

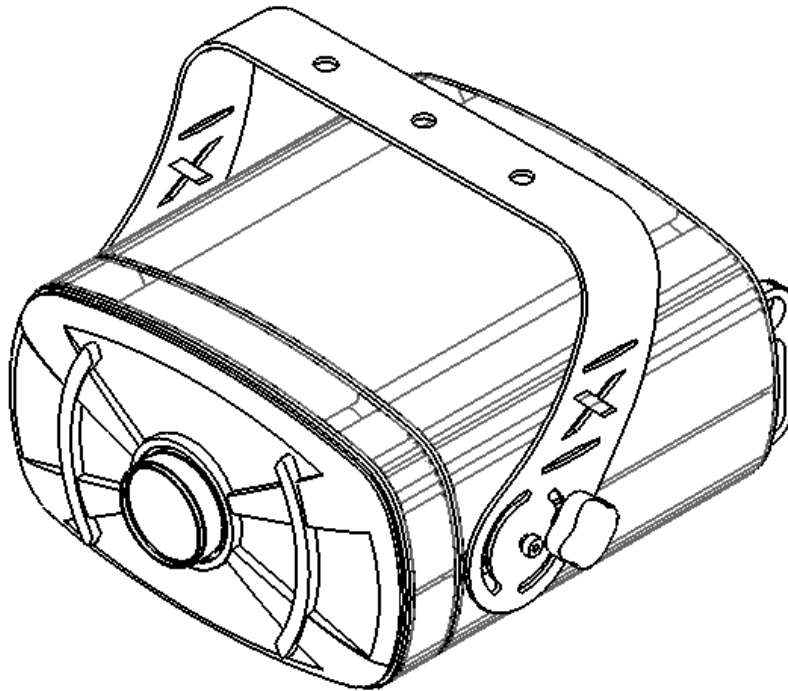
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MANUAL

Introduction

Congratulations on your purchase of the Rosco Laboratories X-Effects 3-D Projector. This modular projector is intended to provide a range of unique lighting effects with high brightness and in a compact package. With the wheel module, these effects include, but are not limited to, light reflecting off water and fire of varying intensities. A variety of lenses provide a wide range of beam angles suitable for any situation. In reality, the effects are limited only to your imagination. As more expansion modules become available for the X-Effects, the possibilities will only increase. Additionally, units currently fitted with an analog control panel can be upgraded to a DMX control panel at a later date.

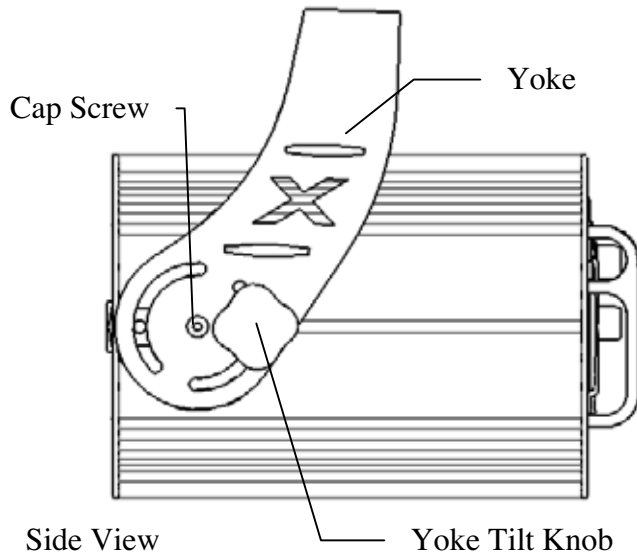
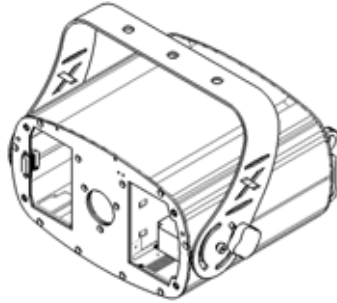


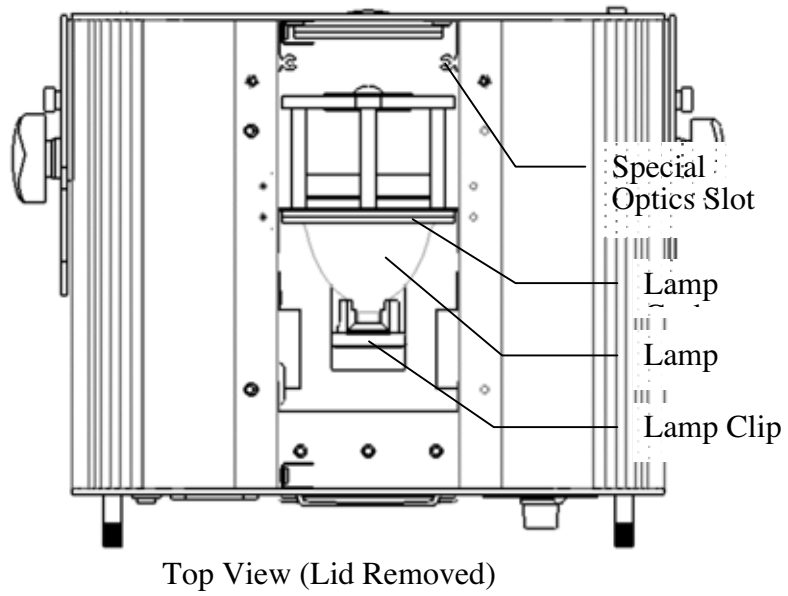
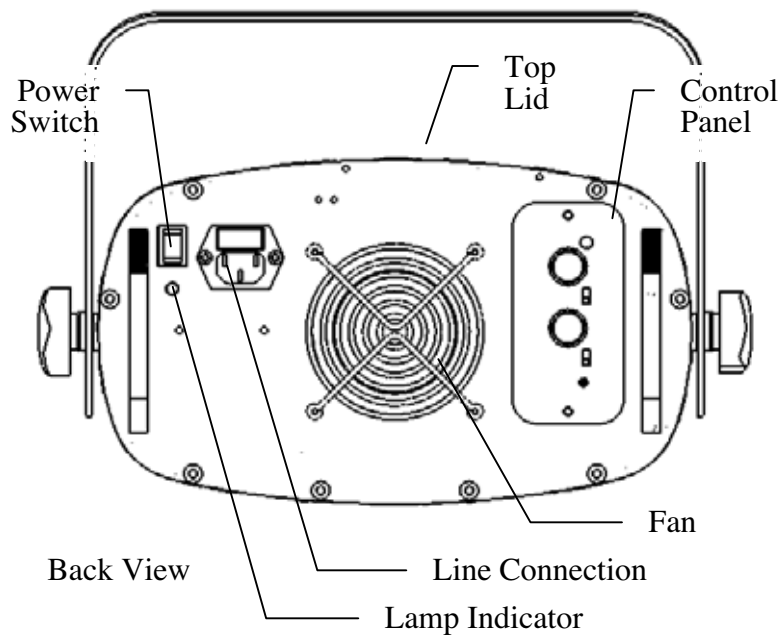
Modules

Base Unit

The base unit contains the lamp, electronic ballast, first-stage optics, and accessory power supply. The yoke attaches to the side of the base unit in slots for positional adjustment. It also has a slot for special optical filters.

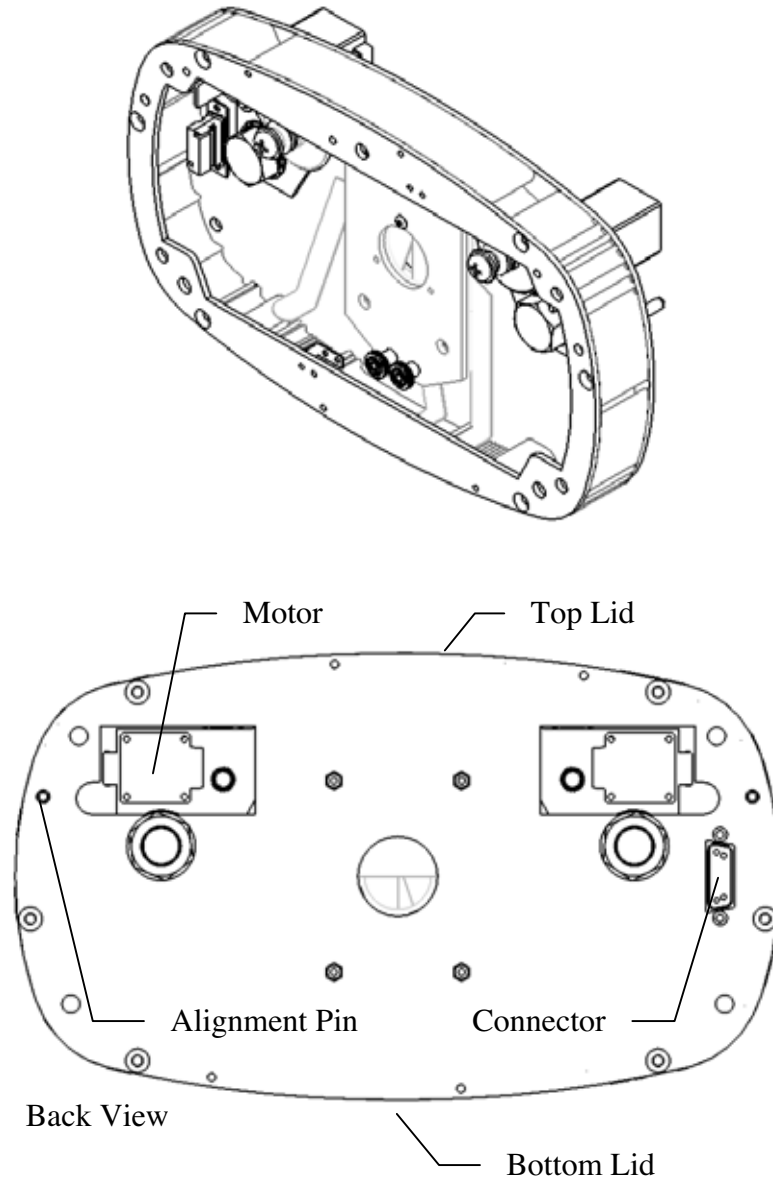
Note: When handling the base unit alone, be careful of the front lens, which extends slightly beyond the front plate and is subject to being scratched.

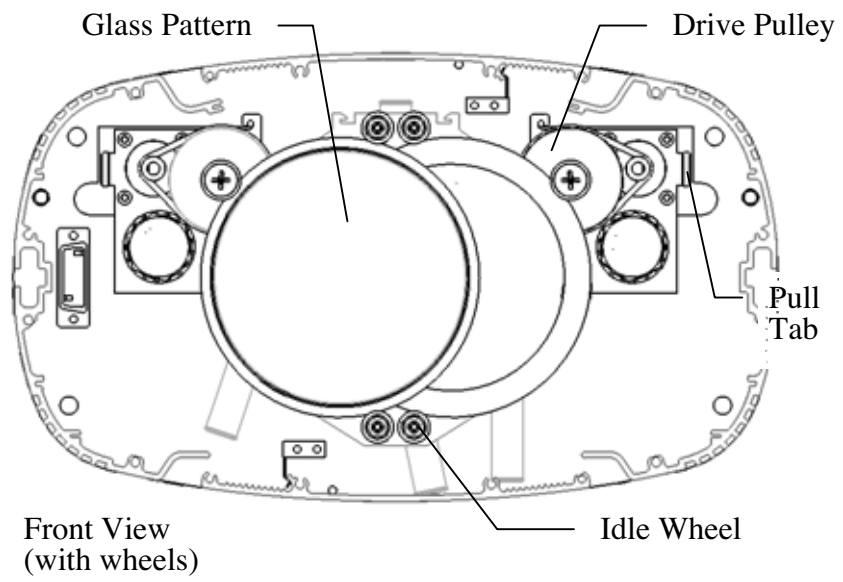
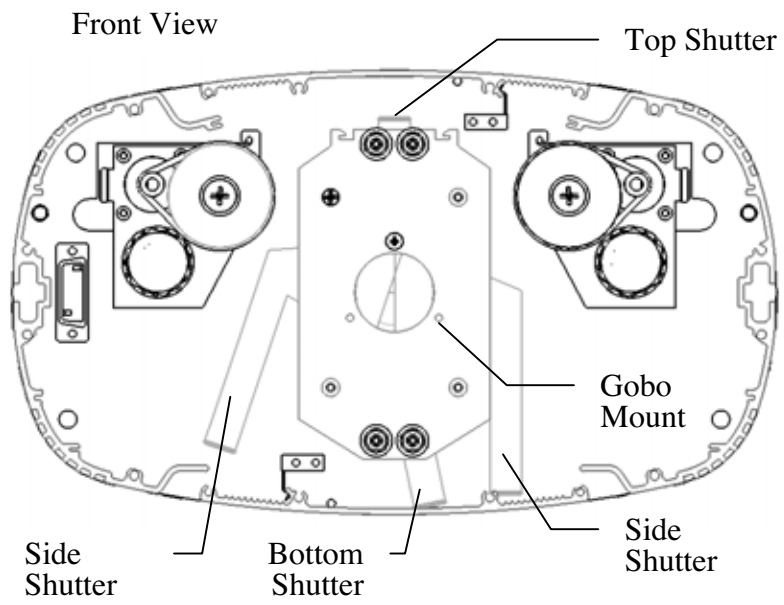




Wheel Module

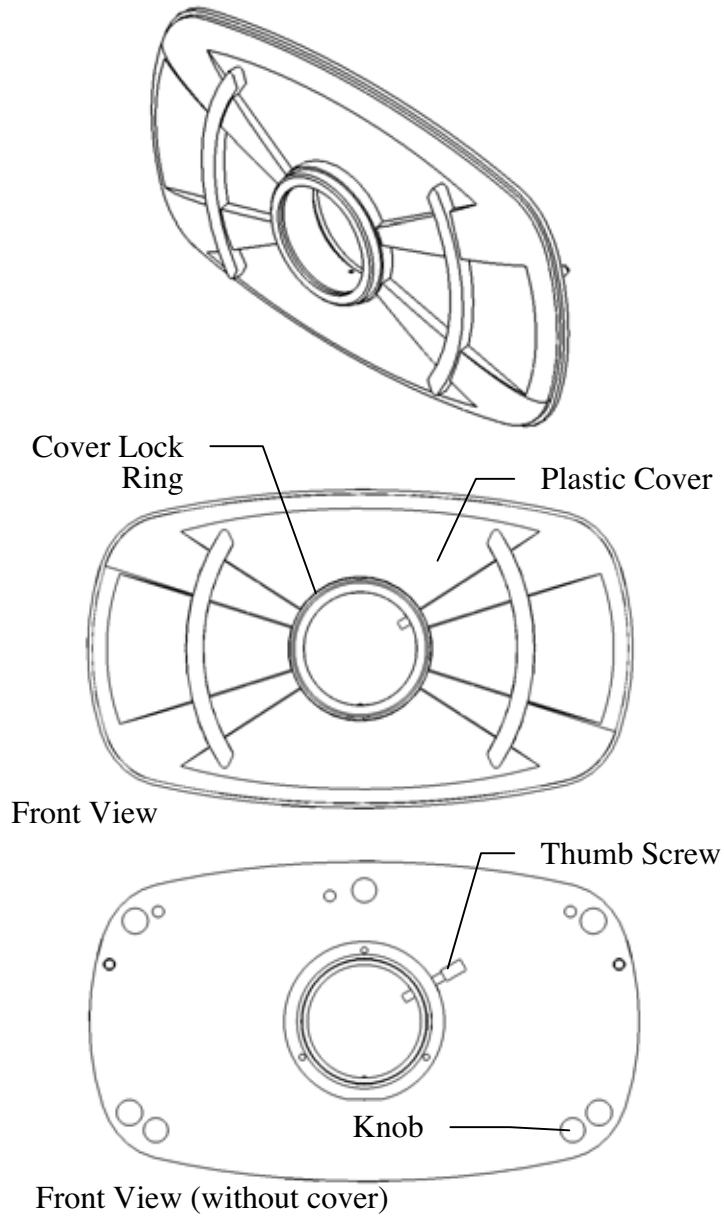
The wheel module is made up of motors for rotating two overlapping patterns. It also has shutters and a slot for placing an E-size gobo.

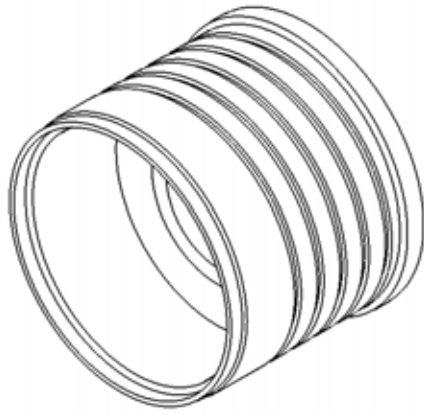




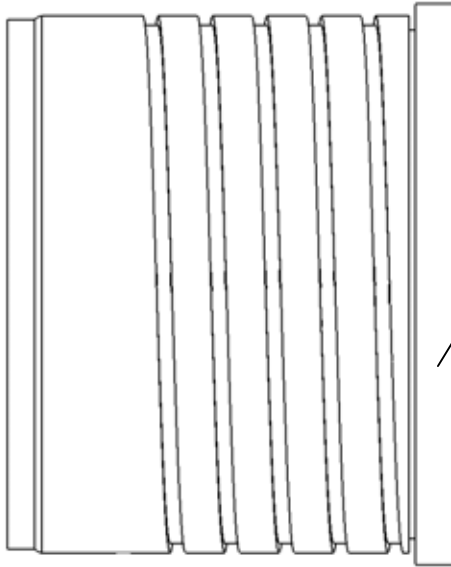
Lens Module

The lens module provides the mounting for the various lens barrels. At this time, there are barrels available in 19°, 30°, 50°, and 70° beam angles. It provides screw focusing and a lockdown knob. The lens barrels themselves also have a slot for inserting a dichroic filter.





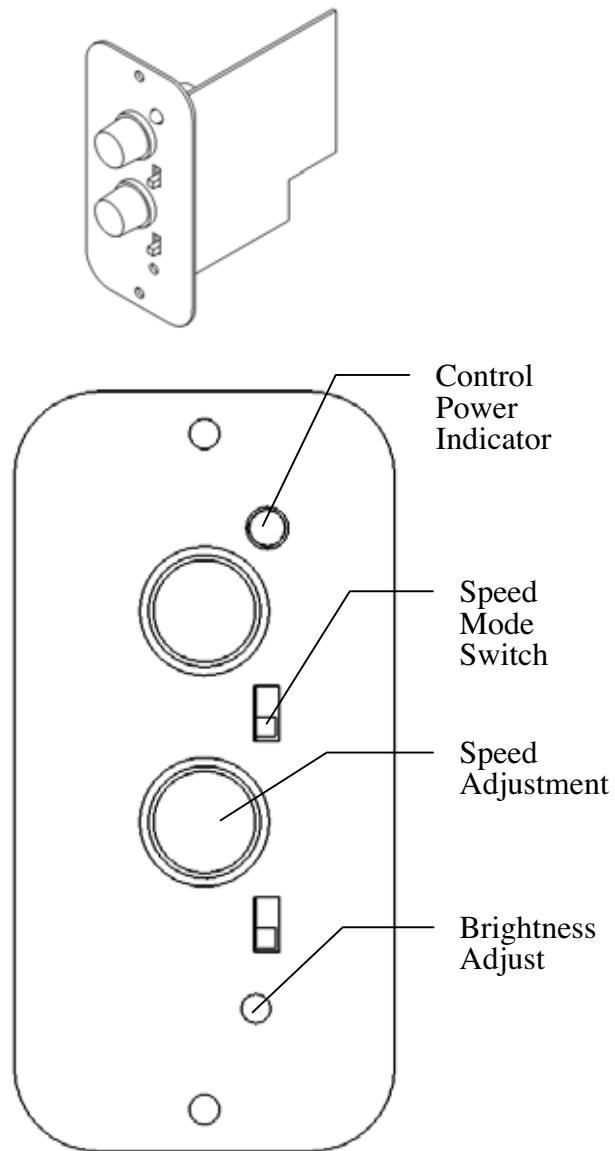
Barrel



Dichroic
Glass
Ring

Analog Control Panel

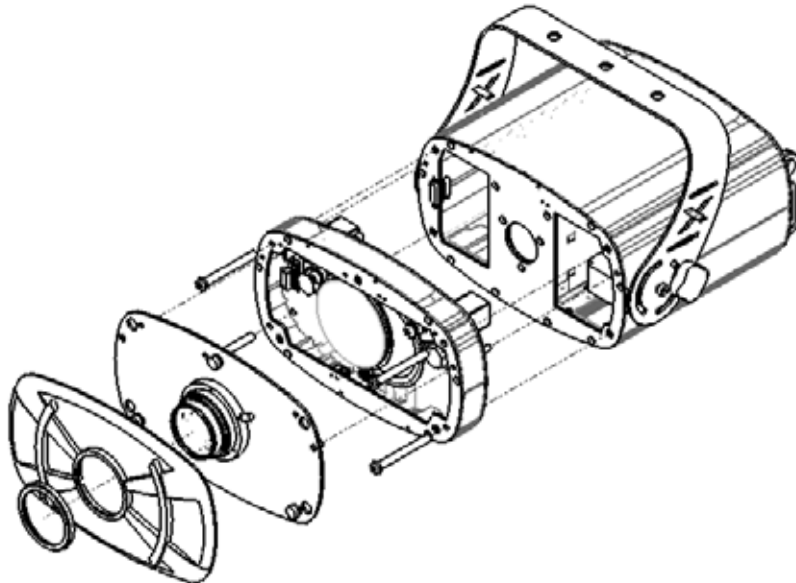
The analog control panel has all of the panel controls and electronics for controlling the dual-wheel module and controlling the electronic dimming of the lamp.



Preparing for Use

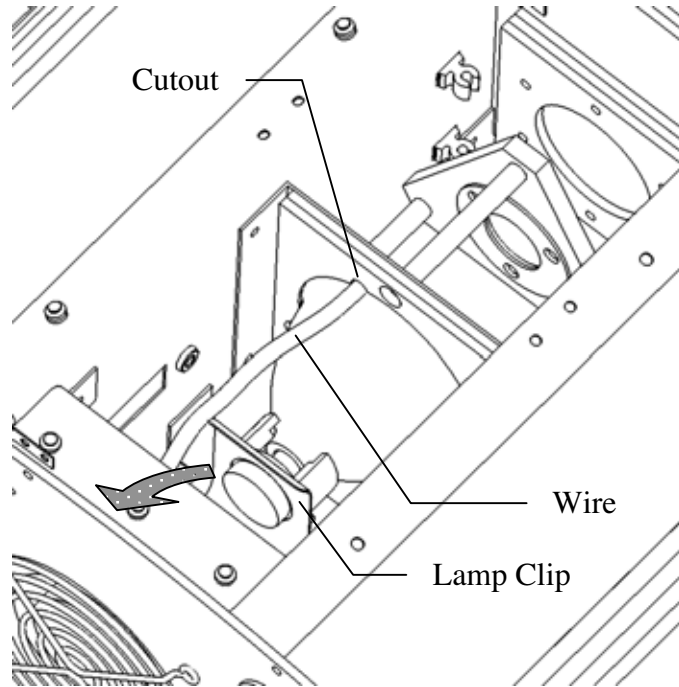
Assembling the Modules

1. Unplug the unit.
2. [Optional] Install patterns and lens barrels as desired.
3. Place the base unit such that the front is facing you.
4. Take the wheel module and hold it such that the alignment pins are facing the front of the base unit. Align the connector (if present) with its mate and the alignment pins with their holes, then push the wheel module onto the base unit. The plates should be flush. Do not force the module if it does not seem to work. Check for obstructions or bent pins.
5. Take the four long #20 pan head Phillips machine screws and insert them through the holes at the four corners of the front of the wheel module. These screws thread into the base unit and should be hand tightened.
6. Remove the plastic cover from the lens module by removing the cover lock ring.
7. Place the lens module onto the front of the wheel module and tighten in place with the three knobs on the front.
8. Replace the plastic cover and cover lock ring.



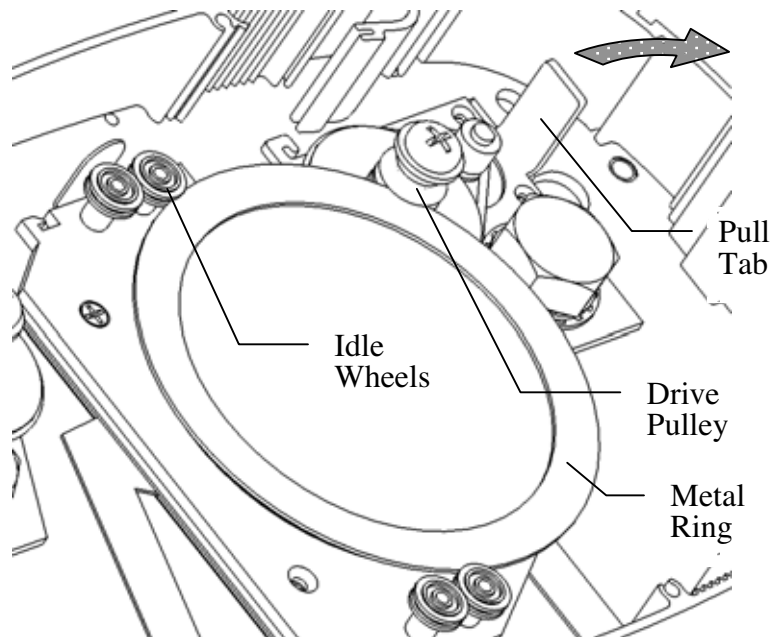
Installing the Lamp (Base Unit)

1. Unplug the unit.
2. Open the hinged lid on the top of the base unit.
3. Pull the lamp clip back away from the lamp gasket. Insert the lamp so that the front of the reflector is seated in the lamp gasket. The wire exiting from the front of the reflector should be positioned in the cutout of the gasket. Release the lamp spring clip to lock the rear of the lamp in place.
4. Attach the connector from the lamp to the connector in the unit. It is a polarized connector and will only connect in one position.



Installing a Glass Pattern (Wheel Module)

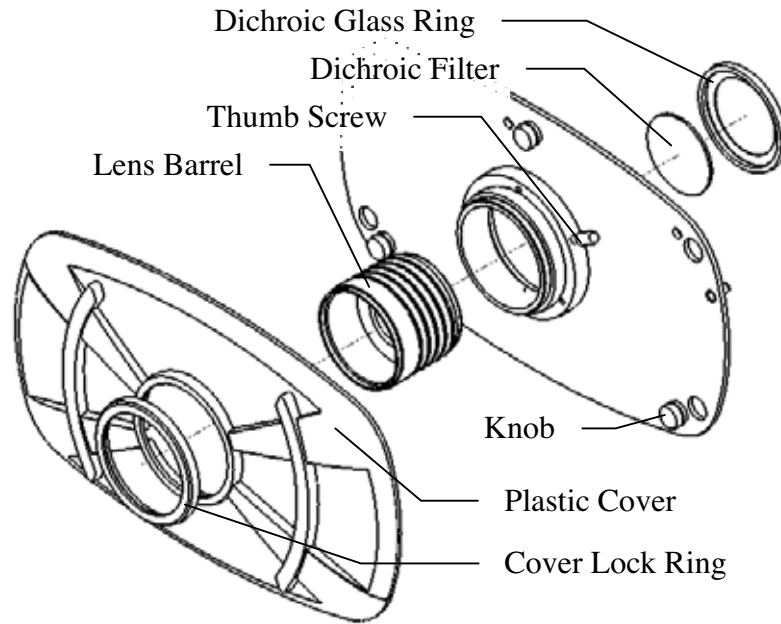
1. Unplug the unit.
2. Unscrew the cover lock ring from the front of the lens module.
3. Remove the plastic cover.
4. Remove the lens module plate from the unit by loosening the three thumb knobs on the front.
5. Look for the pull tabs on the plates with metal pulleys on either side. These pull the plates outward for installing new glass patterns. Once the plate is pulled outward, the pattern should be inserted such that the metal ring sits in the groove in the rubber drive pulley and in the 2 plastic idle wheels on the corresponding side. Once in position, the pull tab can be released.
6. Replace the lens module plate on the unit by lining up the mounting pins, then tightening the three thumb screws.
7. Tighten the thumb screw by hand to hold the lens barrel in position.
8. Replace the plastic front cover.
9. Replace the face lock ring on the front of the unit.



Installing a Lens Barrel (Lens Accessory)

1. Unplug the unit.
2. Unscrew the cover lock ring from the front of the unit.

3. Remove the plastic cover.
4. Remove the lens mount plate from the unit by loosening the three knobs on the front.
5. Loosen the thumb screw on the lens barrel holding ring.
6. Remove the dichroic glass ring from the rear of the lens barrel.
7. Thread the lens barrel into the holding ring (CW screws it in).
8. [Optional] Place a dichroic filter in the rear of the lens barrel.
9. Replace the dichroic glass ring on the rear of the lens barrel.
10. Replace the lens mount plate on the unit by lining up the mounting pins, then tightening the three knobs.
11. Tighten the thumb screw by hand to hold the lens barrel in position.
12. Replace the plastic front cover.
13. Replace the face lock ring on the front of the unit.



Unit Operation (Analog, Wheel, Lens)

Mounting

The yoke angle can be adjusted by loosening the tilt knob on both sides of the unit. In order to slide the yoke back and forth in its track, it is also necessary to loosen the cap screw at the pivot point. When loosening the cap screw, it is strongly recommended to do this prior to hanging the unit to minimize the risk of the unit falling.

The unit can be hung from any C-clamp or other mounting device that uses a $\frac{1}{2}$ " bolt. The three holes in the yoke are provided for this purpose. The use of a safety cable is strongly recommended when hung overhead. Also make sure not to block the top, bottom, or rear vents when mounted.

Powering Up

1. Check to make sure that a lamp is installed.
2. Make sure the power switch is in the off position and the hinged lid on the base unit is fully closed. Also make sure the area in front of the lens is free of combustible materials.
3. Plug the unit in (check electrical specifications to ensure compatibility).
4. Flip the power switch to the on position.
 - a. If there are no lights on the rear of the unit, check the cord and the circuit that the unit is connected to. Also check the fuse in the unit.
 - b. If the control panel lights, but there is no sound or lamp light indication, check that the lid is fully closed (there is a safety sensor on the lid).
 - c. If the control panel lights, and there is a ticking sound accompanied by flashing of the lamp indicator, wait 30 seconds, then turn the unit off. Wait a couple minutes, then try again. If it still does not work, the lamp may need to be replaced.
 - d. If the control panel lights and the lamp indicator comes on, then the unit is operating properly, but it will take a couple minutes for the lamp to warm up.
5. Once the lamp is warmed up, the unit can be adjusted to suit your needs.

Adjusting Brightness

1. Using a small flat screwdriver, turn the adjustment on the control panel to achieve the desired brightness.

Note: Maximum electronic dimming range is 160-200W

Adjusting Focus

1. Unscrew the face lock ring from the front of the unit.
2. Remove the plastic front cover.
3. Loosen the thumb screw on the lens barrel holding ring.
4. Rotate the lens barrel to adjust the focus.
5. Tighten the thumb screw by hand to hold the lens barrel in position.
6. Replace the plastic front cover.
7. Replace the face lock ring on the front of the unit.

Note: It is possible for the lens barrel to come in contact with a pattern while focusing. Do not force the lens barrel if it stops moving or encounters resistance. Proper rotation of patterns may require the lens to be backed off a bit.

Adjusting Wheel Speed and Direction

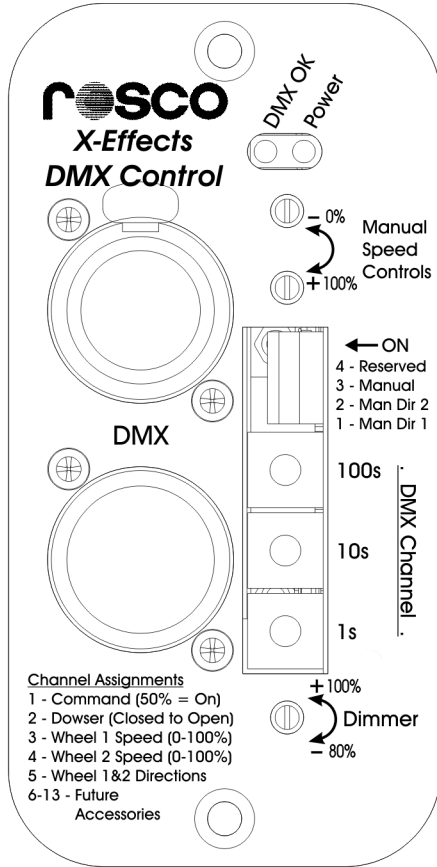
1. The switches on the control panel will select between 3 speed modes: Off, Slow, and Fast. One is for each wheel.
2. Turn the control panel knobs to fine tune the speed. One is for each wheel.
3. The potentiometer knobs can be pulled out or pushed in to change the direction of the wheels.

Adjusting Shutters on the Wheel Module

1. Open the top and bottom hinged lids on the wheel accessory.
2. The top lid gives access to the top shutter.
3. The bottom lid gives access to the bottom and side shutters.
4. Close the top and bottom lids.

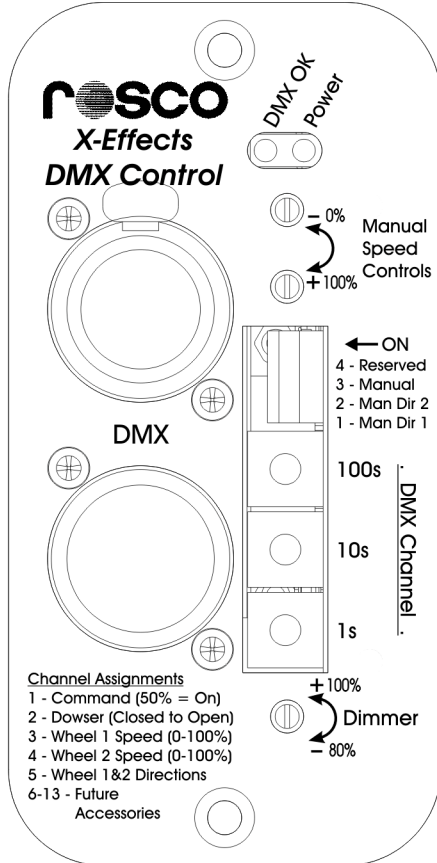
Preliminary Instructions for Using ROSCO X-Effects/DMX

DMX Control Module



The DMX Control Module allows basic manual and full DMX control of the X-Effects and its accessories. While some of the panel controls (Power, Dimmer, and DMX OK) are common to both manual and DMX modes, most are used only in a single mode.

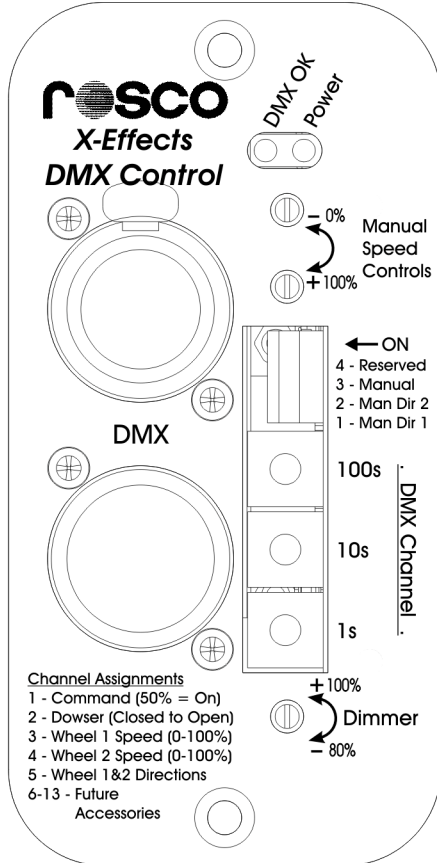
Manual Mode



By turning DIP switch #3 ON, the module is placed into manual mode. This will automatically turn the lamp on and open the dowser (if present). This mode also allows manual control of the dual wheel accessory. The speed of the two wheels can be adjusted by turning the two shafts near the top of the module (full CW is fastest speed, full CCW is stop). The direction of the two wheels can be adjusted by changing the position of DIP switches #1 and #2. Additionally, the brightness of the lamp can be adjusted by the shaft near the bottom of the module with a small flat screwdriver (full CCW is 200W, full CW is 160W).

Note that the DMX OK indicator will light if DMX is connected to the unit, even if the unit is not in DMX Mode.

DMX Mode



By turning DIP switch #3 OFF, the module is placed into DMX mode. The unit can then be part of a standard DMX control system. Standard male and female 5-pin XLR connectors (pin 1 = Ground, pin 2 = Data-, pin 3 = Data+, pins 4&5 are not used by this unit) are provided for easy connection. Furthermore, the unit has pass-through wiring for easy daisy-chaining of multiple units. The DMX OK indicator will be lit if the unit is powered up and receiving a valid DMX stream.

We recommend the use of a 120ohm termination at the end of the DMX cable run for highest reliability and best performance.

The starting address of the unit can be set by the three rotary switches in the middle of the module. Each switch gives one digit in of the starting address, either 1s, 10s, or 100s. If an invalid address is entered (0 or 513-999), the unit defaults to using a starting address of 1.

The unit uses 5-13 DMX channels depending on the accessories used. In the standard configuration with Dowser and Dual-Wheel Accessory, it uses only 5 channels. Additional channels are built into the system for future accessories. The table below describes all functionality.

<i>Channel</i>	<i>Function</i>	<i>Description</i>
1	Command	0-44% (0-113) = No Action 45-49% (114-126) = All Home 50-54% (127-138) = Lamp On 55-59% (139-151) = Lamp Off 60-100% (152-255) = No Action Commands will only activate if level is held for 3 seconds.
2	Dowser	0-100% (0-255) = Full Closed to Full Open
3	Wheel 1	0% (0) = Stop 1-100% (1-255) = 4.5-110RPM (linear)
4	Wheel 2	0% (0) = Stop 1-100% (1-255) = 4.5-110RPM (linear)
5	Wheel Directions	0-25% (0-65) = Wheel 1 CW, Wheel 2 CW 26-50% (66-128) = Wheel 1 CCW, Wheel 2 CCW 51-75% (129-192) = Wheel 1 CW, Wheel 2 CCW 76-100% (193-255) = Wheel 1 CCW, Wheel 2 CW
6-13	Additional Accessories	Exact function depends on accessories used.

Note that the lamp brightness function is not controlled by DMX. It is controlled in the same way as in Manual Mode.

When the unit powers up in DMX mode, the lamp will be off and the shutter will be in the closed position. If no DMX signal is detected, the system will stay in that state. If a valid DMX signal is detected and the unit has finished homing, it will be fully controllable as described above.

Troubleshooting

Power indicator will not light.

Check that unit is plugged in and turned on.
Check that the fuse has not blown.

Power indicator lights, but DMX OK indicator will not light.

Check that unit is properly connected to a DMX controller.
Check cabling.
Check DMX signal with another device.
Check that DMX cable run is properly terminated.

DMX OK indicator flashes erratically and/or unit behaves erratically.

Check that DMX cable run is properly terminated.

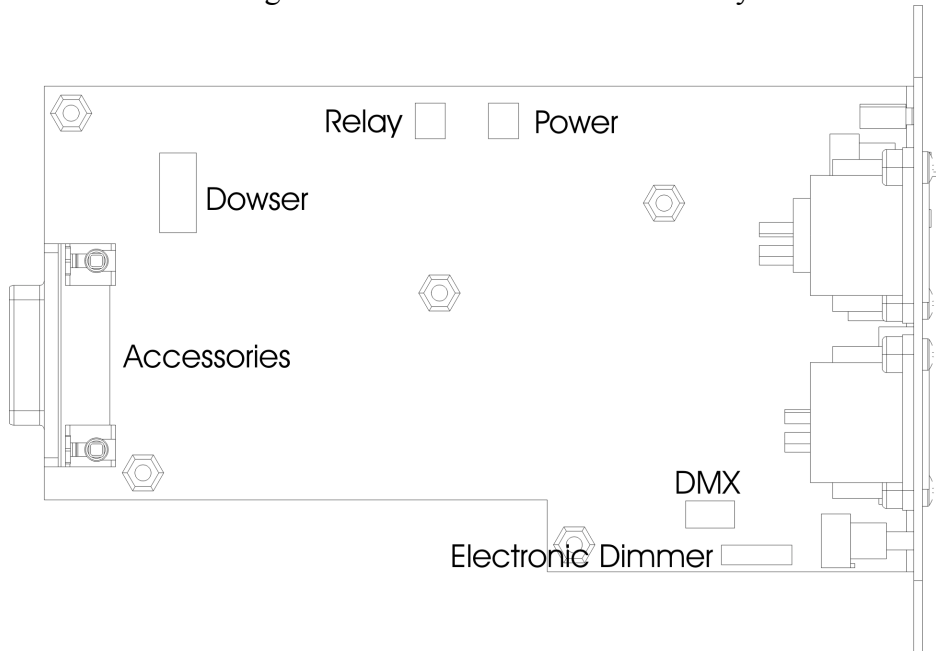
DMX OK indicator lights, but unit does not respond to commands.

Check that DIP switch #3 is in the OFF position.
Check channel addressing.

Unit seems to respond to DMX, but not with all functionality.

Check the mechanics of the missing functionality to ensure that all parts can move freely and belts are properly in place.

If all else fails, the module can be slid partially out of the unit so that the connections can be checked. The diagram below shows the location of key connections.



For the most part, connectors can be matched up to headers on the PCB. The only exception is the relay and power headers, which are identical. The relay cable uses two blue wires while the power cable uses a red/black combination.

Warnings

- ! The light beam near the front of the unit (< 1m / 3.3 ft) is very concentrated. Make sure that no object or person comes into the light beam at this range as burns or fire may result.
- ! The top lid of the unit may become hot to the touch during operation. Contact during or immediately following operation may result in burns.
- ! The lamp is subject to high temperatures and pressures during operation. Do not attempt to operate unit with lid open. Also do not attempt to handle lamp within 1 hour of operation.
- ! High voltages are produced when the unit attempts to strike the lamp. Only apply power to the unit when a lamp is attached, properly seated in the unit, and the lid is closed.
- ! High voltages and stored energy are present inside the unit. Only trained service personnel should engage in repairs or replacements beyond the modules or lamp.
- ! At very cold temperatures the lamp may need to warm up close to room temperature before it will properly strike.
- ! Units in outdoor settings may need to be shielded from the elements and/or heated. There are commercially available enclosures that can serve this purpose, please call Rosco for more information. 1-800-767-2669

Specifications

Mechanical Specifications

Base Unit Size w/o Yoke: 9.75”L x 7”H x 14.37”W
248mm x 178mm x 365mm
Yoke Mounting Distance: 6.57”/167mm to mounting plane from pivot
Wheel Module Length: 1.5”/38mm
Lens Module Length: 1.27”/32.4mm (does not include barrel)
Complete Unit Weight: 18.1 lbs/8.21 kg

Electrical Specifications

Line Connection

90-264VAC 47-63Hz
0.4A @ 115VAC, 0.2A @ 230VAC
IEC 320 Grounded Outlet with Fuse
Fuse – 5x20mm, 5A, 250V, Slo-Blo
Power Factor Correction on Lamp Ballast

Accessory Power Supply

24VDC @ 60W Max

Self-Protection

Internal Thermal Protection on All Internal Electronics
Short-Circuit Protection on Accessory Power Supply
Internal Fan

Environmental

50C Maximum Ambient

Lamp Specifications

Use only an USHIO 200W EmArc Lamp with Ellipsoidal Reflector (SMR200 D1). Failure to do so may damage the unit and void the warranty. Maximum electronic dimming is to 160W.

Wheel Module Specifications

Wheel Speeds

At High Speed: ???-??? RPM
At Low Speed: ?1 RPM

Wheel Module Gobo

X-size patterns – Metal or glass in bezel

Aperture

1.04”/26.4mm Between Shutter Sets

Lens Module Specification

70° Lens Barrel

Focal Length: 18mm

50° Lens Barrel

Focal Length: 27mm

30° Lens Barrel

Focal Length: 46.7mm

19° Lens Barrel

Focal Length: 80mm

Limited Liability Warranty

Rosco products are covered by a limited liability warranty from defects in material and workmanship. This warranty does not apply if, in the judgement of Rosco, the product fails due to damage from shipment, handling, storage, accident, abuse or misuse, or if it has been used or maintained in a manner not conforming to product's instructions, has been modified in any way, or has a defaced or removed serial number. Repair by anyone other than Rosco or a qualified Dealer voids this warranty. In accordance with the terms and conditions of this warranty, Rosco's liability is limited to the product itself, up to the full purchase price of the good's.

1 Year Parts and Labor Service Warranty

The Rosco X-Effects Projector is covered by a 1 year parts and labor warranty. This warranty covers replacement and repair at the discretion of Rosco on all parts excluding the lamp (Ushio Em Arc) and the supplied X-size effects discs. If product needs repair or return, an RMA (Return Merchandise Authorization) is required, contact Rosco Customer Service at 1-800-767-2669. Any repair units received after their 1 year warranty has expired will be repaired and billed to the customer in full including shipping charges.