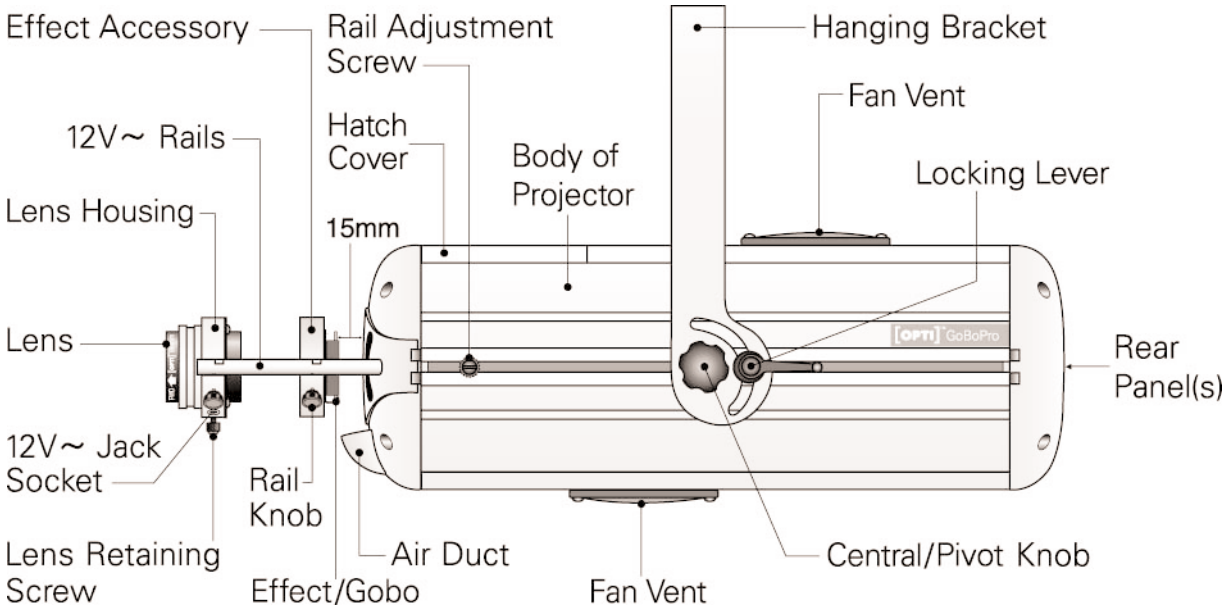
GOBO RANGE USER GUIDE - GETTING STARTED

Using a GoBoShow or GoBoPro could not be easier. To help you get started this leaflet gives a brief overview and adds a few simple ideas for effective gobo projection. This leaflet is by no means a definitive guide only a brief introduction to some of the potential applications and accessories available at the time of going to press. A starting point from which you can explore the possibilities of effects projection with the best equipment that you can buy.

For more detailed information please consult the manual or instructions for the Projector and Effect Accessories before use.

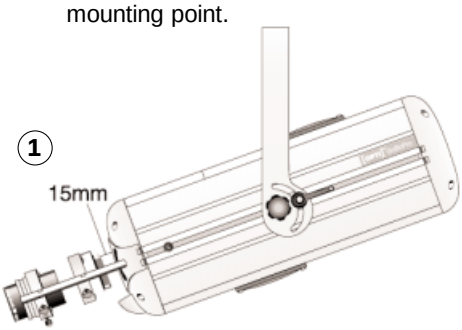


The illustration above is a basic key to some of the terminology used in the manual, instructions and this leaflet.

MOUNTING

There are three methods of mounting:

1. Suspended with the mounting bracket securely fixed to a suitable mounting point.

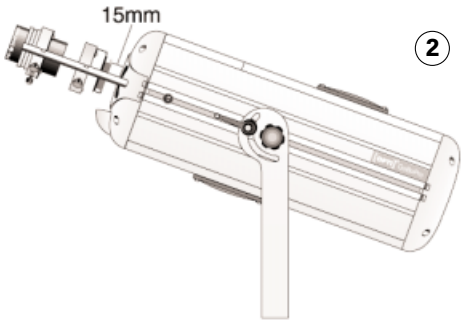


IMPORTANT

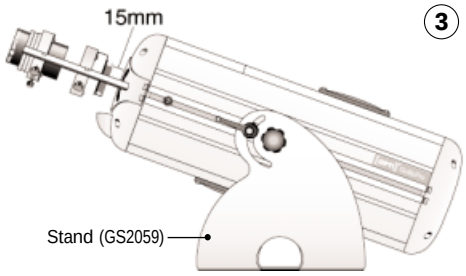
If the projector is fixed above head height OPTI recommend that it should also be secured with a Safety Chain (not supplied).

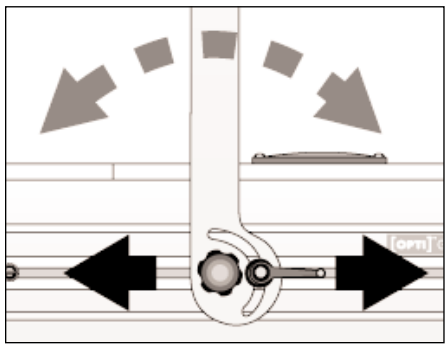
2. Bolted to a flat surface with the bracket under the projector.

   For this the hanging bracket needs to be removed, by undoing the pivot knobs and locking levers, and replaced under the projector.



3. For extra stability or 'freestanding' the standard hanging bracket can be replaced with a Stand (GS2059).





Adjusting the mounting bracket

There are two types of adjustment both achieved by loosening the central/pivot knobs and locking levers.

1. Rotated on it's axis (to adjust angle).
2. Moved along the body of the projector (to adjust balance).

POWER SUPPLY

230 or 240V~ 50Hz, 120 or 100V~ 60Hz

Mains supply is via the mains input socket located on the rear panel. The IEC power cable supplied is usually fitted with a mains plug. Where a mains plug is not fitted please follow local wiring codes and check that the unit is compatible with supply (European & American are shown opposite).

To turn on the projector, on models without a switch, simply plug in the IEC lead. Models fitted with a switch click to the 'ON' position marked I.

WARNING

This appliance must be earthed at all times.

Wiring of the plug

European Colour Coding

GREEN/YELLOW	>	green, green yellow or 'E' terminal.
BLUE	>	black or 'N' terminal.
BROWN	>	red or 'L' terminal.

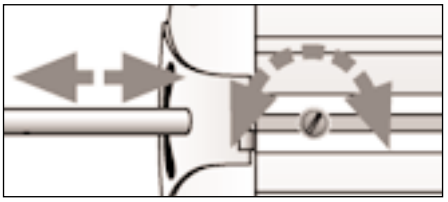
American Color Coding

GREEN/YELLOW	>	ground terminal.
WHITE	>	neutral terminal.
BLACK	>	live terminal.

ADJUSTING THE 12V~ RAILS

In order to accommodate a larger lens, extra Effect Accessories and/or Mirrors it may be necessary to adjust the the 12V~ Rails.

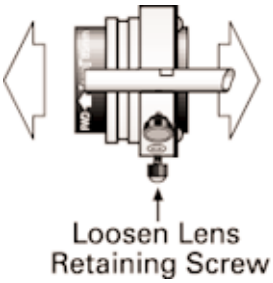
1. Loosen the Rail Adjustment Screws on each side of the projector.
2. Slide both rails, in or out, to the desired position.
3. Tighten the Rail Adjustment Screws taking care not to over tighten.



LENSES & FOCUSING

The GoBoShow & GoBoPro come with an 85mm focal length 48.5mmØ lens as standard. 45mm, 60mm, 120mm and 150mm are also available at 48.5mmØ.

The lower the focal length (e.g. 45mm in comparison to an 85mm) the wider the inclusive lens angle and so the larger the projected image over the same distance.



To adjust focus:

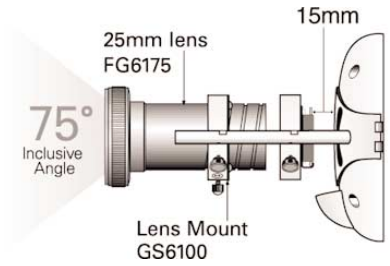
1. Loosen the Lens Retaining Screw.
2. Slide the Lens back or forth until the desired focus is achieved.
3. Tighten the Lens retaining Screw.

K Range Lenses

The GoBoShow and GoBoPro can also be fitted with 52.5mmØ lenses from the K Range, like these illustrated.

The 25mm focal length lens (FG6175) requires a Lens Mount (GS6100).

The 85-210mm Zoom lens (FG6200) requires a Lens Mount (GS6100) and an additional Lens Support (GS6101).



Lens Calculations

The formulae given enable the correct focal length lens selection (1) for a known projection distance and object size (the image on the glass gobo) to achieve the desired projected image size. They also enable cross calculations to determine unknown factors from the known facts. e.g. what the projected image size will be (3) using the lens, object size and projection distances available or what object size is needed (4) on the gobo to achieve the desired image size etcetera. All dimensions must be in millimetres.

1 $\text{FOCAL LENGTH} = \frac{\text{PROJECTION DISTANCE}}{\text{IMAGE SIZE}} \times \text{OBJECT SIZE}$

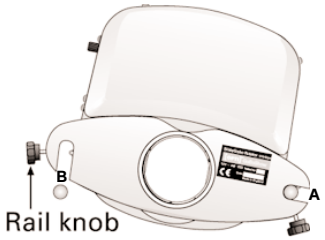
2 $\text{PROJECTION DISTANCE} = \frac{\text{IMAGE SIZE}}{\text{OBJECT SIZE}} \times \text{FOCAL LENGTH}$

3 $\text{IMAGE SIZE} = \frac{\text{PROJECTION DISTANCE}}{\text{FOCAL LENGTH}} \times \text{OBJECT SIZE}$

4 $\text{OBJECT SIZE} = \frac{\text{IMAGE SIZE x FOCAL LENGTH}}{\text{PROJECTION DISTANCE}}$

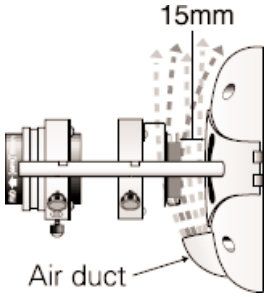
EFFECT ACCESSORIES

All GoBoShow and GoBoPro Effect Accessories fit onto the 12V~ rails of the projector between the body of the projector and the Lens Housing.



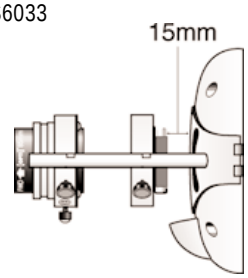
Fitting an Effect Accessory

1. Loosen the rail knobs adjacent to slots A and B to ensure that they are not proud of the casing.
2. Clip on the horizontal locating slot, A, and push home past contact spring.
3. Locate the upright locating slot, B, over the other rail and push home past the contact spring.
4. Slide the effect to 15mm from the body of the projector at 90° to rails. **Important to ensure the effect receives maximum cooling from the air duct**.
5. Tighten both rail knobs securely.
6. To remove or adjust position loosen both rail knobs.

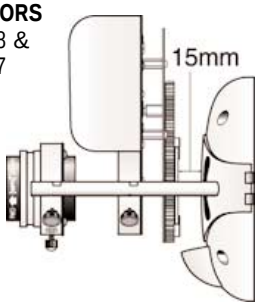


SINGLE EFFECT ACCESSORIES

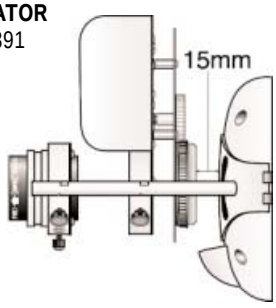
SLIDE/GOBO HOLDER
GS6033



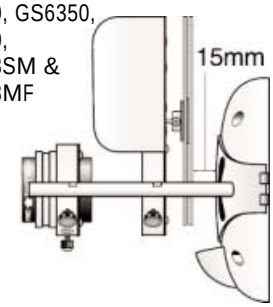
SLIDE/GOBO ROTATORS
GS6028 & GS6037



50mm CASSETTE ROTATOR
GS6391

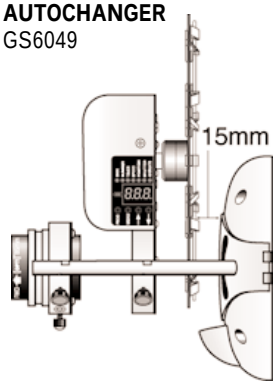


WHEEL ROTATORS
GS6340, GS6350, GS6360, GS6378SM & GS6378MF

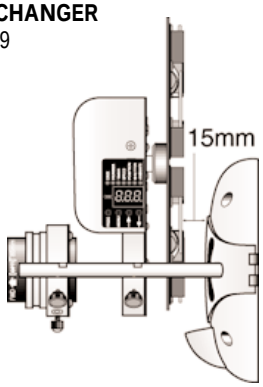


MULTI EFFECT AUTOCHANGERS

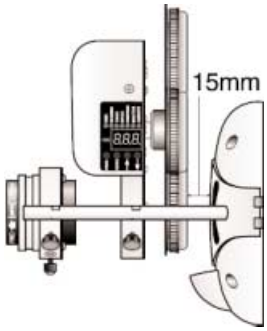
EIGHT STATIC GOBO AUTOCHANGER
GS6049



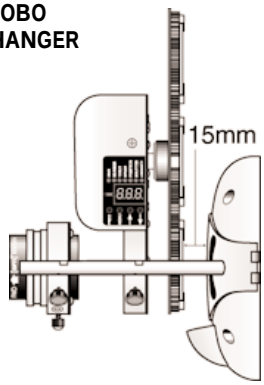
SIX STATIC SLIDE/GOBO AUTOCHANGER
GS6039



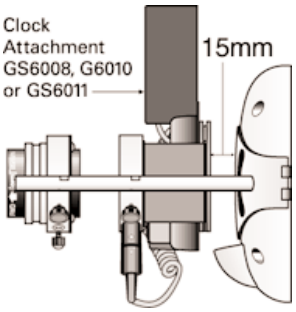
FOUR 50mm CASSETTE AUTOCHANGER
GS6386

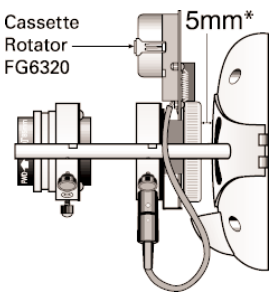


FOUR ROTATING SLIDE/GOBO AUTOCHANGER
GS6035



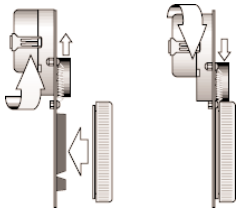
ADAPTORS





Fitting a 3" Effect Cassette onto a Solar Cassette Rotator

1. Twist motor to raise drive wheel.
2. Push cassette firmly home over metal flanges on back plate.
3. Release motor so that drive wheel makes contact with the Cassette.



Power Supply

Both Adaptors have the same power supply / plug arrangement.

2 pin 12V~ Solar Plug fits into Jack Plug Connector (GS6012) which then fits into the 3.5mm Jack Plug Socket on either of the GS Adaptors.

CLOCK ADAPTOR GS6007
Standard with GS Clock Attachments

SOLAR GATE ADAPTOR GS6319
Also fits all other Single Solar Effect Holders and Rotators

* For 3" Cassettes only the gap should, as a safety precaution, be reduced to a maximum of 5mm.

Sunlight through trees

FIG 1 A number 2 Distortion Wheel on a Variable Speed Wheel Rotator (GS6378SM) in front of a 3" dot cassette (FG7141) on a Solar Cassette Rotator (FG6320) fitted into a Solar Gate Adaptor (GS6319), creates the effect of sunlight through trees.

Alternatively a 6" dot wheel (FG7078) may be used on a Solar Wheel Rotator (FG6340) in place of the cassette.

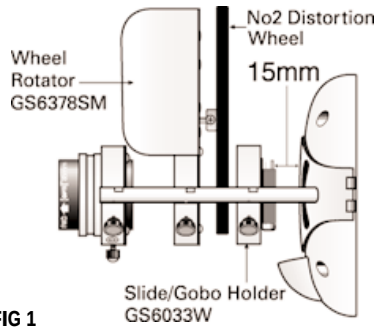
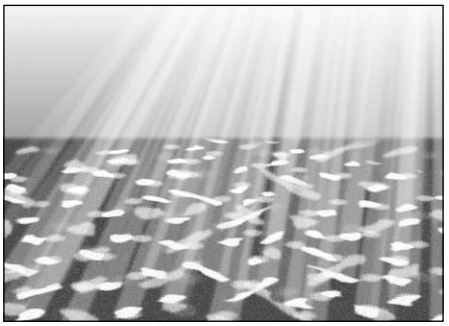


FIG 1



Light on water

FIG 2 A number 2 Distortion Wheel fitted onto a Variable Speed Rotator (GS6378SM) with an Extension Shaft (GS6340E) in front of a Number 3 Distortion Wheel fitted onto a 1/2 rpm Wheel Rotator (GS6340) with an Extension Shaft creates the effect of light on water.

In order to fit the Wheel Rotator, as shown, the Lens Housing must be turned upside down to get the lens close enough to focus properly.

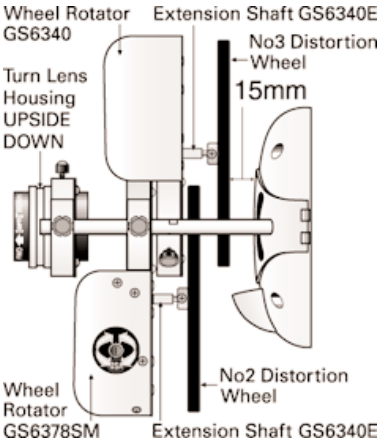
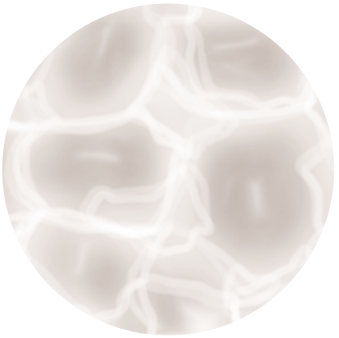


FIG 2



Rippling images

FIG 3 A number 1 Distortion Wheel fitted onto a Variable Speed and Direction Wheel Rotator (GS6378SM) with an Extension Shaft (GS6340E) in front of a gobo creates the effect of the projected image being underwater or a flag blowing in the wind.

In order to fit the Wheel Rotator, as shown, the Lens Housing must be turned upside down to get the lens close enough to focus properly.

The degree of ripple can be varied by adjusting the speed and/or direction of wheel rotation.

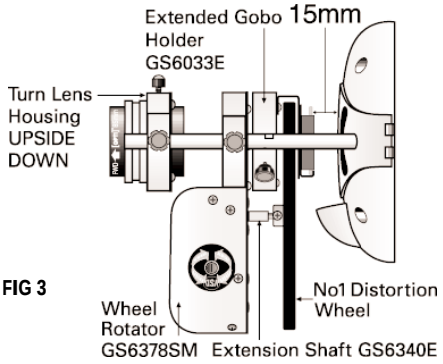


FIG 3

Clouds through windows

FIG 4 A Cloud Wheel (FG7045) fitted onto a 1/2 rpm (GS6340) or Variable Speed and Direction Wheel Rotator (GS6378SM) with an Extension Shaft (GS6340E) in front of a window gobo creates the effect of looking at the sky, with the clouds passing by, through a window.

In order to fit the Wheel Rotator, as shown, the Lens Housing must be turned upside down to get the lens close enough to focus properly.

Other shaped widows, like port holes for instance, can be combined with other 6" Effect Wheels, like Deep (FG7049), to create the effect of being in a vehicle moving through an environment.

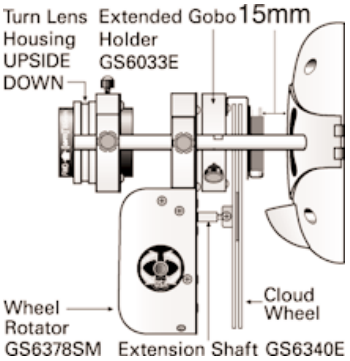


FIG 4

Distortion of Standard Effects

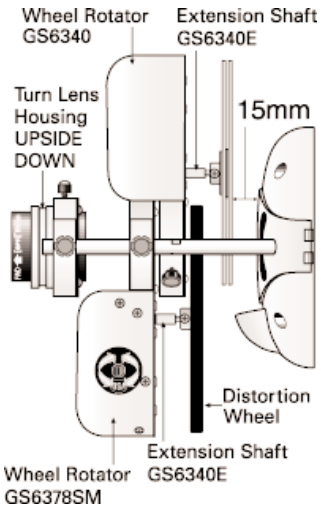
Flickering Flames

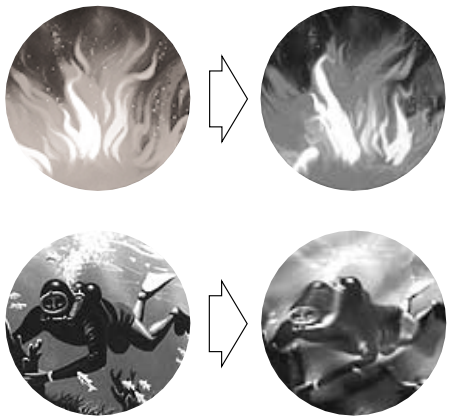
FIG 5 A number 2 Disortion Wheel fitted onto a Variable Speed and Direction Wheel Rotator (GS6378SM) with an Extension Shaft (GS6340E) in front of a Fire Wheel (FG7053) fitted onto a 1/2 rpm Wheel Rotator (GS6340) creates flickering flames.

Underwater

FIG 5 A number 1 Distortion Wheel fitted onto a Variable Speed and Direction Wheel Rotator (GS6378SM) with an Extension Shaft (GS6340E) in front of a Deep Wheel (FG7049) fitted onto a 1/2 rpm Wheel Rotator (GS6340) creates an underwater effect.

FIG 5





Adding Colour

Examples

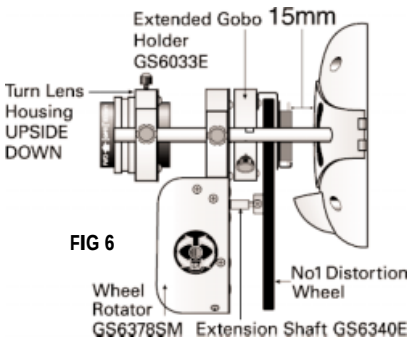


FIG 6

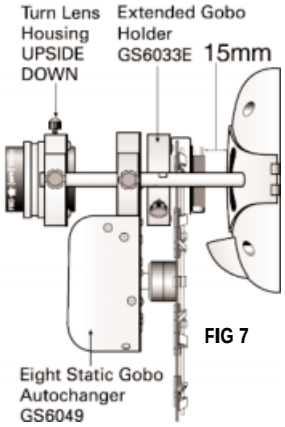


FIG 7

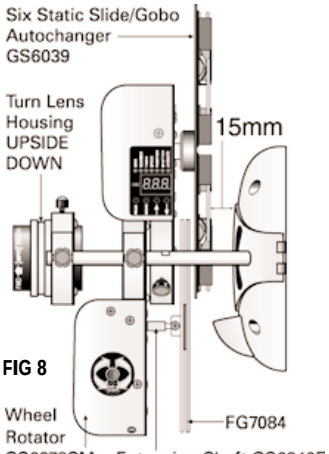


FIG 8

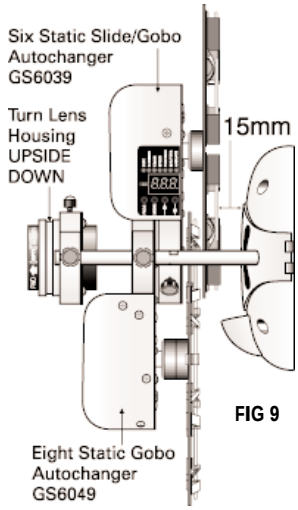


FIG 9

FIG 6 A Liquid Wheel in front of a 50mm Gobo or 3" Effect Cassette creates a constantly moving multi colour effect washed over or through the projected image. An Organic Wheel (FG7083) can also be used to add colour or a Distortion Wheel to ripple.

FIG 7 An Eight Gobo Autochanger (GS6049) with a set of 50mm Coloured Dichroic Glass (GS7400) creates a programmable colour changer.

FIG 8 Six Static Slide/Gobo Autochanger (GS6039) colour changed using a Spektraflash Wheel (FG7084).

FIG 9 Six Static Slide/Gobo Autochanger (GS6039) colour changed using an Eight Gobo Autochanger (GS6049).

Moving the image

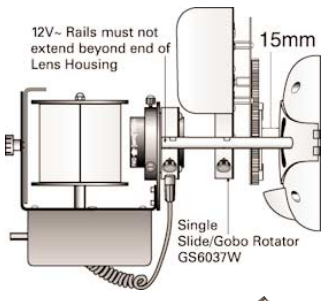
Once Effect and Effect Accessory combination has been selected the projected image can be deflected with a **Deflector Mirror** (GS6310) or moved around using a motorised mirror.

The **Barrel Mirror** (GS6315) continuously pans a repeated image in one direction.

The **Circular Motion Mirror** (GS6316) moves an image around in an adjustable orbit.

The **Linear Motion Mirror** (GS6317) pans an image back and forth over adjustable distance.

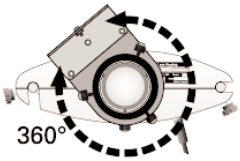
The **X-Y Mirror** (GS6314) can move a projected image in any direction and pattern at variable speeds and can also be DMX controlled.



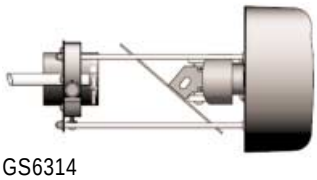
GS6315

GS6317

GS6316



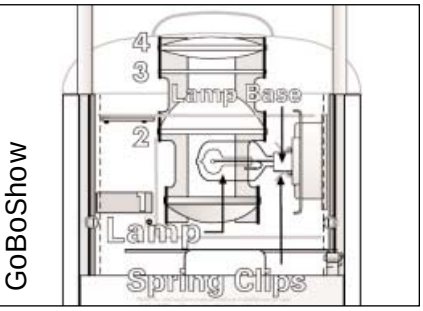
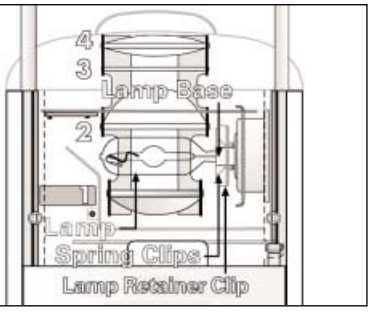
All mirrors adjust through 360° on the lens axis, except the X-Y which operates through 360°.



GS6314

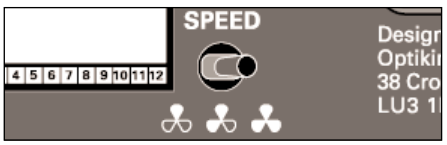
TROUBLESHOOTING

Disconnect unit from power supply and allow lamp to cool before carrying out any checks on the projector.

PROJECTOR	SUGGESTED ACTION
Unit not working.	Check mains supply and power cable connections. Check condition and rating of fuse in mains inlet. Safety cut out not operating because hatch cover not fully closed. Is there a lamp securely in place? If still not working contact your dealer with serial number of unit.
No light output but fans running.	Has unit been allowed to warm up? Discharge lamps can take 5 minutes to achieve full brightness after ignition. Check lamp is not broken i.e. no visible breakages inside or outside of the lamp envelope. Please note that clouded lamp glass does not necessarily mean a faulty lamp. This can result from running for short periods of time e.g. 10 minutes. The lamp glass will clear when run for 30 minutes. Check lamp is fully inserted into base. Change lamp if necessary, as detailed in projector instructions, **taking care not to touch the glass envelope of the lamp with bare hands.** Has the unit been running for more than 15 minutes? The projector is fitted with a safety cut-out which activates if the lamp has not ignited within this time. If fitted with a shutter, is shutter closed?
Low output/poor image uniformity.	Possible lamp misalignment. Follow relamping instructions for safe access to lamp area then, check lamp is correctly seated in lamp holder. Also, check optical components are correctly seated in lens frame and are not damaged. **Optical System Key** (from above with hatch cover removed) 1. Mirror. 2. Primary Lens. 3. Heat Filter. 4. Secondary Lens. GoBoShow  GoBoPro 
Unit cuts out.	Possible overheating. Unit will cut out if run with a surrounding temperature greater than 45°c and will restart after about 15 minutes when cooled. If no action is taken to reduce the surrounding temperature this cycle will repeat and shorten lamp life. Is the unit in a confined space? Is there a good circulation of air around the unit? Is the top fan vent grill obstructed or dirty? Check that the top fan is running. If not switch off and contact your dealer.

IMPORTANT

All OPTI Kinetics Effects Projectors are designed for indoor use only.

ACCESSORY	SUGGESTED ACTION
Not working.	Is effect accessory correctly connected to the projector rails (which provide power)? See effect fitting instructions. Is any metalic object shorting (across) the rails? If there is, a safety device will turn off rail power until object removed. Is any object obstructing movement of the effect? Is it touching the projector?
Mirrors not working.	Check cable connection to projection lens holder. Check that lens holder is correctly fitted to rails. Is the mirror catching on the lens or lens housing?
Effects will not focus correctly.	Check that projection lens is fitted around the right way with print to front. Check projection effect (i.e. gobo or 35mm slide) is positioned correctly over air duct.
35mm slides melt or distort.*	Check fan is on full (i.e. **position 3** right). Check the slide is in the correct position in the airflow, over the air duct, approximately **15mm from the body of the projector.** 

*** IMPORTANT**

Never use original 35mm slides. Always use duplicate 35mm slides. Never use 35mm slides with the GoBoShow F1. Always use GoBoShow F2 or GoBoPro projectors. For maximum life use a slide mount with no glass in it.