

HOW TO

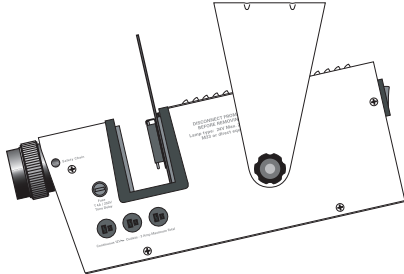
Set up a Solar 250

Mounting

The projector must always be mounted using its bracket and the air inlet grilles must be free and clear to allow airflow.

There are 4 methods of mounting:

1. Suspended from above with its hanging bracket firmly fixed to a strong beam or Trilite truss.

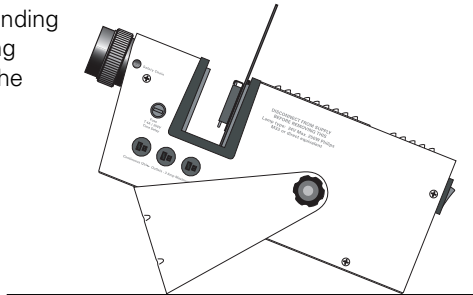


When hung from above, the projector must be securely attached to a mounting point, able to support its weight. All nuts, bolts and other fixings must be securely tightened, as well as the hanging bracket knobs and locking levers.

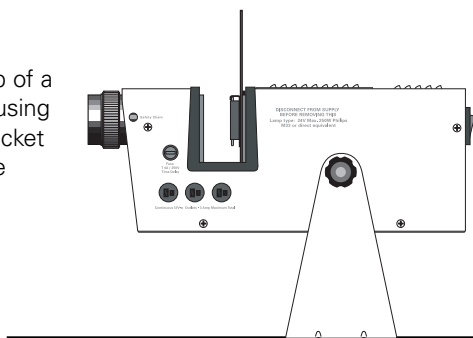
IMPORTANT

When hanging or wall mounting the projector a safety chain should be fitted and secured, with a maximum possible drop of 30cm (12"), to an immovable object able to withstand the shock weight of the projector.

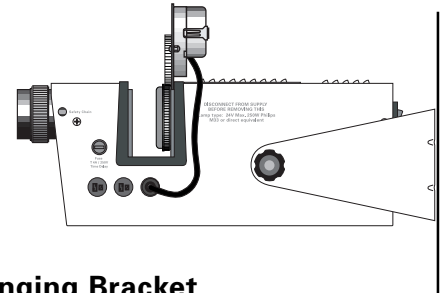
2. Fixed or freestanding with the hanging bracket under the projector on an immovable flat surface.



3. Mounted on top of a flat surface by using the hanging bracket as an adjustable stand.



4. Fixed with the hanging bracket behind the projector bolted to an immovable vertical surface.



Adjusting the Hanging Bracket

1. Loosen the central knobs on both sides and move the bracket/projector into the desired position.
2. Tighten both knobs securely to prevent the projector angle moving.

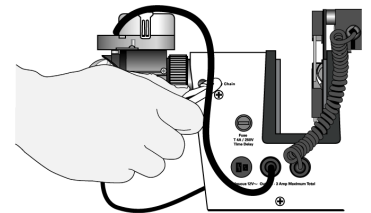
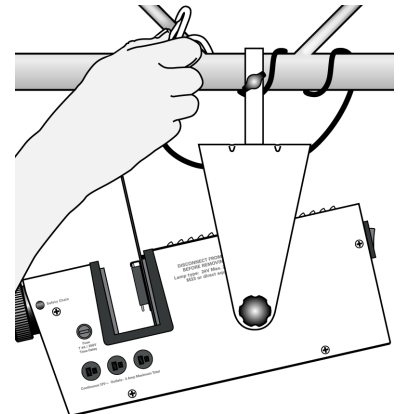
DISCONNECT FROM SUPPLY BEFORE REMOVING THIS
Lamp type: 24V Max. 250W Philips M33 or direct equivalent



Fitting a safety chain or cable

If using a safety chain or cable there are two methods of securing the Solar 250.

1. Loop the chain or cable through the hanging bracket and secure both ends, as tight as possible, allowing no more than a 30cm (12") maximum drop, to an immovable object.
2. One end of the chain or cable is fitted to the eye hole on side of the Solar 250 projector. The other end is securely fitted, as tight as possible, allowing no more than a 30cm (12") maximum drop, to an immovable object.



Power

OPERATING VOLTAGES

220-240V~ 50-60Hz or 110-120V~ 50-60Hz

The Solar 100C is factory set to the correct operating voltage of the Country where it is sold

POWER RATING 350W MAX

Before use check the voltage selector switch, on the back of the projector, is set to the same voltage as your local mains supply. If incorrect, move to the correct voltage position. UK Voltage = 240V.

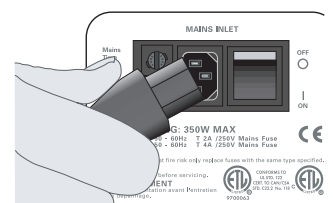
Voltage Selector Switch



Switching On

Mains power is supplied via the IEC mains inlet socket at the rear of the unit. An IEC power cable, with plug, is supplied with each projector.

Simply plug in the IEC lead to the back of the projector and switch to the ON position.

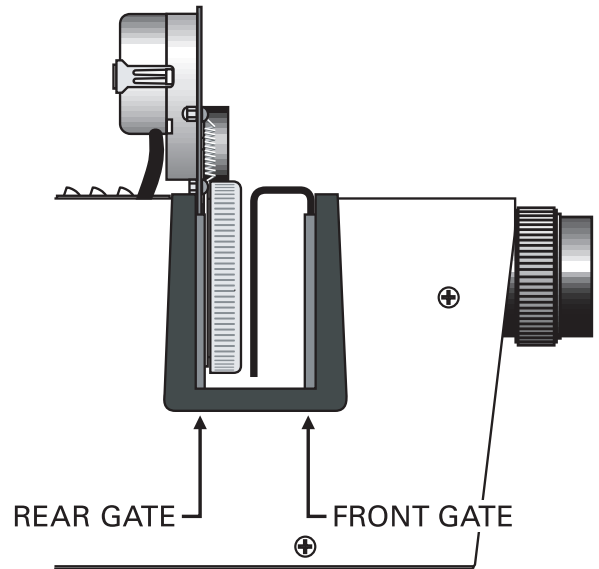


The Gate

The 'gate' of a Solar 250 OPTI Effects Projector is the area between lamp optics and the focussing lens into which the effect(s) to be projected are placed. It is a fixed opening and has two sides with runners on them into which 'effect accessories' are fitted which, in turn, hold the effect(s) to be projected.

The Primary effect, with the main image you wish to project, is fitted into the Rear Gate runners.

Cassette Safes and Secondary (image altering) effects, like Distortion Wheels, are fitted into the Front Gate runners.



Effects

The range of effects available for the Solar 250 is split into three main groups. Effect Wheels (6 inch or 9 inch OPTI Max), Effect Cassettes (50mm or 3 inch) and Static 35mm Slides & 50mm Gobos.

There is a wide range of standard Wheels and Effect Cassettes available which are featured on our web site and in our Projection & Effects Catalogue. In addition, we can produce custom gobos and effects in all sizes.

In order to project an effect using the Solar 250 you would need the appropriate Solar Effects Accessory. e.g. for a 6 inch Effect Wheel you would need a Solar 6 inch Wheel Rotator.



HOW TO

Select and fit a lens

The standard lens supplied with your projector is a photographic quality, triple element fully coated 85mm f2.8 42.5mm diameter plastic helical focussing groove unit.

LENSES

60mm
85mm
100mm

Code
FG6150
FG6160
FG6170



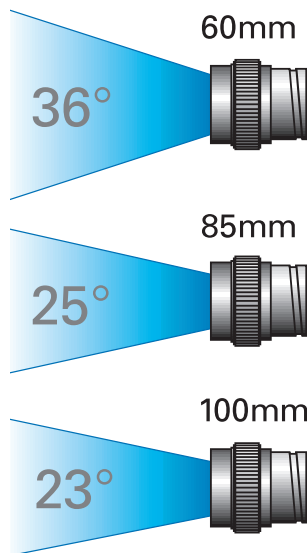
Lens Angles

The focal length of a lens determines how wide an angle the image is projected.

In simple terms the larger the number of the focal length of the lens the narrower the beam. The lower the number the wider the angle. This angle is called the 'inclusive angle'.

The illustrations show the inclusive angles for OPTI Solar lenses.

The 'inclusive angle' of each lens can be plotted on design drawings to determine the projected image size.



Lens Selection Calculations

The formulae below are to help select the right lens for your application. All dimensions in millimetres.

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

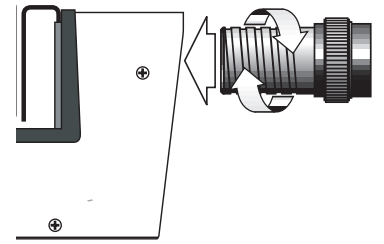
* OBJECT SIZE is up to a maximum 35mm diameter.

Lens Fitting & Focus

In order to project a crisp focussed image it is necessary to adjust the focussing lens after the unit has been aimed at the desired projection surface.

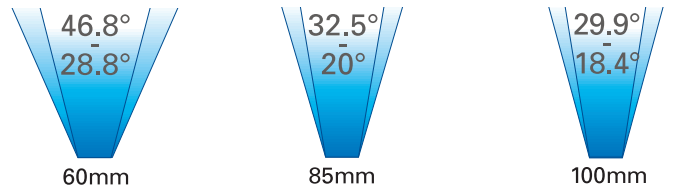
Fitting the lens

1. Insert the lens until it meets resistance.
2. Rotate clockwise to locate.
3. Rotate lens in either direction to focus.

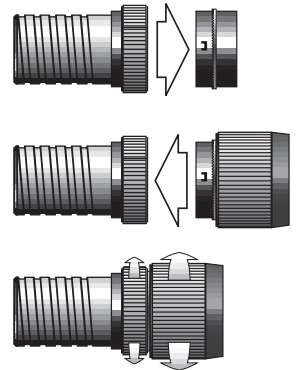


Zoom Attachment* Fitting & Focus

The OPTI Solar Zoom Attachment replaces the reducing collar and increases the focal range of the lens from 0.8 to 1.3.



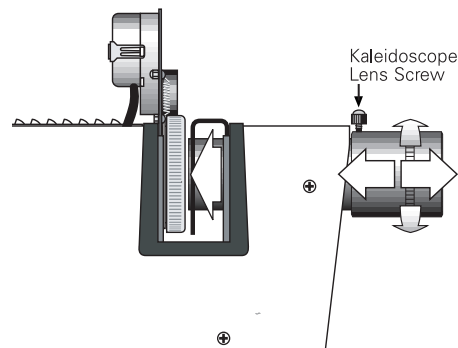
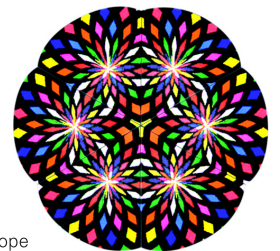
1. Remove the 'click clack' reducing collar by gently pulling out.
2. Insert Zoom Attachment.
3. Rotate the main lens in either direction to focus.
4. Rotate the serrated grip of the Zoom Attachment to increase or decrease image size.



* Zoom Attachment no longer available to purchase.

Kaleidoscope Lens Fitting & Focus

The OPTI Kaleidoscope Lens replaces the focussing lens and repeats a section of an effect as a six sided image. It replaces the normal focussing lens in the same socket.



1. Slide in the Kaleidoscope lens to within 1mm of the effect and twist the main body of the lens to the desired image orientation and movement.
2. Loosen the screw on the lens and focus by sliding the front section back and forth until the desired focus is achieved.
3. Tighten screw on lens to prevent the focus slipping.

HOW TO

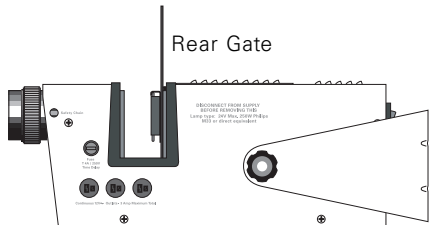
Project 50mm Gobos or 35mm Slides

50mm Gobo or 35mm Slide Projection

To project a single 50mm gobo or 35mm Duplicate* Slide image either static or rotating, you will need either a Solar 50mm Slide/Gobo Holder or 50mm Slide/Gobo Rotator.

Single *Slide/Gobo Accessories

- Slide/Gobo Holder Code FG6033
- Slide/Gobo Holder (+1/2 rpm Wheel Rotator) Code FG6037
- Slide/Gobo Rotator Code FG6382



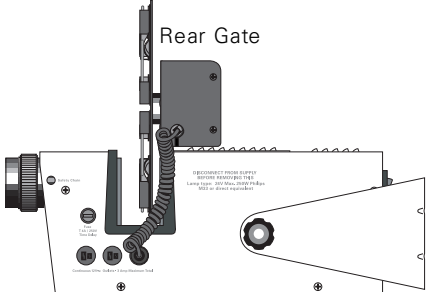
- Projector + Lens
- 1 x Custom 50mm Gobo or *35mm Slide
- 1 x 50mm Gobo Holder or 50mm Gobo Rotator

Multi 50mm Gobo Accessories

To project a number of interchangeable static or rotating gobos you will need either a Solar Six Static 50mm Slide/Gobo Autochanger or Four Rotating Slide/Gobo Autochanger.

Multi *Slide/Gobo Autochangers

- Six Static Slide/Gobo Autochanger Code FG6384
- Four Rotating Slide/Gobo Autochanger Code FG6383
- Slide Blanking plate (for Slide/Gobo Autochangers) Code FG6038



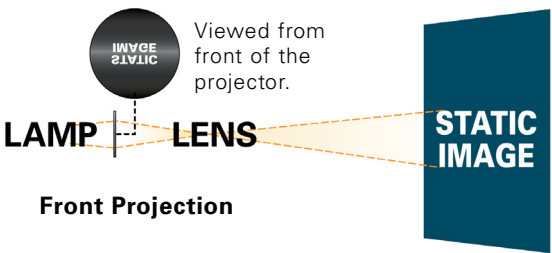
- Projector + Lens
- 6 (or 4) x Custom *35mm Slides and/or 50mm Gobos
- 1 x Six Static Slide/Gobo or Four Rotating Slide/Gobo Autochanger.

* We recommend using duplicates because slides will fade.

Orientation

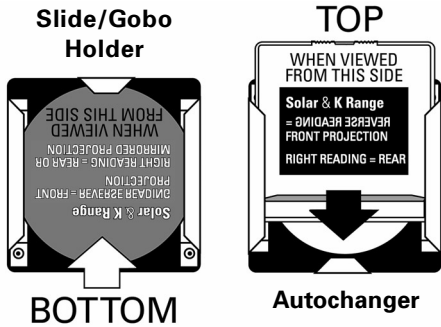
For front projection the image should be loaded reverse reading upside down when viewed from the front.

For use with a mirror or for rear projection the image should be right reading upside down when viewed from the front.

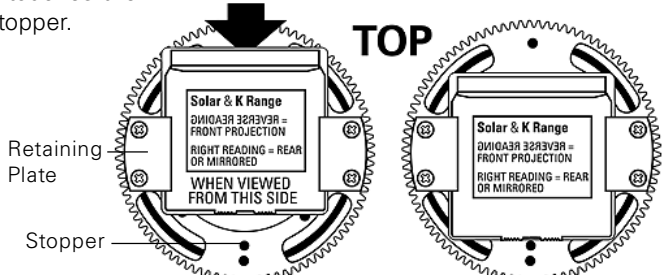


Fitting 50mm Gobos or 35mm Slides

Load from the bottom. Push the gobo or 35mm slide into place and rotate to a square position.



Slide/Gobo Rotators
Slide the gobo or 35mm slide into place between the retaining plates until it touches the stopper.



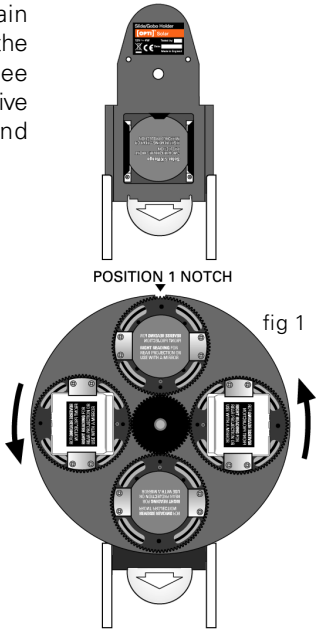
Autochangers

Always start from position 1, marked by a notch (fig 1 below). Load from top. Then rotate turret anti-clockwise to next position.

Fitting an Effect Accessory into the projector

The accessory holding the main projected effect(s) should be in the rear gate (closest to the lamp - see side elevations left). This will give the best image illumination and longest effect life.

1. Slide the effect accessory into the rear gate runners of the projector.
2. Slide firmly home. Ensure that the base of the back plate of the effect accessory is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Plugging a 12V~ Slide/Gobo Accessory into the projector

Slide/Gobo Rotators and Autochangers need to be connected to one of the 12V~ sockets on the side of the projector (see side elevations above left).

Once power is applied and the projector is turned on the accessory will start.



HOW TO

Project 50mm Effect Cassettes

50mm Cassette Projection

The Double Image Effect Cassette is unique to OPTI. There are two sizes both of which contain two gobos, one static, the other rotating. They can either create dynamic effects like those in our standard range or be used for promotions combining a static image and rotating message (or vice versa).



Customised double image cassette.



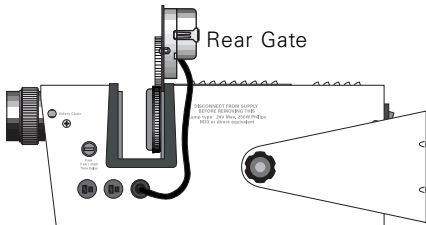
Standard effect cassette (No. 7111).

Single 50mm Cassette Accessory

To project a single 50mm Effect Cassette you will need a 50mm Cassette Rotator.

50mm Rotator

Code
FG6391



Projector + Lens

1 x Double image 50mm Cassette

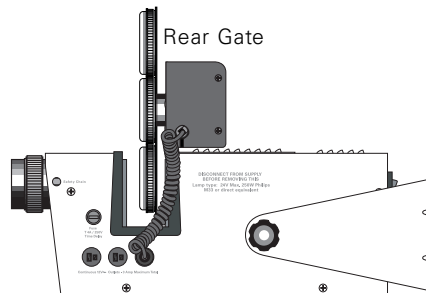
1 x 50mm Cassette Rotator

Multi Cassette Accessory

To project a number of interchanging 50mm Effect Cassettes you will need a Four 50mm Cassette Autochanger.

Four 50mm Cassette Autochanger

Code
FG6386



Projector + Lens

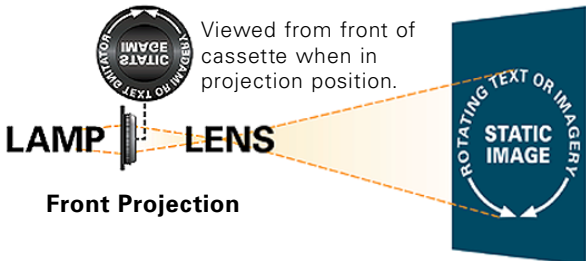
4 x Standard and/or Custom 50mm Effect Cassettes

1 x Four 50mm Effect Cassette Autochanger.

Orientation

For front projection the image should be loaded reverse reading and upside down when viewed from the front of the cassette when in projection position.

For use with a mirror or for rear projection the image should be right reading and upside down.

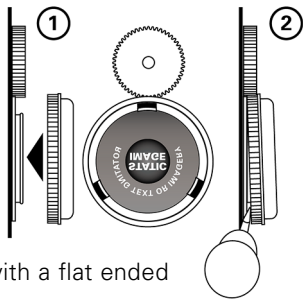


Fitting 50mm Cassettes

1. Push onto the circular plastic rim of the holder and 'click' home.

If there is lettering or an image on the static piece of glass align it upside down and as square as possible.

2. Remove by gently prising off with a flat ended screwdriver.



Autochanger

Always start from position 1, marked by a notch (fig 1 below) when at the top. Then rotate turret anti-clockwise to next position.

Changing or replacing the glass gobo(s)

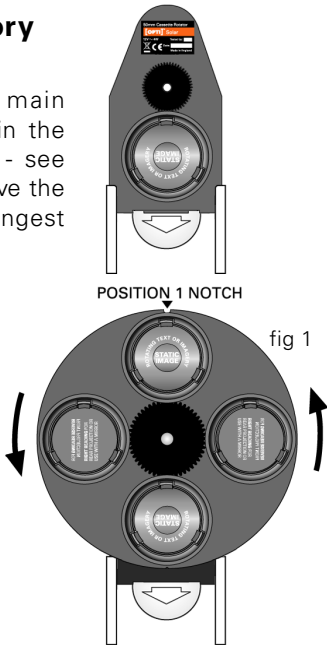
1. Remove the 50mm front glass by inserting a thin piece of metal, like a paper-clip to the side of one of the 3 retaining clips on the cassette.
2. Gently pry the glass out using the paper-clip as a lever and then remove by hand.
3. Using your thumb(s) gently press out the 44mm back glass from the front, through the back of the cassette.
4. Replace with new glass by simply 'clicking' into place.



Fitting an Effect Accessory into the projector

The accessory holding the main projected effect(s) should be in the rear gate (closest to the lamp - see side elevations left). This will give the best image illumination and longest effect life.

1. Slide the effect accessory into the rear gate runners of the projector.
2. Slide firmly home. Ensure that the base of the back plate of the effect accessory is at the bottom of the projector gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Plugging a 12V~ Cassette Accessory into the projector

50mm Cassette Rotators and the Autochanger need to be connected to one of the 12V~ sockets on the side of the projector (see side elevations above left).

Once power is applied and the projector is turned on the accessory will start.



HOW TO

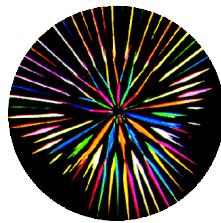
Project 3 inch Effect Cassettes

3 inch Cassette Projection

The Double Image Effect Cassette is unique to OPTI. There are two sizes both of which contain two gobos, one static, the other rotating. They can either create dynamic effects like those in our standard range or be used for promotions combining a static image and rotating message (or vice versa).



Customised double image cassette.



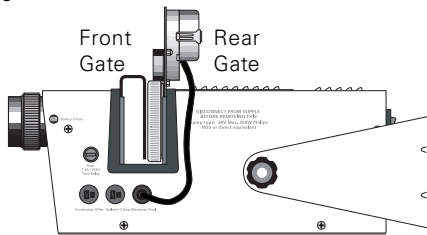
Standard effect cassette (No. 7111).

Single 3 inch Cassette Accessories

To project a single 3 inch Effect Cassette you will need a 3 inch Cassette Rotator and a Cassette Safe.

3 inch Effect Cassette Rotator
Cassette Safe

Code
FG6320
FG6326



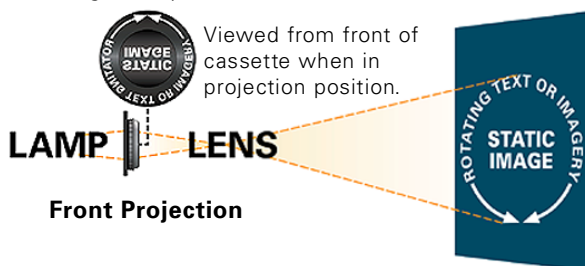
Projector + Lens

- 1 x Double image 3 inch Effect Cassette
- 1 x Cassette Safe
- 1 x 3 inch Effect Cassette Rotator*

Orientation

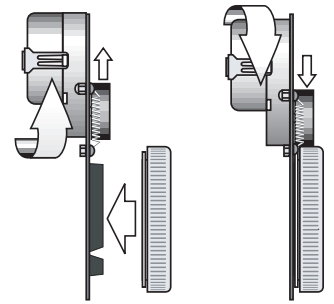
For front projection the image should be loaded reverse reading and upside down when viewed from the front of the cassette when in projection position.

For use with a mirror or for rear projection the image should be right reading and upside down.



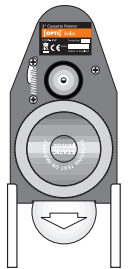
Fitting a 3 inch Cassettes

1. Pull the motor up (on the back) to lift Drive Tyre.
2. Position 3 inch Effect Cassette over the flanges on the base plate with the inner image (if custom double) upside down and parallel to the bottom of the base plate.
3. Push Cassette over bent flanges of Cassette Rotator until securely and evenly fixed. **Take care to only apply pressure to the metal outer casing of the Cassette.**
4. When the Cassette is secured release the motor to engage the drive tyre.
6. To remove, pull the motor up to release the drive tyre.
7. Gently prise off the cassette with flat ended screwdriver.



Fitting a 3 inch Cassette Rotator into the projector

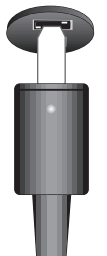
1. Slide the Cassette Rotator into the rear gate runners of the projector (closest to the lamp - see side elevation left).
2. Slide firmly home. Ensure that the base of the plate of the Cassette Rotator is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Plugging a 12V~ Cassette Rotator into the projector

3 inch Cassette Rotators need to be connected to one of the 12V~ sockets on the side of the projector (see side elevation left).

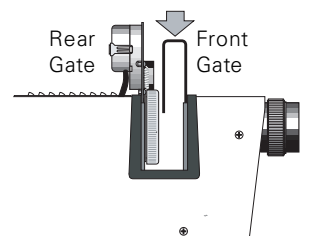
Once power is applied and the projector is turned on the 3 inch Cassette Rotator will start.



Fitting a Cassette Safe

When using a 3 inch Effect Cassette OPTI recommend, for health and safety reasons, that a Cassette Safe is also fitted.

Slide the Cassette Safe into the front gate of the projector. This will ensure the Cassette will not fall out and be damaged if it becomes loose from the Cassette Rotator.



HOW TO

Project 6 inch Effect Wheels

6 inch Wheel Projection

6 inch Effect Wheels come in a wide range of designs in different types. See the 6 inch Wheel section of our web site. In most cases only one 6 inch Wheel is projected at a time and for most effects this would be on a 1/2rpm Rotator. However, two 6 inch Effect Wheels can be combined in a Solar 250.

The primary Effect Wheel, with the main image you wish to project, is fitted onto a 6 inch Wheel Rotator and into the rear gate runners (closest to the lamp). An effect altering wheel, like a Distortion Wheel or a colour changing Spektraflash, fits onto a 6 inch Wheel Rotator and into the front gate runners and can be on a different speed Wheel Rotator.

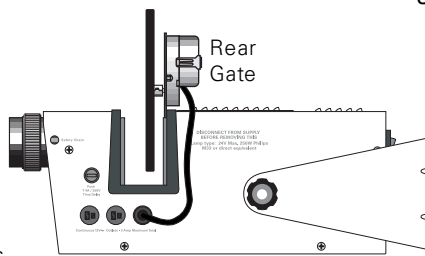
6 inch Wheel Rotators

To project a 6 inch Effect Wheel you will need a 6 inch Wheel Rotator.

- 6 minute
- 1/2 rpm
- 5 rpm
- 20 rpm
- VSD
- Wheel Safe
- Wheel Safe
- Extension Shaft

- 50 min - 5 rpm
- 1/2 rpm
- 5 rpm

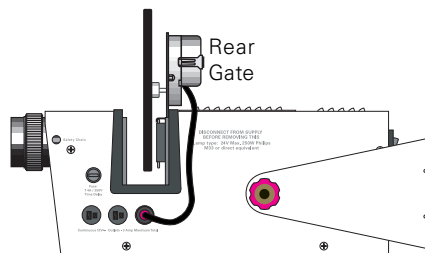
- Code
- FG6380
- FG6340
- FG6350
- FG6360
- FG6378SM
- FG0066
- FG0064
- GS6340E



- Projector + Lens
- 1 x 6 inch Effect Wheel
- 1 x 6 inch Wheel Rotator (1/2rpm - FG6340)

Gobos Combined with 6 inch Effect Wheels

To project a gobo with a 6 inch Effect Wheel, to add to the effect or alter it you will need a Slide/Gobo Holder + 1/2rpm Wheel Rotator.



- Projector + Lens
- 1 x Custom B/W 50mm Gobo
- 1 x Slide/Gobo Holder + 1/2rpm Wheel Rotator (FG6037).



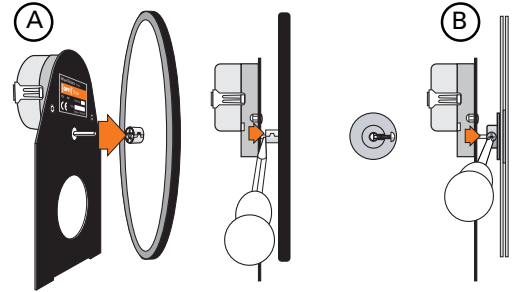
- 1 x 6 inch 575 Cloud Wheel
- A Cloud Wheel with a custom gobo for a clouds through window effect.



- 1 x 6 inch Liquid Wheel
- Moving colours mingle and slide through the projected image.

Fitting an Effect Wheel

Fit the central boss of the wheel over the shaft of the Wheel Rotator. On a plastic Wheel (A) the boss is self fixing. On a 575 Safe Wheel (B) tighten the cross headed screw onto the flat side of the 'D' shaft.

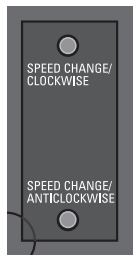


To remove a plastic Wheel (A) gently prise the boss off with a flat ended screwdriver. For a 575 Safe Wheel (B) loosen the cross headed screw off of the flat side of the 'D' shaft and pull the Wheel off.

Adjusting a Variable Speed and Direction Wheel Rotator

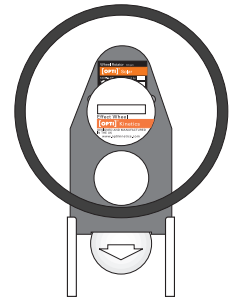
Most Wheel Rotators are fixed speed.

The VSD Wheel Rotator has buttons on the back that adjust direction and speed. When rotating clockwise press the CLOCKWISE button to increase speed. To decrease speed press the ANTI-CLOCKWISE button. Eventually the rotation will slow to a halt and then start rotating anti-clockwise and will continue to increase in speed in that direction until the button is released.



Fitting a Wheel Rotator into the projector

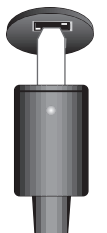
- Slide the wheel rotator into the rear gate runners of the projector (closest to the lamp - see side elevations left).
- Slide firmly home. Ensure that the base of the back plate of the effect accessory is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Plugging a 12V~ Wheel Rotator into the projector

6 inch Wheel Rotators need to be connected to one of the 12V~ sockets on the side of the projector (see side elevations above left).

Once power is applied and the projector is turned on the 6 inch Wheel Rotator(s) will start.



HOW TO

Use Dynagraph and Rotagraph Wheels

Dynagraph and Rotagraph Wheel Projection

To create spectacular constantly changing effects using the 6 inch wheel format OPTI offers two different sets of 10 interchangeable lightweight polycarbonate 6 inch wheels. Two special Wheel Rotators are also included which counter rotate the wheels close to each other at different set speeds.

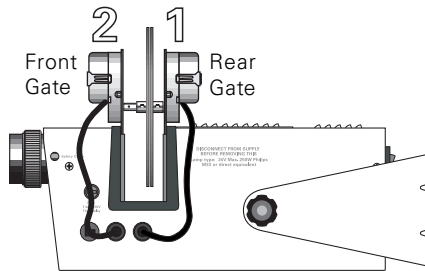
6 inch Wheel Sets

Dynagraph (Set of 10 Wheels + 2 Rotators)

Code
FG6050

Rotagraph (Set of 10 Wheels + 2 Rotators)

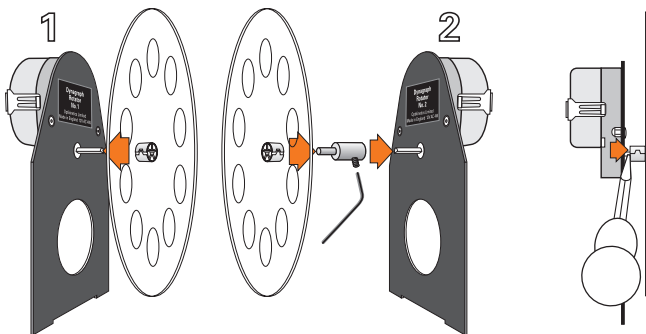
Code
FG6040



Projector + Lens
2 x 6 inch Rotagraph or Dynagraph Effect Wheels
2 x 6 inch Wheel Rotators (No. 1 - 15rpm and No. 2 - 16.6rpm)

Fitting Dynagraph or Rotagraph Wheels

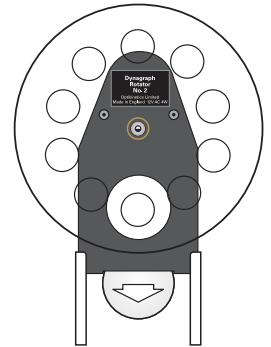
1. Fit the, self fixing, central boss of the primary wheel over the shaft of the No.1 Wheel Rotator and push home.
2. Loosen the Allen Key Screw on the Extension Shaft, supplied as part of the set, until the end is not visible inside the locating hole.
3. Fit the Extension Shaft over the 'D' Shaft of the Rotator and push home.
4. Tighten the Allen Key screw onto the flat side of the 'D' shaft of the No. 2 Wheel Rotator.
5. Fit the, self fixing, central boss of the secondary wheel over the end of the Extension Shaft and push home.



To remove either Wheel gently prise the boss off with a flat ended screwdriver.

Fitting the Wheel Rotators into the projector

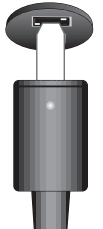
1. Slide the No.1 Wheel Rotator into the rear gate runners of the projector (closest to the lamp - see side elevation left).
2. Slide firmly home. Ensure that the base of the back plate of the rotator is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect is in the correct position for projection.
3. Slide the No.2 Wheel Rotator into the front gate runners of the projector (closest to the lens - see side elevation left).
4. Slide firmly home. Ensuring that the base of the back plate of the rotator is at the bottom of the projector's gate.



Plugging the 12V~ Wheel Rotators into the projector

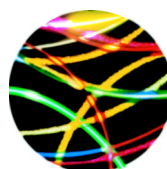
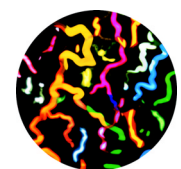
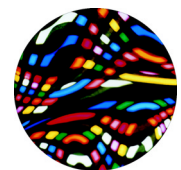
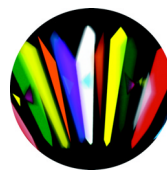
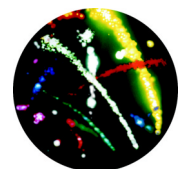
Both 6 inch Wheel Rotators need to be connected to one of the 12V~ sockets on the side of the projector (see side elevation left).

Once power is applied and the projector is turned on the 6 inch Wheel Rotators will start and the effects begin.



Dynagraph (FG6050)

Rotagraph (FG6040)



HOW TO

Create Effects

6 inch Distortion Wheel Projection

To create effects or distort images using 6 inch Distortion Wheels the primary Effect Wheel (with the main image or Distortion Wheel you wish to project) is fitted onto a 6 inch Wheel Rotator and into the rear gate runners (closest to the lamp). The secondary Distortion Wheel fits onto a 6 inch Wheel Rotator and into the front gate runners.

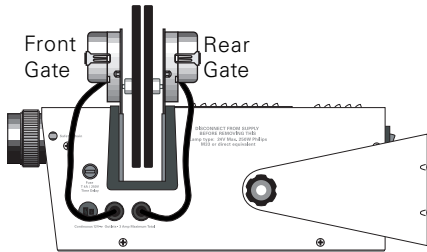
Look at the 'How To Project 6 inch Wheels' section or at the Solar Wheel Rotator page of our website for all 6 inch Wheel Rotators.

6 inch Distortion Wheels

Set of 3	Code
Mild	FG7037
Medium	FG7037/1
Heavy	FG7037/2
	FG7037/3

6 inch Effect Wheel Distortion

Combine a Standard Effect Wheel on 1/2rpm Wheel Rotator in the rear gate (closest to the lamp) with a Mild Distortion Wheel on a 5rpm Wheel Rotator in the front gate, to create underwater, flickering flame or waving effects.



- Projector + Lens
- 2 x 6 inch Wheel Rotators
- 1 x 6 inch Medium Distortion Wheel
- 1 x 6 inch Effect Wheel

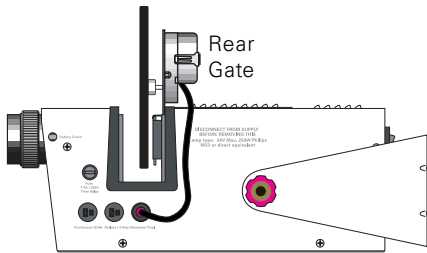


6 inch Deep Wheel (FG7049) with a Mild Distortion Wheel. 6 inch Fire Wheel (FG7053) with a Mild Distortion Wheel. 6 inch Flags Wheel (FG7055) with a Mild Distortion Wheel.

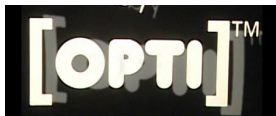
Other 6 inch Wheels that work well with a Mild Distortion Wheel include Tropical Fish (FG7253) and Whales (FG7250).

Gobo Distortion

Combine a gobo and a Mild Distortion Wheel on a Slide/Gobo Holder + 1/2rpm Wheel Rotator (FG6037), in the rear gate, to create the effect of the image being projected underwater.



- Projector + Lens
- 1 x Custom B/W 50mm Gobo
- 1 x Slide/Gobo Holder + 1/2rpm Wheel Rotator
- 1 x 6 inch Mild Distortion



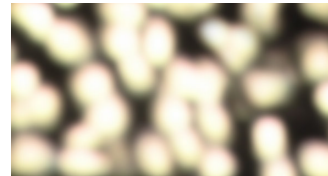
* For more movement use a Slide/Gobo Holder in the rear gate and a Mild Distortion Wheel on 5rpm Wheel Rotator in the front gate.

Other 6 inch Wheel Distortion Effects

By combining two wheels on separate Wheel Rotators one can create some impressive stand alone effects like these. The speed of Wheel Rotators chosen determines the speed and appearance of movement. A 1/2 rpm and 5rpm combination is recommended for the first two effects shown below.

Sunlight through trees

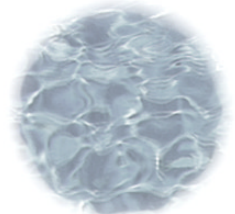
- Projector + Lens
- 2 x 6 inch Wheel Rotators
- 1 x 6 inch Dot Beam Wheel*
- 1 x 6 inch Medium Distortion



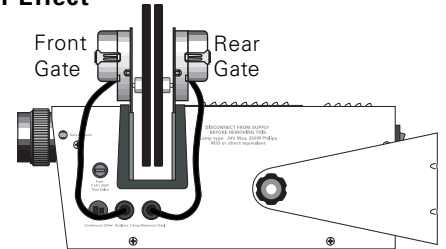
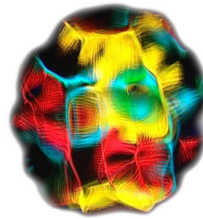
* A dot Beam Cassette on a Cassette Rotator can be substituted.

Light on water

- Projector + Lens
- 2 x 6 inch Wheel Rotators
- 1 x 6 inch Medium Distortion
- 1 x 6 inch Heavy Distortion



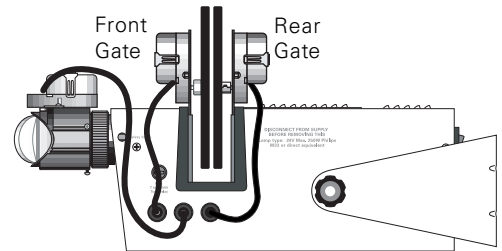
Ambient Multi-Colour Effect



- Projector + Lens
- 2 x 6 minute 6 inch Wheel Rotators
- 1 x 6 inch Medium Distortion Wheel
- 1 x 6 inch Cog Wheel

Ghosts

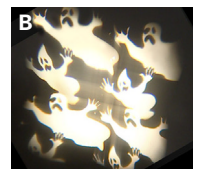
The 6 inch Ghost Wheel is best projected combined with a Mild Distortion Wheel on a 5rpm Wheel Rotator and a Panoramic Rotator - creating 'ghostly' movement split and panned in two directions on a linear plane.



- Projector + Lens
- 2 x 6 inch Wheel Rotators
- 1 x 6 inch Mild Distortion Wheel
- 1 x 6 inch Ghost Wheel
- 1 x Panoramic Rotator



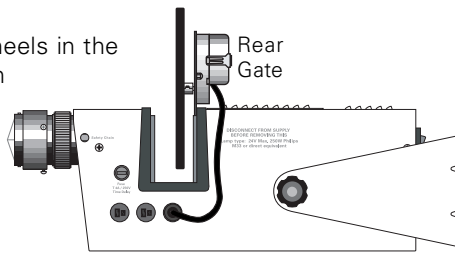
Simpler effects can be created by either: just using the Distortion Wheel (A) or; substituting the Panoramic Rotator with a 4 Facet Prism (B).



Moving Abstract Imagery

To create a swirling, multi-image effect, combine a 6 inch Abstract Wheel with a 3 or 4 facet Clip-on Prism.

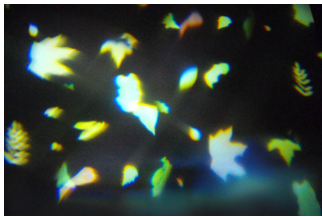
See the Abstract Wheels in the 6 inch Wheel section of our website for the full range of Abstract Designs.



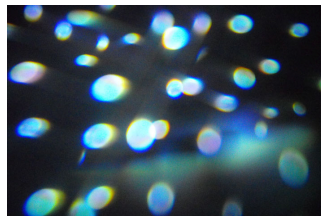
Projector + Lens

1 x 6 inch 5rpm Wheel Rotator
1 x 6 inch Abstract Wheel

1 x 3 Facet Clip-on Prism or
4 Facet Clip-on Prism.



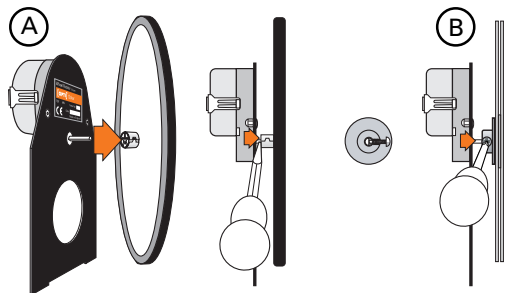
Leaf (Coloured) + 4 Facet Prism.



Bubble (Coloured) + 4 Facet Prism.

Fitting an Effect Wheel

Fit the central boss of the wheel over the shaft of the Wheel Rotator. On a plastic Wheel (A) the boss is self fixing. On a 575 Safe Wheel (B) tighten the cross headed screw onto the flat side of the 'D' shaft.



To remove a plastic Wheel (A) gently prise the boss off with a flat ended screwdriver. For a 575 Safe Wheel (B) loosen the cross headed screw off of the flat side of the 'D' shaft and pull the Wheel off.

Adjusting a Variable Speed and Direction Wheel Rotator

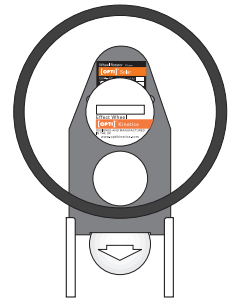
Most Wheel Rotators are fixed speed.

The VSD Wheel Rotator has buttons on the back that adjust direction and speed. When rotating clockwise press the CLOCKWISE button to increase speed. To decrease speed press the ANTI-CLOCKWISE button. Eventually the rotation will slow to a halt and then start rotating anti-clockwise and will continue to increase in speed in that direction until the button is released.



Fitting a Wheel Rotator into the projector

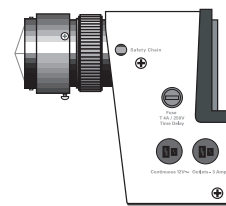
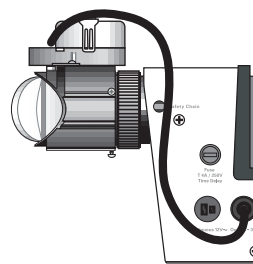
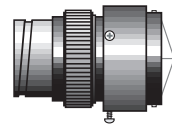
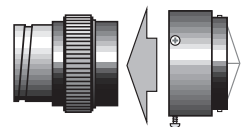
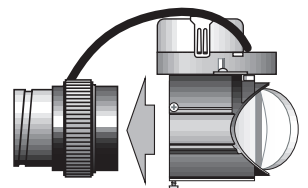
1. Slide the wheel rotator into the rear gate runners of the projector (closest to the lamp - see side elevation left).
2. Slide firmly home. Ensure that the base of the back plate of the effect accessory is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Fitting Prisms and the Panoramic Rotator

Solar Prisms are very simple to fit.

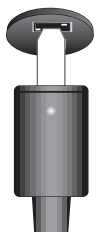
1. Loosen off the 3 screws around the perimeter of the circular fixing section.
2. Place over the end of the 'click clack' reducing collar of the focussing lens.
3. Turn through 360° to the split pattern/direction you want to project.
4. Tighten the 3 screws.
5. To motorise the Panoramic Rotator prism - plug into one of the 12V~ sockets on the side of the projector.



Plugging a 12V~ Effect Accessory into the projector

6 inch Wheel Rotators and Panoramic Rotators need to be connected to one of the 12V~ sockets on the side of the projector (see side elevations above and above left).

Once power is applied and the projector is turned on the Effect Accessories will start.



OPTI Max Wheel Projection

OPTI Max Effect Wheels utilise the maximum area possible for rotation of a continuous image in an OPTI Projector. The primary Effect Wheel needs to be fitted onto an OPTI Max Wheel Rotator and into the rear gate runners (closest to the lamp). An effect altering wheel, like a Distortion Wheel or a colour changing Spektraflash, can also be fitted onto a 6 inch Wheel Rotator and into the front gate runners.

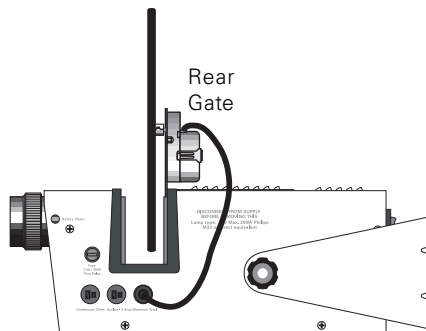
Projecting an OPTI Max Effect Wheel

If you want to project an OPTI Max Effect Wheel you will need a Max Wheel Rotator.

Max Wheel Rotator

6 minute

Code
FG6375



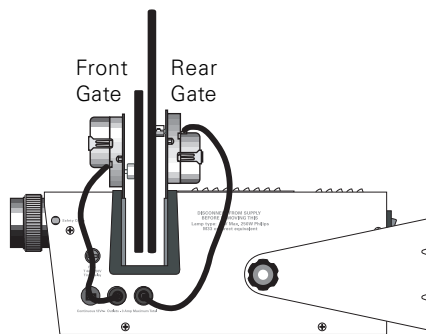
Projector + Lens

1 x OPTI Max Effect Wheel

1 x Max Wheel Rotator

OPTI Max Wheel Distortion

Combine a Standard OPTI Max Wheel on Max Wheel Rotator in the rear gate with a 6 inch Mild Distortion Wheel on a 6 inch 5rpm Wheel Rotator in the front gate to create an underwater effect.



Projector + Lens

1 x OPTI Max Wheel Rotator

1 x 6 inch 5rpm Wheel Rotator

1 x OPTI Max Effect Wheel

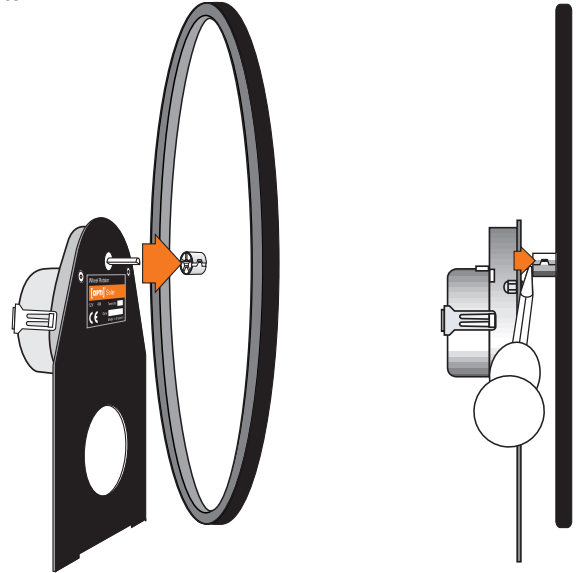
1 x 6 inch Mild Distortion Wheel

Shown here is the Coral Reef (FG7974) design distorted. The Aquarium OPTI Max Wheel (FG7973) also works very well with a 6 inch Mild Distortion Wheel.



Fitting an OPTI Max Wheel

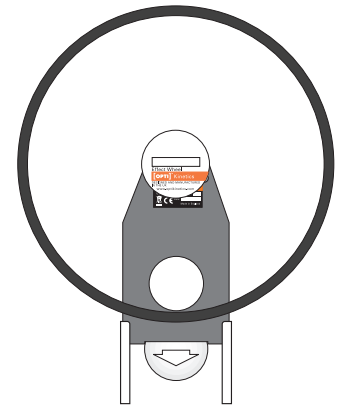
Fit the central self fixing boss of the wheel over the drive spindle of the Wheel Rotator and push firmly home from the centre, ensuring that the wheel is parallel to the plate of the rotator.



To remove gently prise the boss off with a flat ended screwdriver. **Do not pull the wheel.**

Fitting a Wheel Rotator into the projector

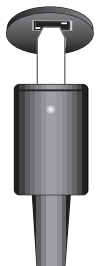
1. Slide the Wheel Rotator into the rear gate runners of the projector (closest to the lamp - see side elevations left).
2. Slide firmly home. Ensure that the base of the back plate of the Wheel Rotator is at the bottom of the projector's gate runners. This is for optimum safety and will ensure that the effect(s) are in the correct position for projection.



Plugging a 12V~ Wheel Rotator into the projector

OPTI Max Wheel Rotators need to be connected to one of the 12V~ sockets on the side of the projector (see side elevations left).

Once power is applied and the projector is turned on the Wheel Rotator(s) will start.



HOW TO

Fit and Project a Clock Attachment

OPTI Clock Attachment Projection

The OPTI Clock Attachment is designed for use on all OPTI projectors, including the OPTI Solar 250, to produce dynamic, accurate clock projection. The OPTI Clock Attachment features moving hour, minute and second hands with a choice of two standard faces or a custom face for your design.

Solar Clock Attachment

Roman Face

Modern Face

Custom Face

Code

FG6008

FG6010

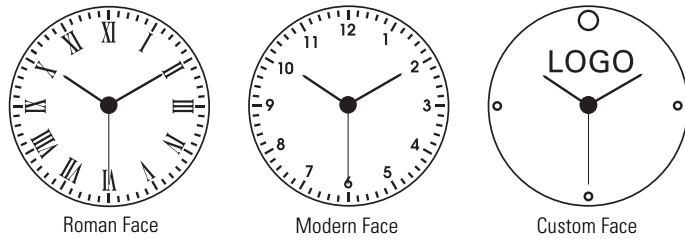
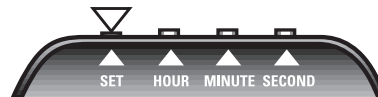
FG6011

Setting an OPTI Solar Clock Attachment

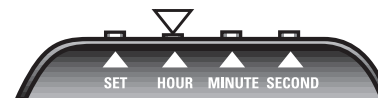
Once power is applied to the projector the clock will set itself to the previously set local time and start to operate.

If the time is incorrect set the clock to the right time:-

1. Press the **SET** button down for 2 seconds. All hands will stop. Release.

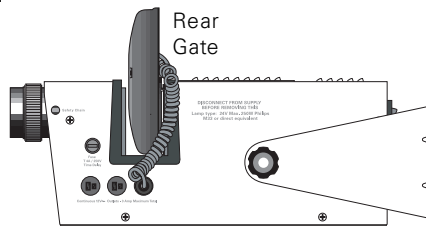


2. Press and hold the **HOUR** button to move the hour hand. Release.



Projecting an OPTI Clock Attachment

To project an OPTI Solar Clock Attachment with a Solar 250 you will need.



Projector + Lens

1 x OPTI Solar Clock Attachment with,

1 x Solar Clock Plate

3. Press and hold the **MINUTE** button to move the minute hand. Release.



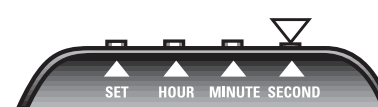
Fitting a Clock Attachment into a projector

The Solar Clock Attachment comes fitted with a two pin 12V~ plug and 'U' shaped Solar Clock Plate.

1. Slide the circular groove of the clock's retaining ring onto the Solar Clock Plate and push firmly home.
2. Slide Solar Clock Plate into the rear gate runners of the projector (closest to the lamp - see side elevation above).
3. Fit the two pin plug into one of the 12V~ sockets on the side of the projector.

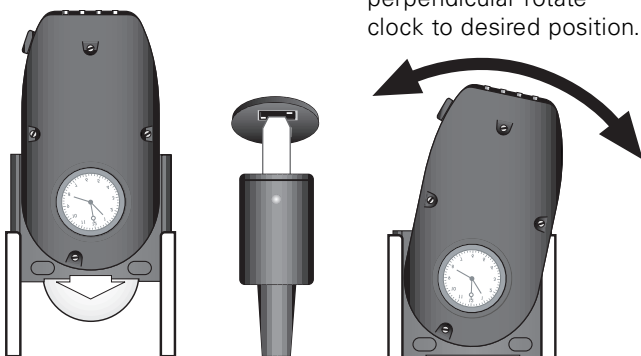


4. Press and hold the **SECOND** button to move the second hand. Release.



4. If the clockface is not perpendicular rotate clock to desired position.

5. Press and hold the **SET** button once to store the new clock time. Release.



The hour then the minute then the second hand will all rotate one revolution to the new time.

IMPORTANT

When setting ensure that each hand is positioned just past the numbers to ensure correct time is set.

NOTE

For fine adjustment tap the buttons rather than press and hold

HOW TO

Fit and use Mirrors

The Solar Deflector Mirror fits onto the 'click click' reduction collar on the front of the projection lens. It does what it says on the pack and deflects the projected image to where you want it to appear. Motorised models which move the image are also available but require additional Mounting Brackets to fit onto the Solar 250.

Solar 250 Mirrors and K Mounting Brackets

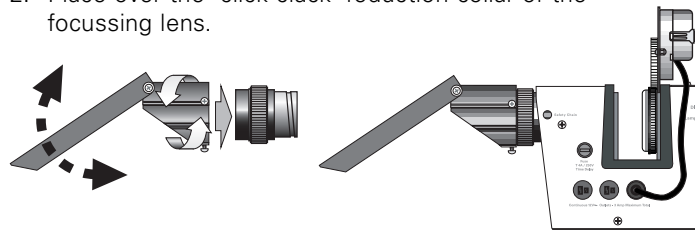
	Code
Solar Deflector	FG6310
K Mounting Brackets	FG2029
K Linear Motion	FG6311
K Circular Motion	FG6312
K Barrel	FG6315

The static Deflector Mirror is used to simply reflect light to where it's required whilst moving mirrors add dynamism to the image being projected thereby catching attention. All OPTI mirrors can be adjusted through 360° to project images onto walls, ceilings, floors or any other surface.

Fitting Deflector Mirror

The Solar Deflector mirror is the simplest mirror to fit.

1. Loosen off the 3 screws around the perimeter of the circular fixing section.
2. Place over the 'click click' reduction collar of the focussing lens.

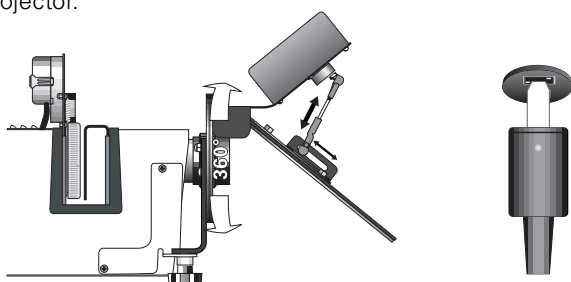


3. Turn through 360° to the desired position and tighten the 3 screws onto the reduction collar.
4. To adjust angle of the mirror - loosen the 2 screws on each side of the mirror.
5. Move the mirror to the desired angle and tighten the screws.

Fitting K Motorised Mirrors

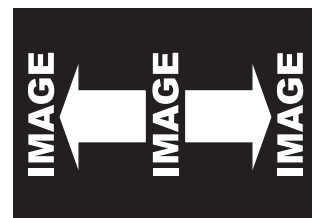
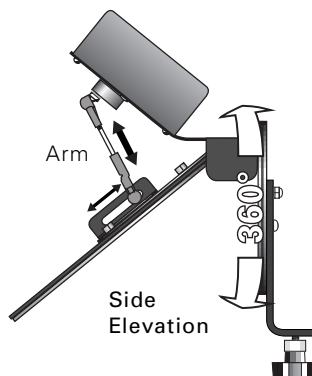
K Mirrors can be fitted onto the front of the Solar 250 projector using Mounting Brackets FG2020.

1. Remove the two screws on either side of the front section of the projector (4 in total).
2. Place mounting brackets either side of the projector and replace the screws through the holes in the bracket.
3. Line up the screw threads on the mirror with the slots on the mounting bracket. Place the nylon collar over the screw thread, under the bracket. Screw on and tighten the knob.
4. Plug into one of the three 12V~ sockets on the side of the projector.



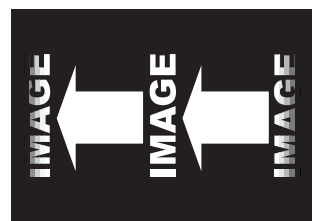
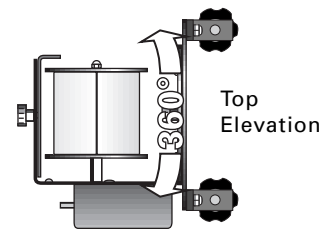
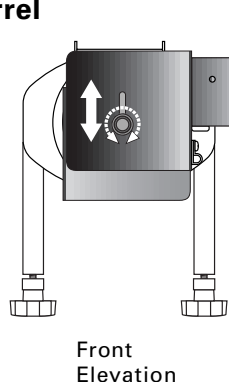
5. Once working, adjust the mirror to the desired position by loosening the securing knob on the cradle and rotating the mirror (through 360°) to the desired position. Tighten the securing knob. Then adjust the range of movement.

Linear



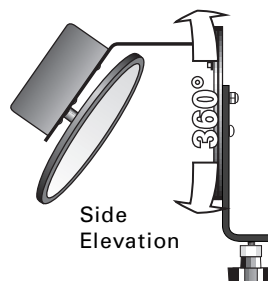
Moves the image back and forth in a straight line of variable length. Adjust the length of image travel by extending or shortening the arm.

Barrel



Repeatedly pans the image in one direction in a straight line of variable length. Adjust the length of image travel by loosening the knob and moving the end plate up or down to maximise or reduce the distance. Adjust speed and direction by turning the knob on the motor casing.

Circular



Moves the image in a circular orbit of variable size and direction. Adjust size of the circular movement of the image by tilting the mirror by hand.

Fitting GS Motorised Mirrors

The full range of motorised GS Mirrors can be fitted to the Solar 250 using the GS to Solar Mirror Bracket (FG6318.BRKT).

After removing the click-click reducing collar on the lens, the adjustable Mirror Bracket slides into the front gate runners. The GS Mirror fits onto the front of the Mirror Bracket.

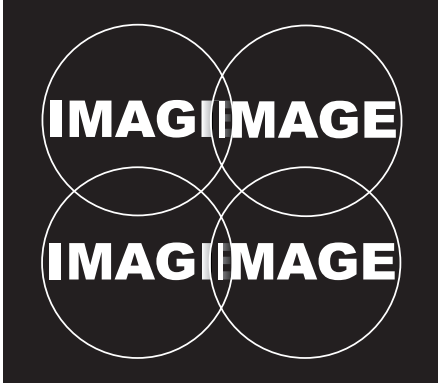
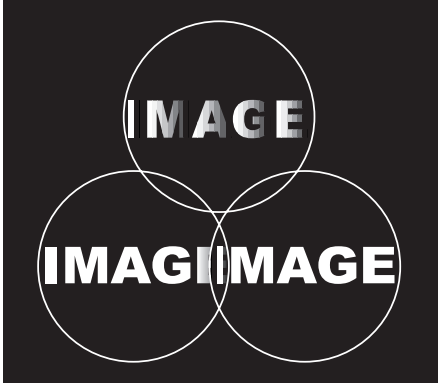
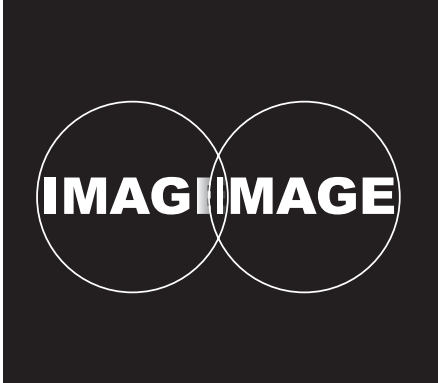
See GS to Solar Mirror Bracket instructions for details.

HOW TO

Fit and use Prisms

Clip-on Prisms

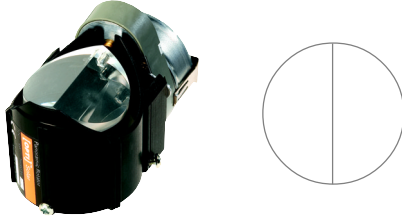
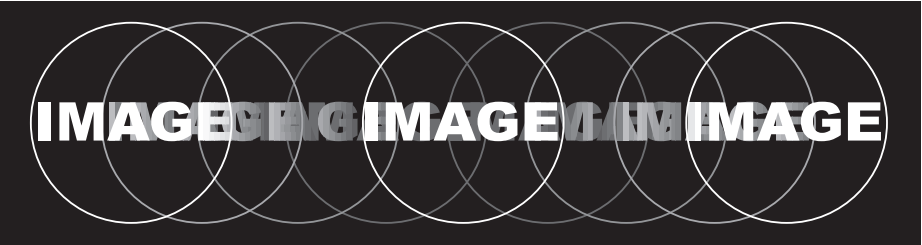
Available with two, three or four facets. Clip-on Prisms attach to the front 'click clack' Reducing Collar on the focussing lens of the OPTI Solar 250 and reproduce the effect being projected two, three or four times respectively. OPTI Clip-on Prisms can be swivelled to alter the spread of the images.



Panoramic Rotator

The OPTI Panoramic Rotator is a motorised 2 Facet prism that scans repeated images in a linear motion through a 360° rotation and creates a continuously changing 4 facet image split.

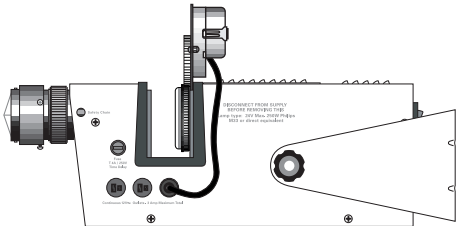
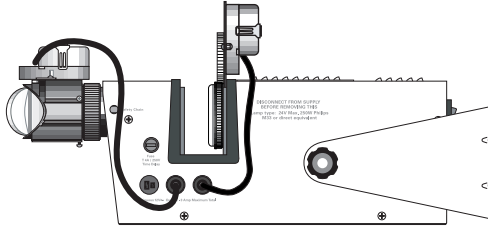
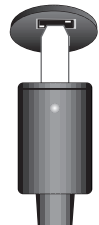
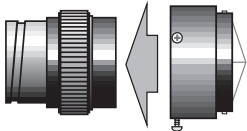
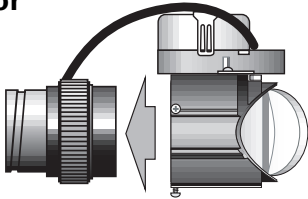
Panoramic Rotator
FG6060



Fitting Prisms and Panoramic Rotator

Solar Prisms are very simple to fit.

1. Loosen off the 3 screws around the perimeter of the circular fixing section.
2. Place over the end of the reducing collar of the focussing lens.
3. Turn through 360° to the split pattern/direction you want to project.
4. Tighten the 3 screws.
5. To motorise the Panoramic Rotator prism and other effect accessories - plug into one of the 12V~ sockets on the side of the projector (see side elevations right).



HOW TO

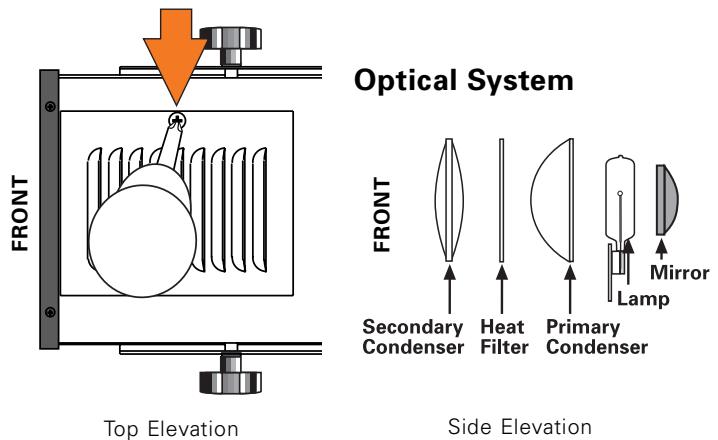
Change the Lamp

The Solar 250 has a quartz halogen 2 pin lamp. The Standard lamp for the Solar 250 (250W M33) has an average life of 300 hours. An alternative lamp (250W Eye) is available for the Solar 250 and has a life of 2000 hours at a slightly reduced light output.

Lamp Changing

Switch off the Effects Projector, disconnect from the mains and allow to cool for 30 minutes, then:

1. Remove the screw from the lamp cover (on the top side of the Solar 250) and remove the lamp cover.
2. Remove the internal lamp cover plate by lifting it out.
3. Remove the old lamp without touching with bare hands (use a cloth or gloves).
4. Replace with the appropriate new lamp.
(Take care not to touch with bare hands).
5. Replace and secure the internal lamp cover plate.
6. Replace and secure the cover with the screw.



Dispose of the old lamp in accordance with the local regulations.

HOW TO

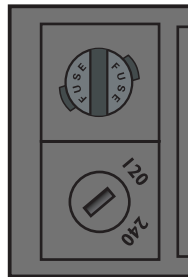
Change the fuses on a Solar 250

Mains fuse

The mains fuse is fitted into the rear IEC panel.

Mains
Time
Delay
Fuse

Voltage
Selector
Switch



MAINS FUSE RATINGS

220-240V~ 50-60Hz 20mm x 5mmØ T2A/250V

110-120V~ 50-60Hz 20mm x 5mmØ T4A/250V

Replace the mains fuse

1. Unscrew the retaining screw cap.
2. Remove the old fuse and replace with a new fuse.
3. Refit and tighten the screw cap.

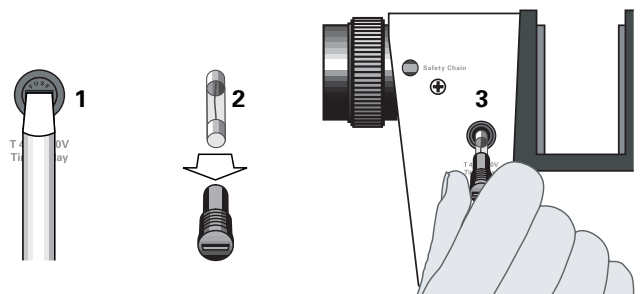
12V~ fuse

The 12V~ outlets are protected by a:

20mm x 5mmØ - 4 Amp time delay

Replace the 12V~ fuse

The 12V~ fuse is located on the side of the projector next to the front of the gate.



Replace mains fuse

1. Unscrew the retaining screw cap.
2. Remove the old fuse and replace with a new fuse.
3. Refit and tighten the screw cap.

HOW TO

Clean the Projector

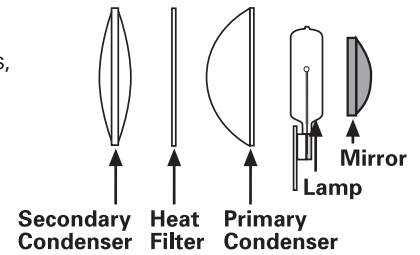
Optics Cleaning

After 3 months (or 500 hours) use, or when changing the lamp, the optical system may need cleaning.

Switch off the Effects Projector, disconnect from the mains and allow to cool for 30 minutes, then:

1. Remove the screw from the lamp cover (on the top side of the Solar 250) and remove lamp cover.
2. Remove internal lamp cover plate by lifting it out.
3. Use a soft tissue or lens cloth with a little methylated spirit or pure alcohol to clean lenses.
4. To clean the mirror, first remove the lamp, without touching with bare hands (use a cloth or gloves), then wipe with a soft tissue or cloth as above.

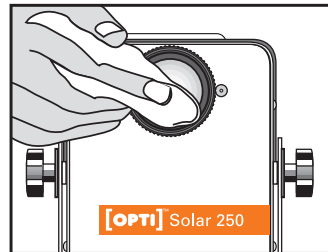
Optical System



Lens Cleaning

The focussing lens may also need cleaning from time to time.

Use a soft tissue or lens cloth with a little methylated spirit or pure alcohol to clean the lens.



Cooling System

The projector has a forced-air cooling system. This cools the components within the projector itself, and cools any accessory and effect in the gate of the projector.

It is essential that all air inlets and outlets are kept clean and clear when the unit is on. If obstructed a safety cut-out switch will turn off the projector before it overheats, but the effect in the gate may be irreversibly damaged and fuses may be blown.

Once the projector is off and has cooled. Clean any dust or debris away with a soft cloth or brush.