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Passive 3D Cinema System TURBO SCREEN Model No.: FD-T05F

User Manual

Attention: Please review this User Manual carefully before installation.
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1. System Overview

Freedeeo™ Turbo Screen 3D cinema system is especially designed for the cinema application. In cooperation with high quality 3D eyewear, the system provides stunning 3D images for small or medium size audiences on screens up to 20m wide.

The perfect optical designed Turbo Screen system can bring a smoother, more immersive 3D experience to cinema audience, provide a higher quality 3D device and reduce the cinema operational cost for cinema.

High Brightness:

The transmittance of the system is increased from 36% to 70% and the light efficiency is increased up to 28% that even single projector can support a big screen.

High Definition Image:

By adopting unique contrast-enhanced technology, the contrast rate reaches up to 150:1 or above which bring you amazing 3D stereoscopic images.

Smoother movie-going Experience

Fully support 24fps/48fps/60fps. Motion-blur can be dramatically reduced that the system can deliver smooth motion and vivid picture quality to the cinema audience.

Cost Saving:

With Turbo Screen system, cinemas can use lower brightness projector bulbs for projection without sacrificing brightness, which reduces operating costs.

More compatible:

Turbo Screen is suitable for projection hall with minimum projection distance of 11 meters and supports 1:1.2 minimum throw ratio, enable you to bring 3D image quality to nearly any size screen.

2. System Features

Electrical Features

Power supply: AC 100~240V 50/60 Hz

Sync Input: GPIO (37PIN) or 3D interface (15PIN)

Power consumption: 12W

Optical Features

Light transmittance: > 70%

Light efficiency: > 28%

Contrast: >150:1

Ghosting rate: <2 %

Frame rate: support 24fps/48fps/60fps

3. Requirements on Cinema Environment

Projection distance: 11~30m

Throw ratio: 1.2:1 or above

Polarized glasses: circular polarized 3d glasses

Silver screen gain: ≥ 2.4

Projection window glass: do not use tempered glass or polarized glass

Projection window size: >400*300mm

Distance between projector lens and window: >400mm

Projector lens diameter: < 150mm

4. Digital Projector Setting

Black Time: 450us

Delay Time: 0us



5. System components:

Each Turbo Screen system includes following components:

Optical Unit, System Bracket, Power Adapter, Power cord Box, SYNC Cable, Motor Driving Signal Cable

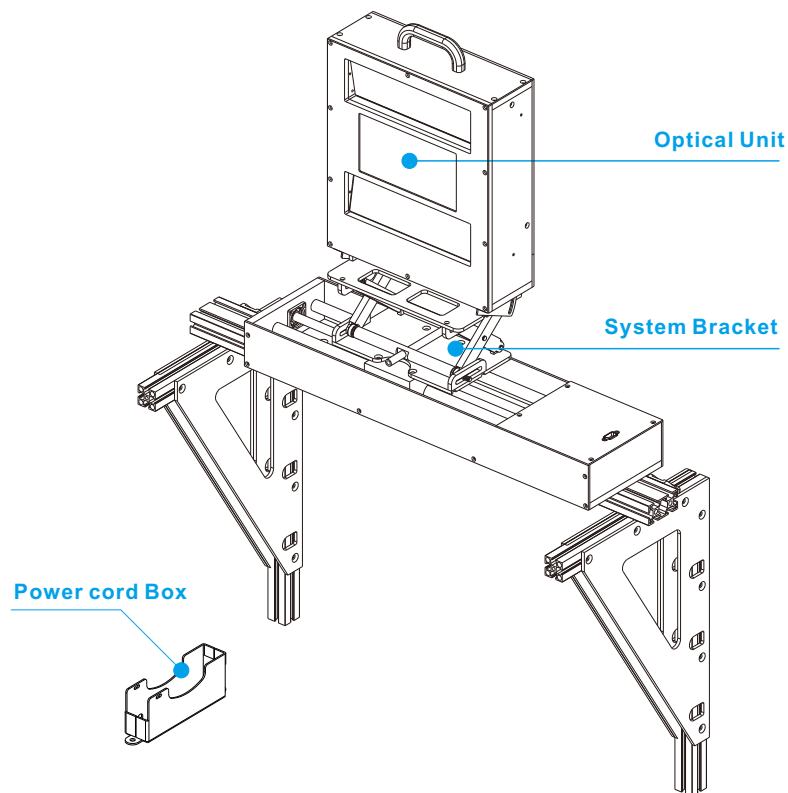


Figure 5-1 System Components

Turbo Screen system size: 800*350*1050mm, total weight is about 32KG. Turbo Screen is composed of valuable optical elements. Please handle with care to avoid damage.

5.1 Turbo Screen

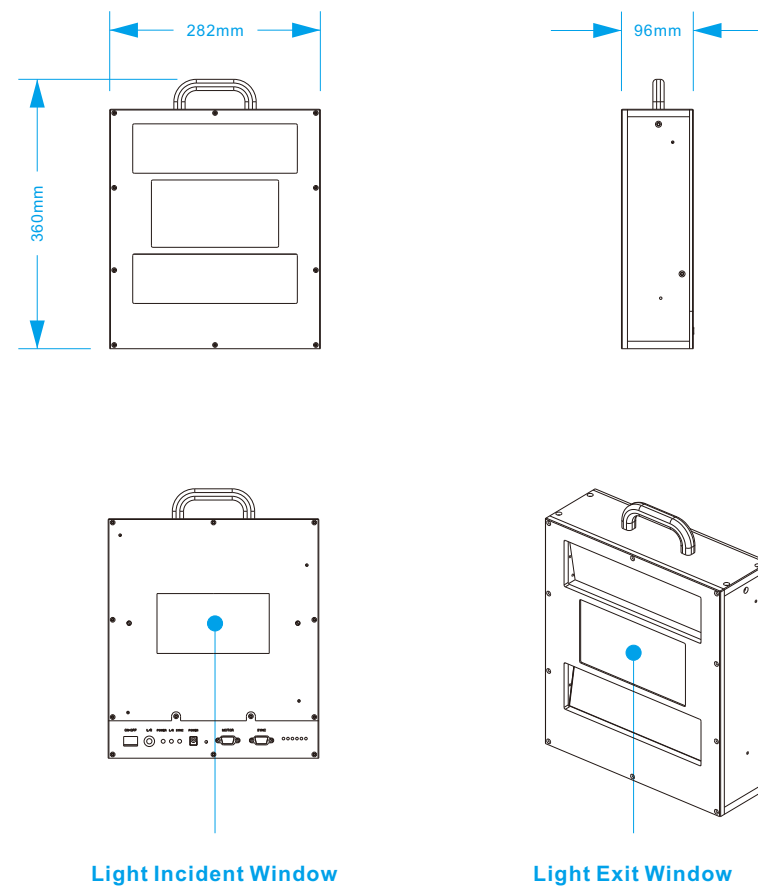


Figure 5-1-1 Optical Unit

Optical Unit is composed of valuable optical elements. Dimensions: 282*96*360mm, weight about 10KG. It is an important part of Turbo Screen that requires professional installation.



5.2 System Components

Each Turbo Screen has a bracket to match with the projector stand. It can be used to adjust the Turbo Screen's height, angle, left and right as well as front and rear position to best fit the space of the Turbo Screen and projector. It receives signal from projector through **Signal SYNC Cable**, and identify the projector status of 2D or 3D, and move to the right position.

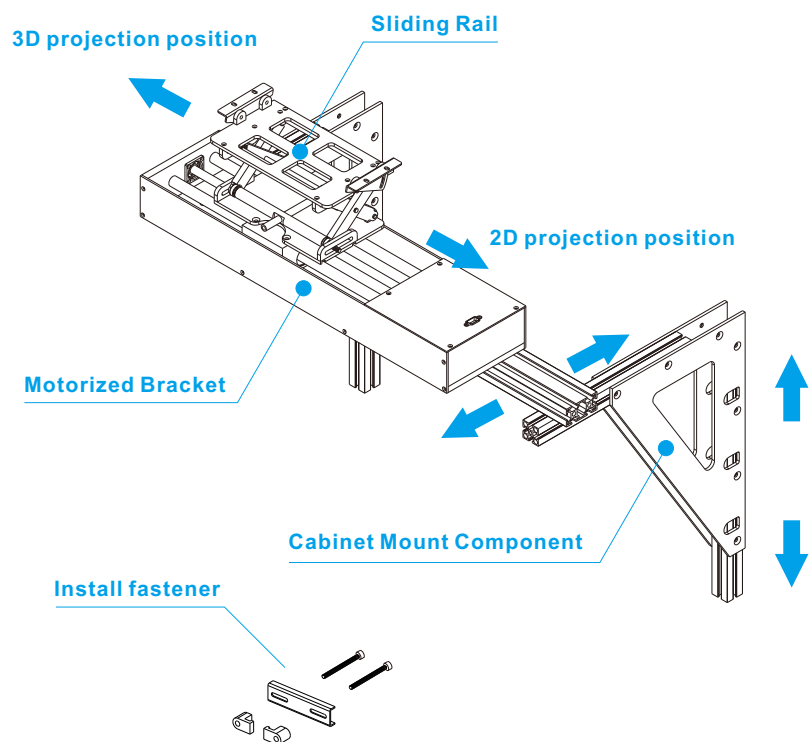


Figure 5-2 System Components

6. System Installation

6.1 Install cabinet mount components: adjust height and length of cabinet mount components, and fix the components to the projector cabinet with fastener, as shown in **Figure 6-1**.

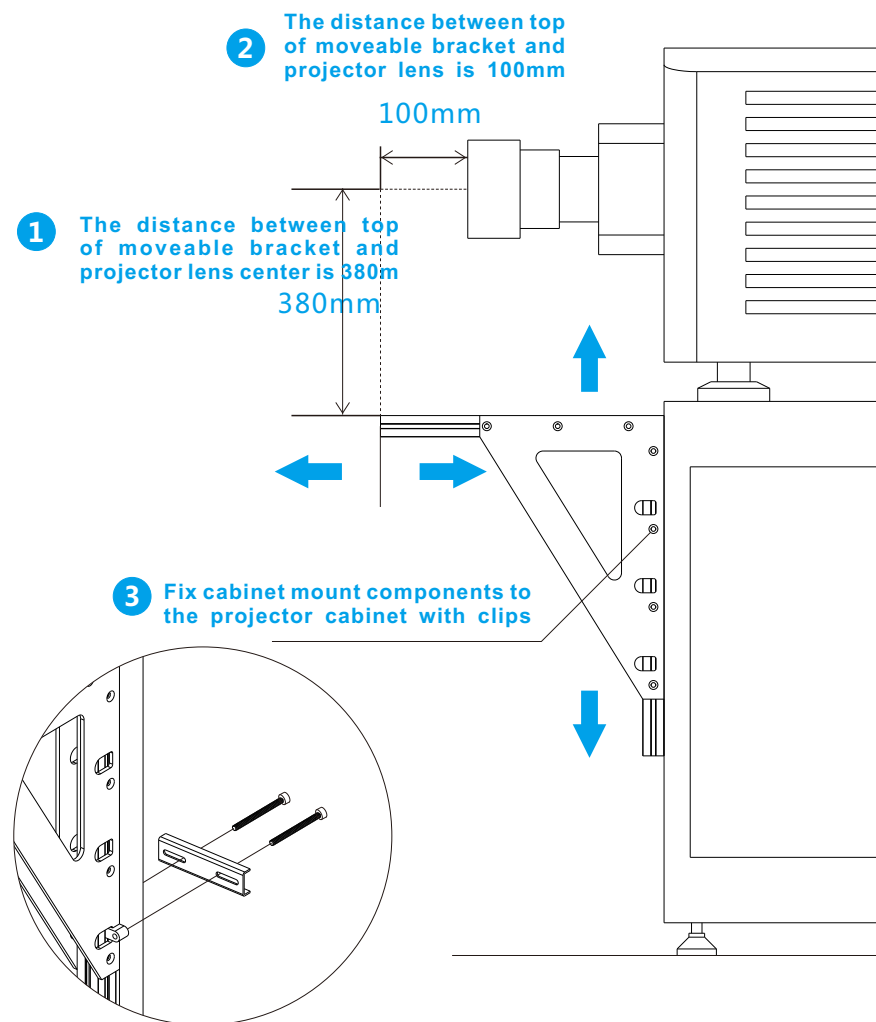


Figure 6-1 Install Cabinet Mount Components



6.2 Install Motorized Bracket

Fix aluminum section (30*60*800mm) to the cabinet mount components with L shape block, and then install the motorized bracket to the aluminum section, as shown in **Figure 6-2**.

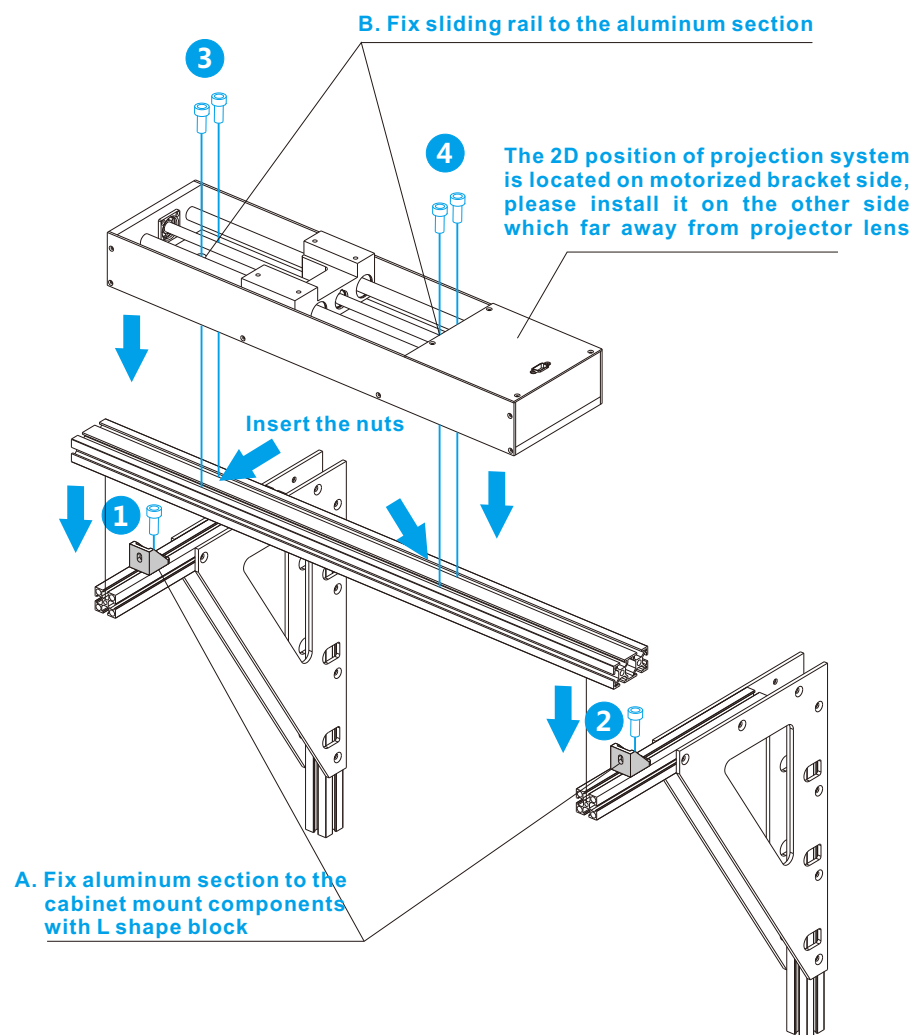


Figure 6-2 Install Motorized Bracket

6.3 Install lifting gear and optical unit

Fix lifting gear to the motorized bracket, and then install the optical unit into the lifting gear, as shown in **Figure 6-3**.

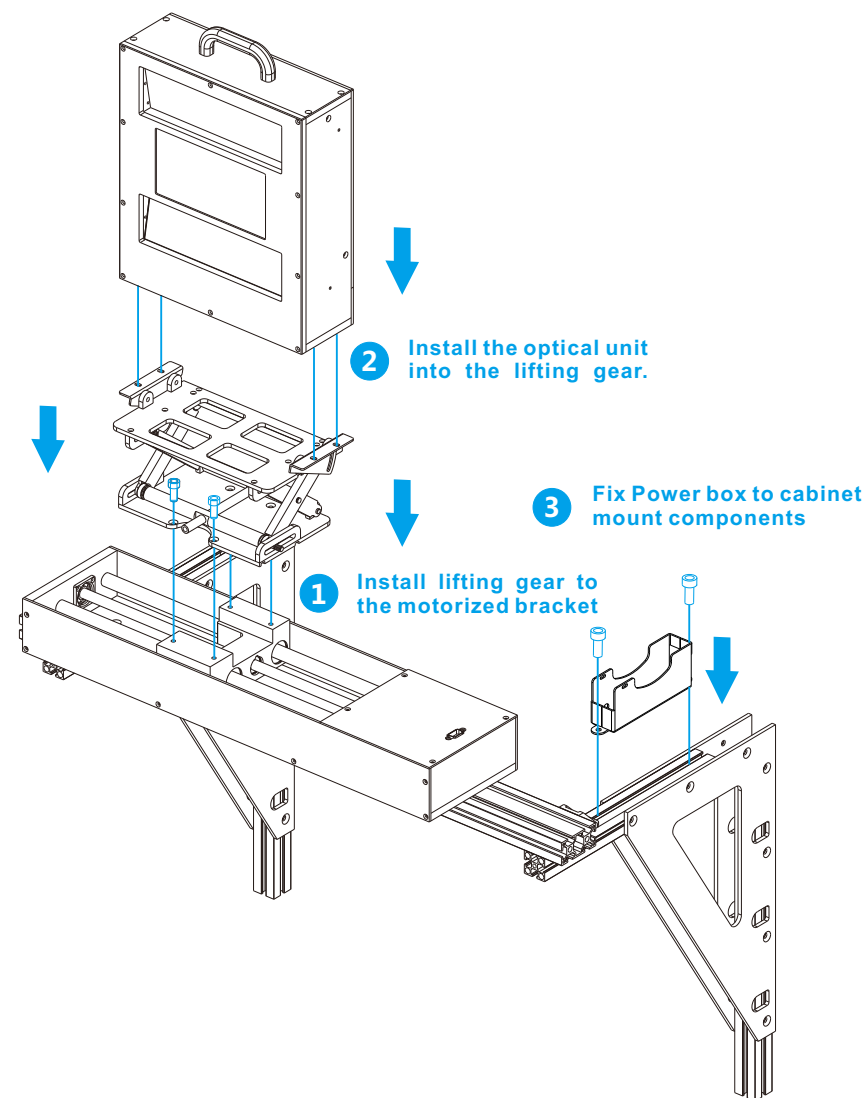


Figure 6-3 Install lifting gear and optical unit



7. System Connection

7.1 System Connection

Optical Unit (MOTOR interface)----- Motorized bracket (Motor driving signal interface)

Optical Unit (SYNC interface) ----- Digital Projector (GPI/ O or 3D Interface)

Optical Unit (POWER interface) ----- Power Adapter (24V 3.75A input)

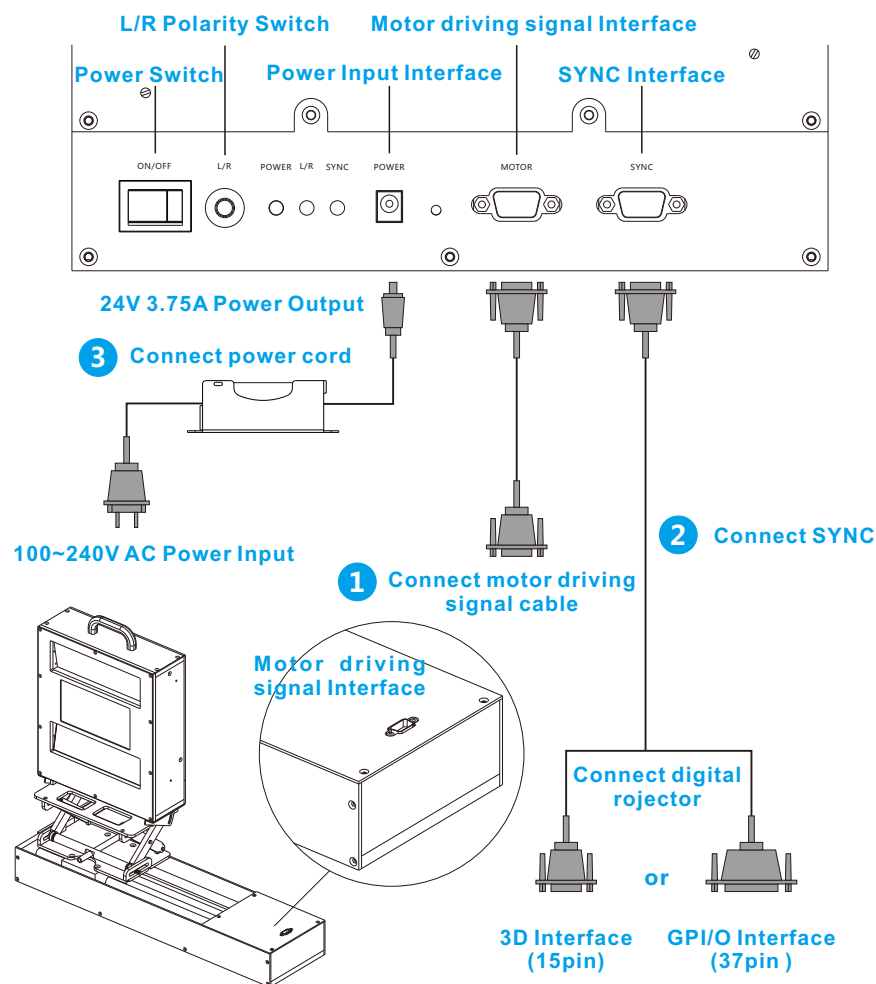


Figure 7-1 System Connection

7.2 LED status indicators

After the connection is completed, turn on the system and digital projector to play 3D movie, check the cables are connected correctly by observing the LED status indicators on the front panel, as shown in **Figure 7-2**.

Turn on the system and digital projector to play 3D movie, check the LED status indicator

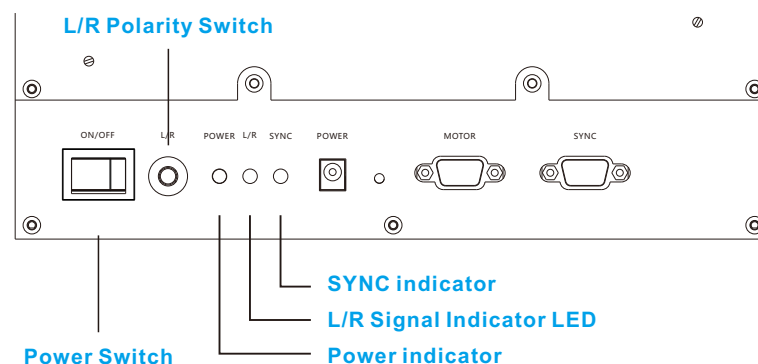


Figure 7-2 LED Status Indicators

POWER indicator:

when illuminate green, status ok. When off, check the power cord is connected properly.

SYNC indicator:

When illuminated green, 3D signal is detected. When off, not detected, check the 3D sync cable is connected properly and the projector is set correctly.

L / R indicator:

When illuminated green, L/R polarity signal is detected. Press L / R button to switch left/right picture if the screen image is not correct.



8. System Positioning

8.1 Set the initial position of optical unit:

power on optical unit and the digital projector to play 3D movie, the optical unit will move automatically to the side which close to the lens of digital projector; Fine adjust optical unit position to align light incident window right in front of digital projector lens, as shown in **Figure 8-1**.

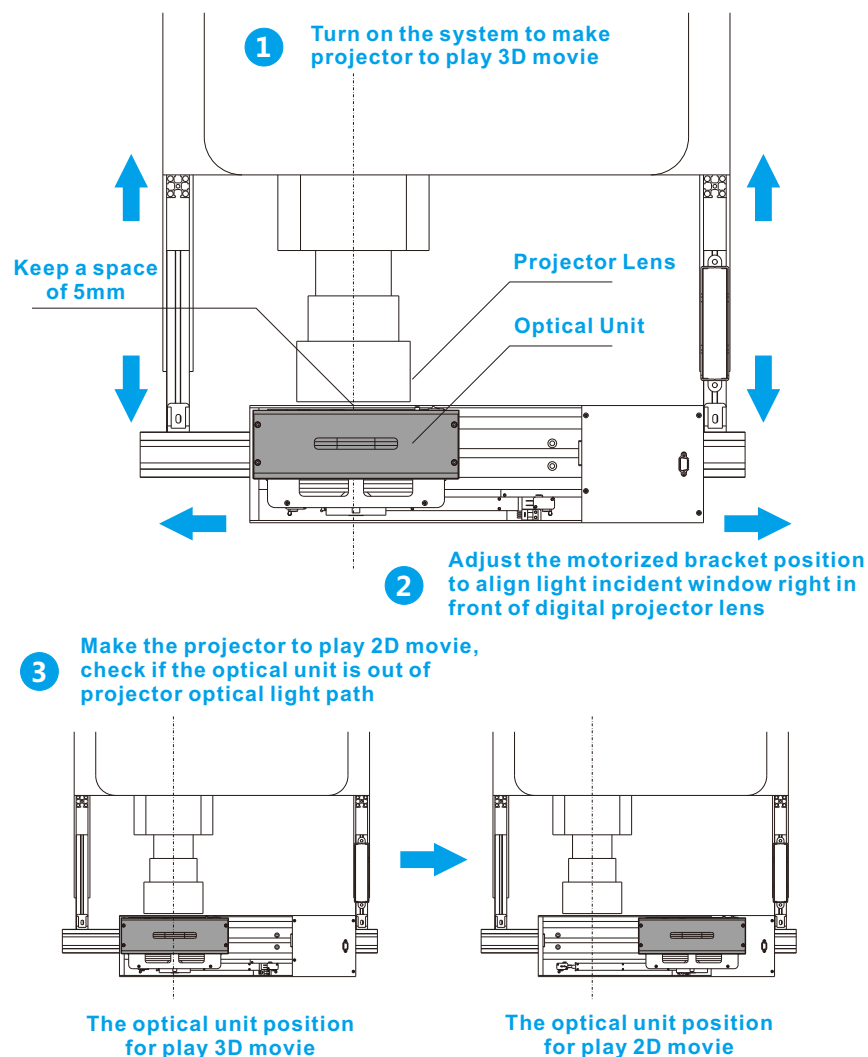


Figure 8.1 Set the initial position of optical unit

8.2 Height and angle fine adjustment:

Turn on the digital projector and load cross calibration pattern from the projector, briefly adjust position of up and down, left and right, center the position of the pattern on the light exit window, as shown in Figure 8-2.

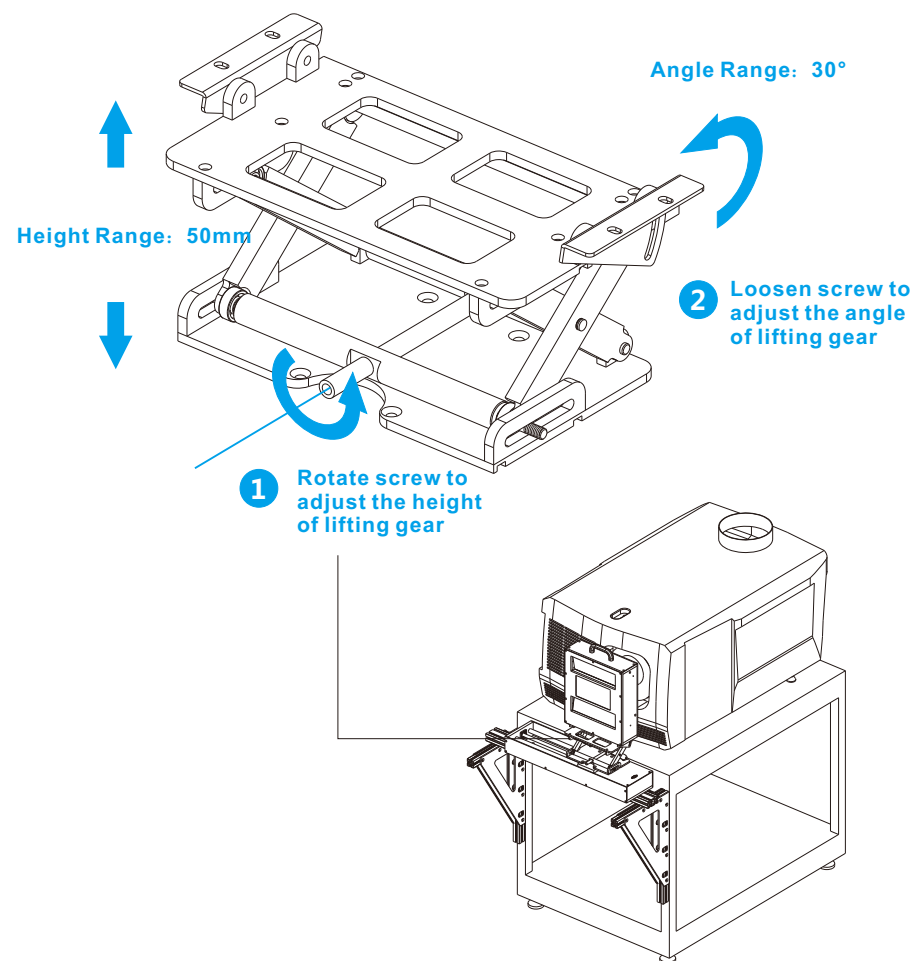


Figure 8-2 Adjust the Height and Angle of Lifting Gear



9. System Optical Alignment

Clear 3D imagery synthesis depending on the upper and lower beam image position and the middle beam image size.

9.1 The upper and lower beam position adjustment

Adjustment screws are located on the back of optical unit. Use left adjustment screw to adjust up/down position of upper and lower beam. Use right adjustment screw to adjust left/right position of upper and lower beam, as shown in **Figure 9-1-1**.

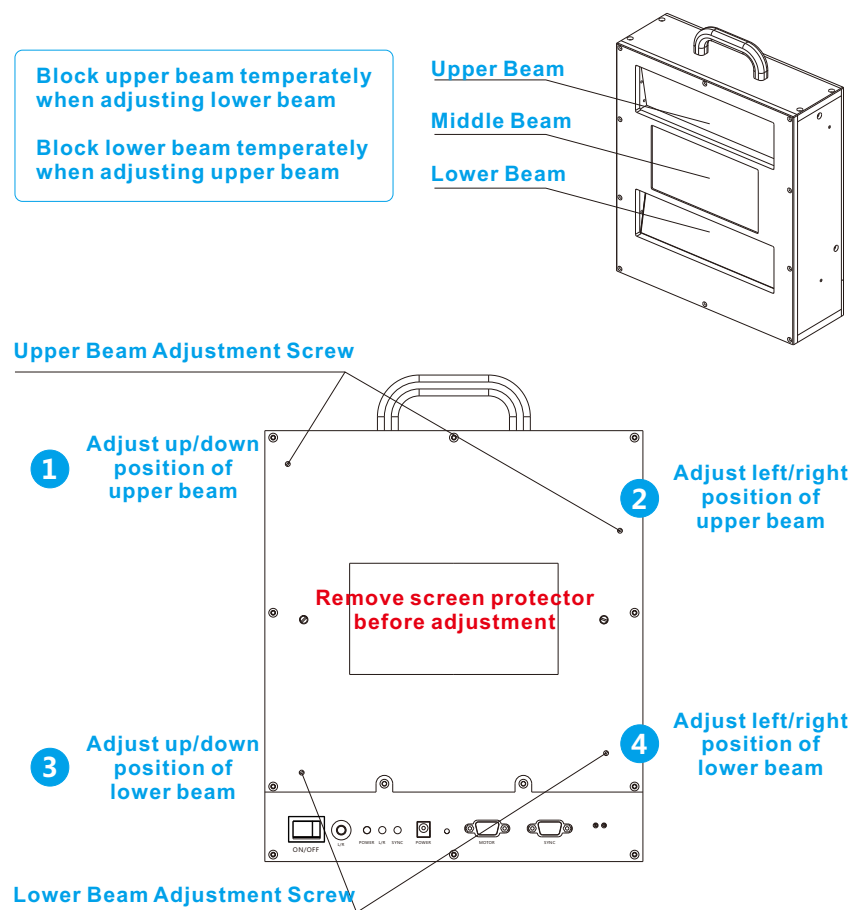


Figure 9-1-1 Fold Mirror Adjustment

Position projector lens focuses on the screen, fine adjust upper beam and lower beam position to coincide the cross calibration pattern align with middle beam, when finish, adjust the size of middle beam image to center align the whole page, as shown in **Figure 9-1-2**.

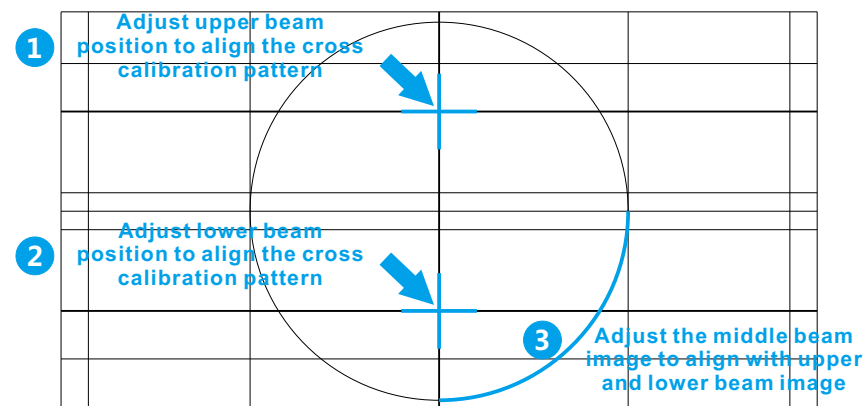


Figure 9-1-2 Apply the Correction by Adjusting the Fold Mirror

9.2 Adjust middle beam image size

The middle beam image size adjustment screws are located on both sides of the light incident window. Adjust middle beam image to align with upper and lower beam image, as shown in **Figure 9-2**.

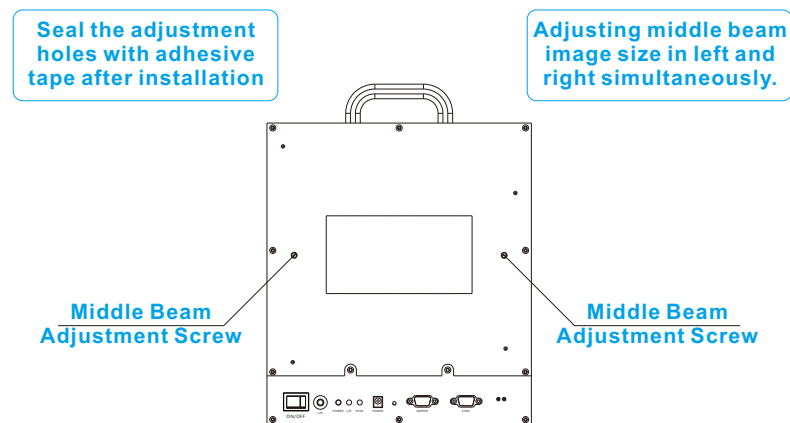


Figure 9.2 Holes for adjusting middle beam image size



10. Cautions

Remove screen protector from Turbo Screen after installation.

Use adhesive tape to seal the adjustment holes in the back of the system after installation to avoid the optical elements get contaminated by dust.

The surface of Turbo Screen should be cleaned periodically. If the surface becomes clogged by dust or the like, internal optical elements may be contaminated.

Turbo Screen system is composed of precision optics with invisible coating on the surface, use microfiber dust-free cloth and electronic-grade ethanol to clean the light incident window and light exit window.

Check the light incident window and light exit window with bright light to make sure all stain is gone.

Please turn off the power when system is not in use.

Turbo Screen system is frangible, do not throw or toss the system during transportation.

Do not touch the light incident window and light exit window directly with your hands.

Power off the system when it is not in use.

Please use Freedeo polarized 3D glasses when watching 3D movies, to avoid ghosting and color cast problems.

※Please operate under the guidance of professional personage.
Any damage caused by vandalism is NOT covered under warranty

