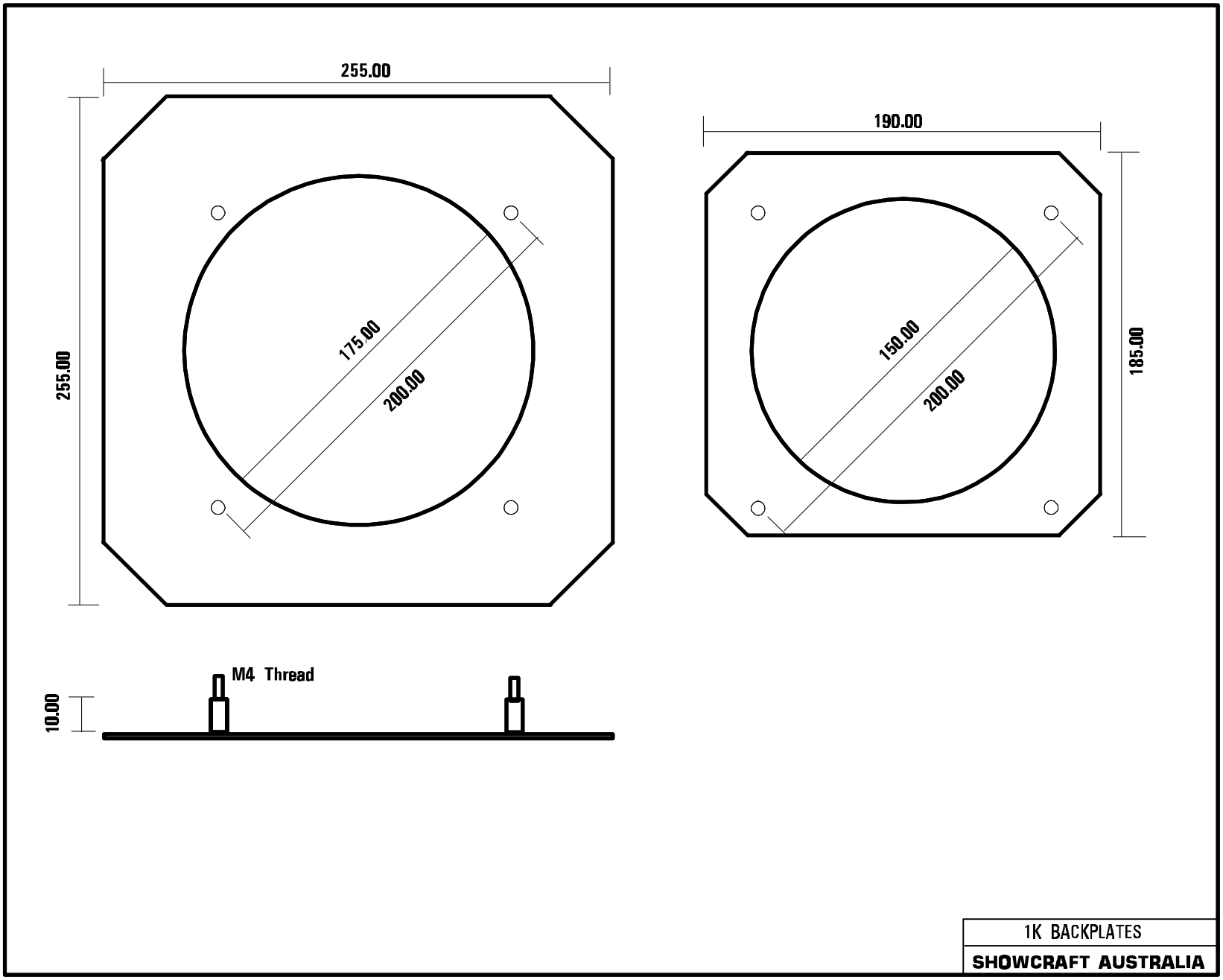
All four output connectors have the same wiring configuration:

PIN 1 - NO CONNECTION
PIN 2 - DATA -
PIN 3 - DATA +
PIN 4 - DC GROUND
PIN 5 - 36 VOLTS DC

INPUT CONNECTORS

The input connector is paralleled pin for pin to the link output connector providing a straight through connection to other power supplies or other devices in the DMX chain. The Colourset power supply has a standard RS485 specification device on the input which represents one load to the system. The input also has two indicator LED's across the line to indicate the presence of signal, these devices are passively connected and will load the the line with the equivalent of 8 loads maximum. The specified drive capability for RS485 spec systems (DMX512 compliant) is 32 loads plus a terminator of 120 ohms.


310.00
255mm
75.00
10.0
175.00
305.00
Colourset
48.00
COLOURSET 1K
SHOWCRAFT AUSTRALIA


255.00
255.00
175.00
200.00
M4 Thread
10.00
190.00
185.00
150.00
200.00
1K BACKPLATES
SHOWCRAFT AUSTRALIA

COLOURSET 2K

SHOWCRAFT AUSTRALIA