

# *Cine*VERSUM

## THEATRE Concept ASSEMBLY AND CALIBRATION



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### Did you know that ?



Henri Chrétien

The process of anamorphosing optics was originally developed by French professor Henri Chrétien during World War I to provide a wide angle viewer for military tanks. The optical process was called Hypergonar by Chrétien and was capable of showing a field of view of 180 degrees. After the war, the technology was first used in a cinematic context in the short film "Pour Construire un Feu" (To Build a Fire) in 1927 by French movie director Claude Autant-Lara.

Anamorphic wide screen was not used again for cinematography until Twentieth Century-Fox bought the rights to the technique in 1952 to create their CinemaScope wide screen technique. CinemaScope was one of many wide screen formats developed in the 1950s to compete with the popularity of television and bring audiences back to the cinemas. The Robe, which premiered in 1953, was the first feature film released that was filmed with an anamorphic lens.

Although CinemaScope was capable of producing a 2.66:1 image, the addition of multichannel sound reduced this to 2.55:1. Theater owners, however, were dissatisfied with contractually having to install three or four-track magnetic stereo, and because of the technical nature of sound installations, drive-in theaters had trouble presenting stereophonic sound at all. Due to these conflicts, Fox revoked their policy of stereo-only presentations, and added an optical sound track, while keeping the magnetic for those theaters that chose to present their films with stereophonic sound. The addition of the optical sound track reduced the width of the presented aspect ratio further to 2.35:1.

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### **Assembly Instructions:**

This product is designed to be used in private homes.

Correct assembly is essential for the long life and functionality of your THEATRE system.

Please observe the following points carefully.

### **Technical data:**

- WxDxH: 424mm x 470mm x 124mm.
- Maximum load: 40 Kg in ceiling position.
- Net weight: 6.2 Kg (excluding lens)
- Adjustable 12° up and down.
- Auto-secured hook system.

### **Notes on safety:**

- The mount is intended for fixing to the ceiling or table mounting.
- Before attaching the base to the mount check it thoroughly for any damage.
- Never use defective parts.

### **Before assembly:**

- It is expressly recommended to have installation carried out by a specialist.
- Make sure that the quality of the ceiling is sufficient to hold the weight of the projector plus that of the mount. If there is any doubt regarding the condition and load of the ceiling, please consult a specialist from building trade.
- The fixing materials must be suitable for the type of wall so that the maximum load can be guaranteed. For this reason no fixing materials have been included with the ceiling mount. Please check a specialist, giving the relevant details.
- Also make sure that there are no electricity cables or gas/water pipes in the ceiling.
- Before assembling, check the location of the nearest main socket.

**NB: CineVERSUM accepts no liability for damages caused by incorrect assembly or by improper use.**

### The THEATRE concept:

The Theatre system is the ultimate all-in-one solution to watch Cinemascope® movies on a real 2.35:1 screen.

Featuring a motorized slider for the Anamorphic Lens, the Theatre system is a versatile solution to operate a 16:9 native resolution projector to display on demand, a Cinemascope® movie with no more black bars, nor loss of brightness and at the full resolution of the projector.

The Anamorphic System is used to move the THEATRE Anamorphic Lens in front of the projector optical lens to transform the projected picture format from 16:9 to 2.35:1 aspect ratio.

The Theatre system can be remotely controlled via radio-frequency, RS-232 or Infrared remote control\*.



### Projection Distances and setting up the Anamorphic system:

The projected picture is enlarged horizontally during the process by a factor of 1.33x. For this reason, the projection distance would be reduced by a factor of 1.33x when projecting on a 2.35:1 format screen (wider format) instead of a 16:9 screen.

If you plan to watch both 16:9 and Cinemascope® contents, we recommend to use a 2.35:1 format screen with lateral masking such as curtains to obtain the greatest viewing impact.

The Theatre system requires a calibration to perfectly match your system within the offset and shift setting used with your projection screen. The scaler possesses test patterns that can be used to calibrate the system in both 16:9 and Cinemascope® formats.

#### Useful test patterns:

Menu -> Configuration -> Test Patterns -> Frame Geometry, Xhatch Coarse, Xhatch Fine, Focus.

#### Projection Distances:

Diagonal (2.35:1)	Width	minimum Distance	maximum Distance
107" (272 cm)	99" (250 cm)	157" (400 cm) (**)	204" (519 cm)
128" (325 cm)	118" (300 cm)	157" (400 cm) (**)	244" (620 cm)
149" (378 cm)	137" (349 cm)	165" (420 cm)	284" (722 cm)
170" (431 cm)	157" (398 cm)	188" (479 cm)	324" (824 cm)

(\*) The scaler Master Three is required for RS-232 and infrared commands.

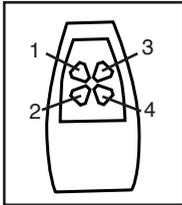
(\*\*) The minimum projection distance is 157" or 4 meters.

### Remote Control Unit:

The THEATRE system uses Radio-Frequency signals to operate, make sure that it complies with local recommendations before installing:

- Receiver frequency 433.92 Mhz
- Intermediate frequency +/- 70 KHz
- Bandwidth +/- 300 KHz
- Modulation type AM/ASK

### Description:



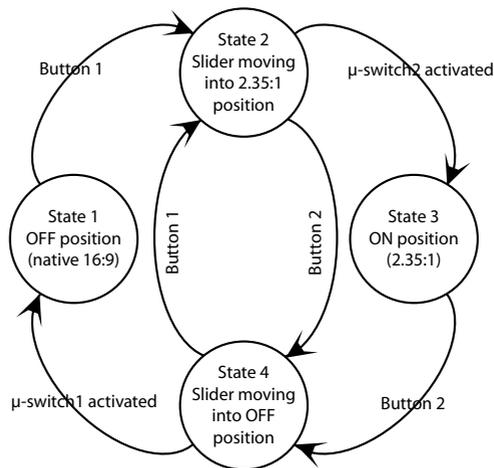
The RCU has 2 pairs of buttons:

- Button 1 (normal position) and Button 2 (Cinemascope®)
- Buttons 3 and 4 (optional control)

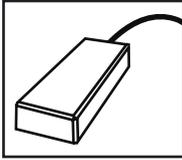
The THEATRE system is already programmed to operate with buttons 1 and 2. The optional buttons 3 and 4 can be used to control an external system such as standard RF Motorized screen or screen masking.

### State diagram using the RCU:

The Anamorphic slider is controlled by button 1 and 2 of the RCU. The  $\mu$ -switches are electronic devices that control the start and stop of the slider movements, OFF position and ON position respectively.



### RF-emitter for 12 V Trigger:



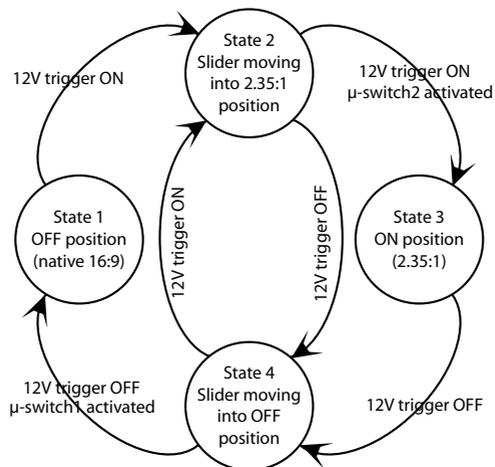
The RF-Emitter uses a 3,5 mm mono jack to operate.

-When the RF-Emitter receive 12V, the Anamorphic slider will move into 2.35:1 position (ON position).

-When RF-Emitter receive 0V, the Anamorphic slider moves back the slider into 16:9 position (OFF position).

### State Diagram using the 12 V Trigger:

The Anamorphic slider can also be controlled by a standard 3,5 mm jack 12-Volt trigger. When a 12V is applied to the RF-Emitter, the slider moves to the ON position. When the voltage is 0V, the slider moves back to the original position (OFF position).

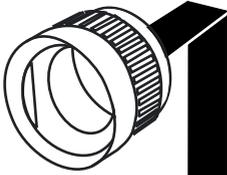


### IMPORTANT:

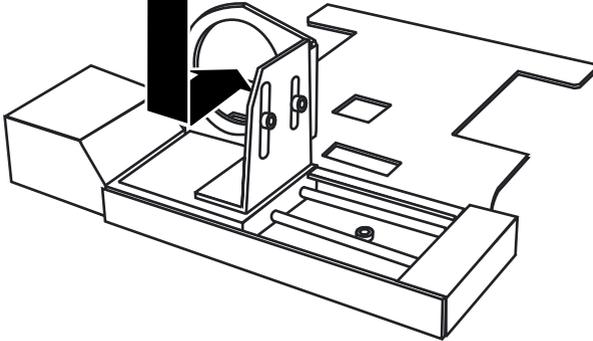
As both the RF-Emitter and RCU send control commands to the slider, be sure that they don't send opposite orders.

**Mounting the Anamorphic Lens (fig. A-B)**

**A**

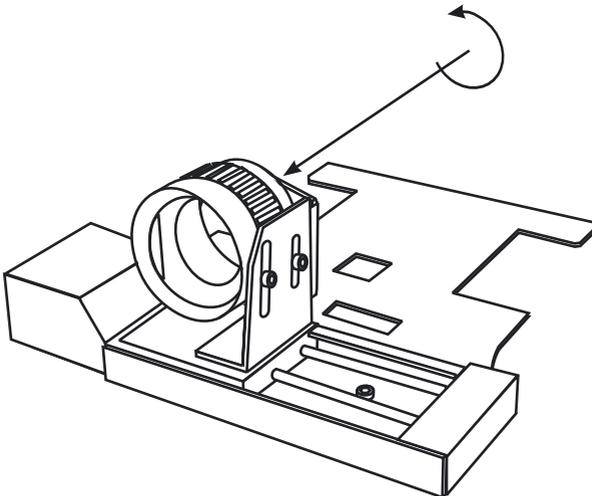


Attach THEATRE Anamorphic Lens to the slider ring.

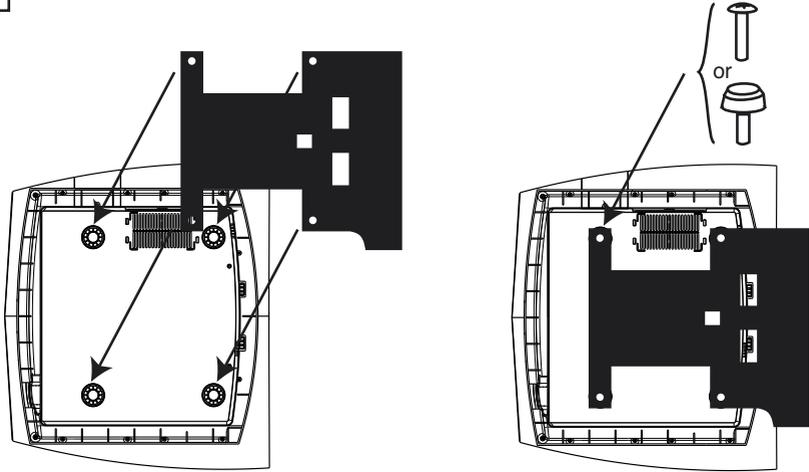


**B**

Tighten the four fixing screws to fix the lens.



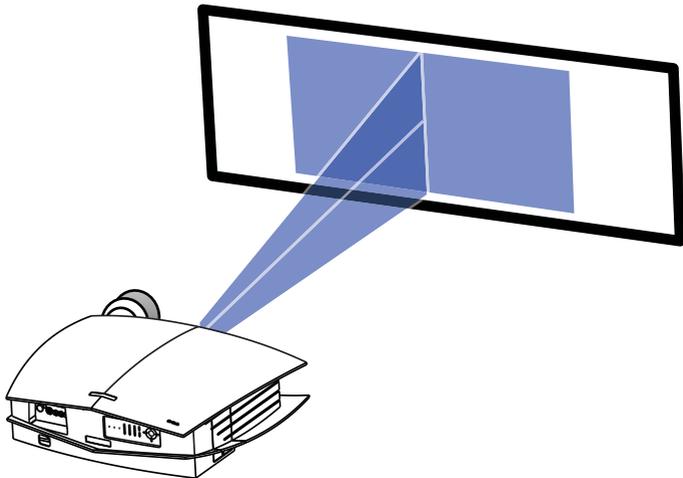
C

**Mounting the THEATRE System to the Projector (fig. C)**

Place the support plate at the bottom and fix it to the projector using:

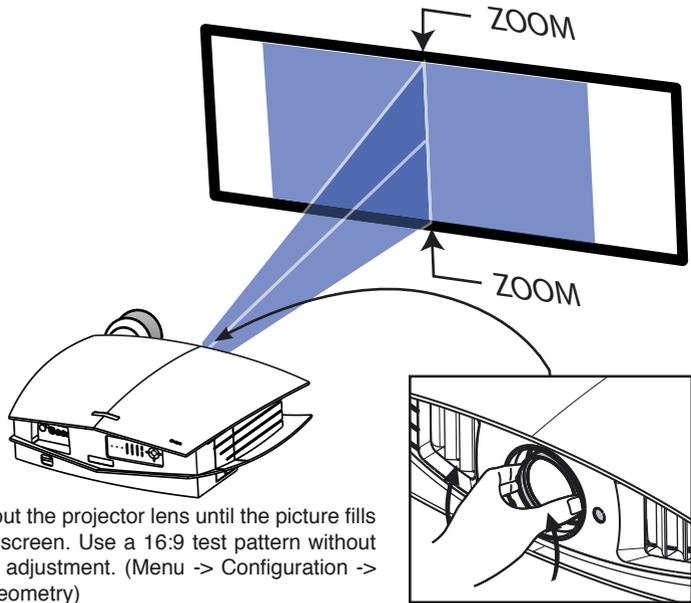
- the 4 fixing screws for ceiling mounting
- the 4 original feet for table mounting

D

**Adjustments in 16:9 position, without Anamorphic Lens (fig. D-F)**

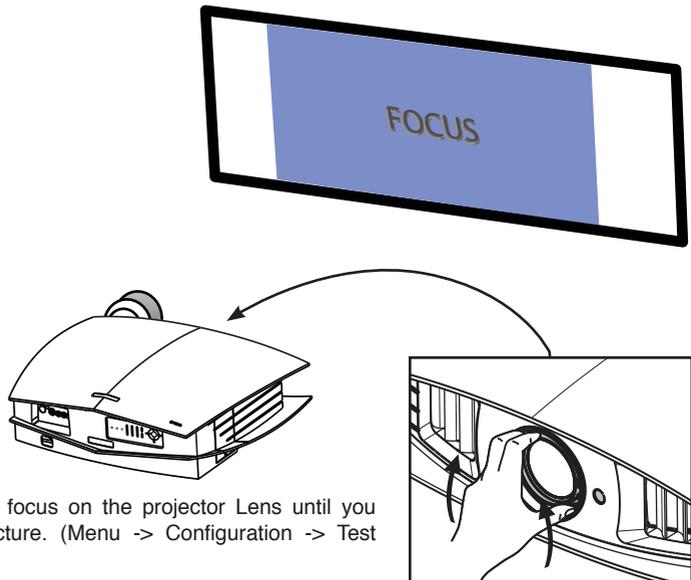
When installing the THEATRE System, you must set up the projector without the Anamorphic Lens at first. Set both vertical and horizontal offset so that the picture is located in the center of the screen.

E



Zoom-in or zoom-out the projector lens until the picture fills the height of your screen. Use a 16:9 test pattern without black bars for this adjustment. (Menu -> Configuration -> Test Patterns -> Geometry)

F



Adjust the picture focus on the projector Lens until you obtain a clear picture. (Menu -> Configuration -> Test pattern -> Focus)

**G****Switch from 16:9 to 2.35:1 (fig. G-H)**

Press RCU button 1 or apply 0 Volt to the RF-emitter to move the Anamorphic lens out of the projector beam.

**Scaler settings:**

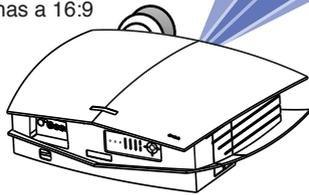
Menu -> Input AR -> Frame AR -> 16:9

Menu -> Input AR -> Active AR -> 1.78

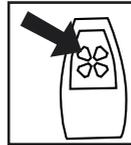
Menu -> Output Setup -> Lens -> Mode 1-Auto

Menu -> Output Setup -> 12V Trigger2 -> THEATRE

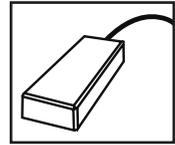
The picture obtained has a 16:9 aspect ratio.



button 1



0 Volt

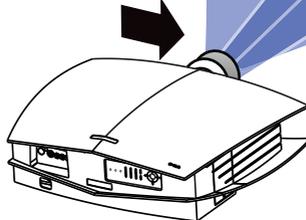
**H**

Press the RCU button 2 or apply 12 Volts to the RF-emitter to move the Anamorphic lens in front of the projector beam.

**Scaler settings:**

Menu -> Input AR -> Active AR -> 2.35

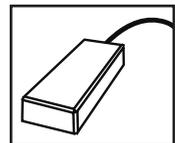
The picture format changes to Cinemascope® (2,35:1 format) and fulfills the screen.



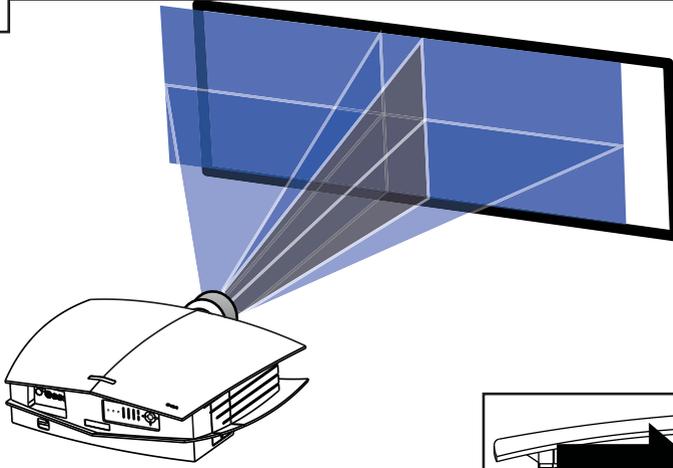
button 2



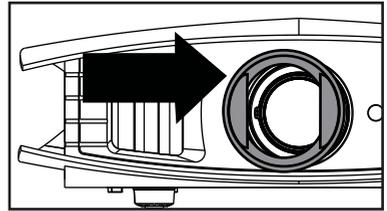
12 Volts



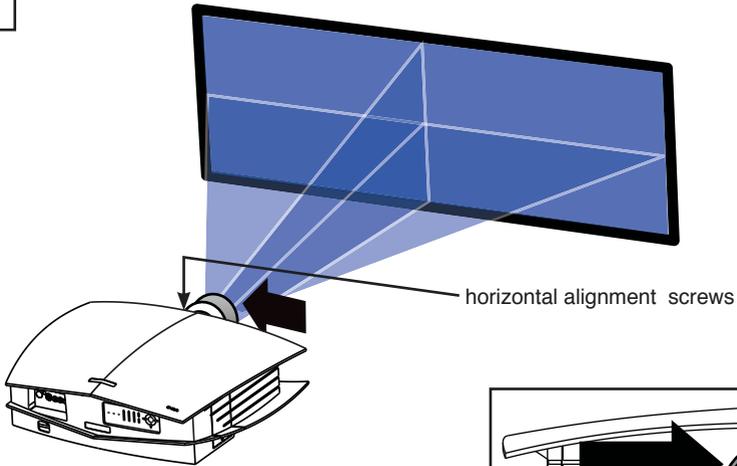
I Horizontal alignment in 2.35:1 position, with Anamorphic Lens (fig. I-K)



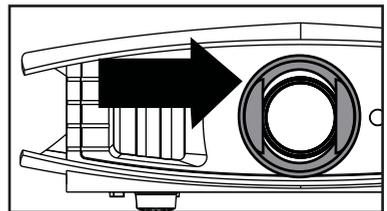
If the Anamorphic Lens is not aligned with the projector beam, the picture obtained is not centered into the 2.35:1 screen.



J

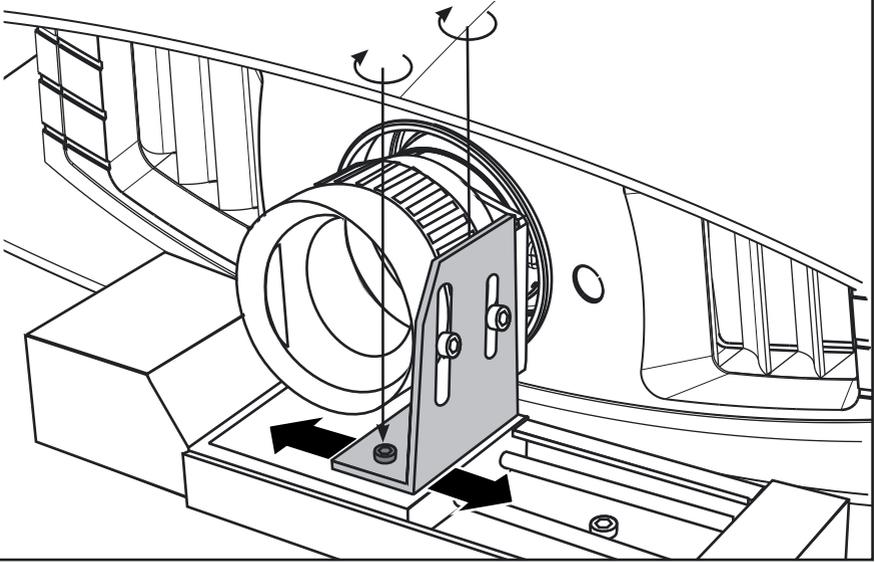


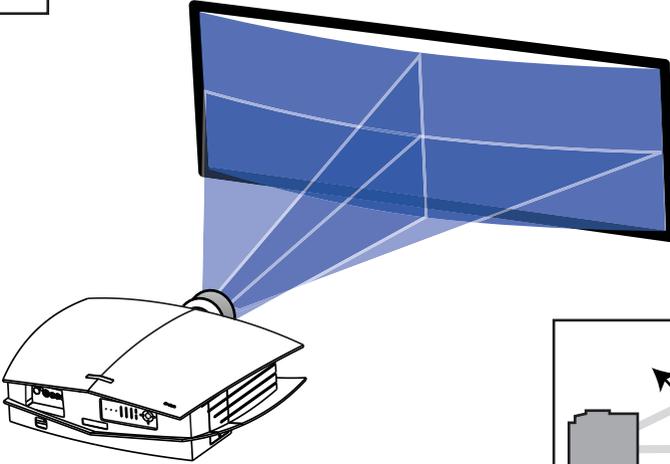
To align the picture with the screen, move the THEATRE Lens on the horizontal axis until the projected picture fulfills the screen.



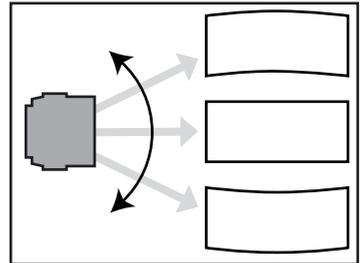
K

Locate the screws indicated below to set the horizontal alignment.  
Tighten the screws when the setting is completed.

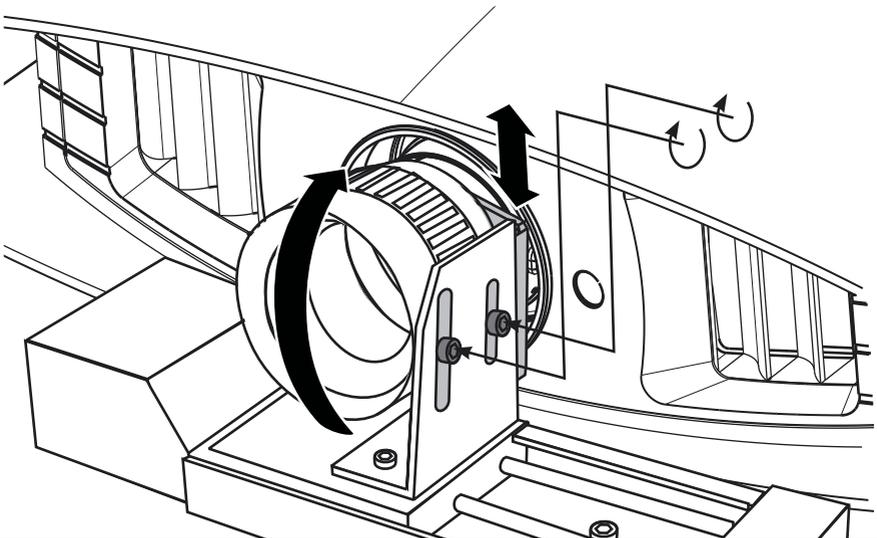


**L****Setting vertical position and tilt (fig. L-M)**

A pincushion distortion appears when the Theatre lens is not aligned with the projector beam on the vertical axis. Use the Xhatch fine Test Pattern to set the lens tilt.

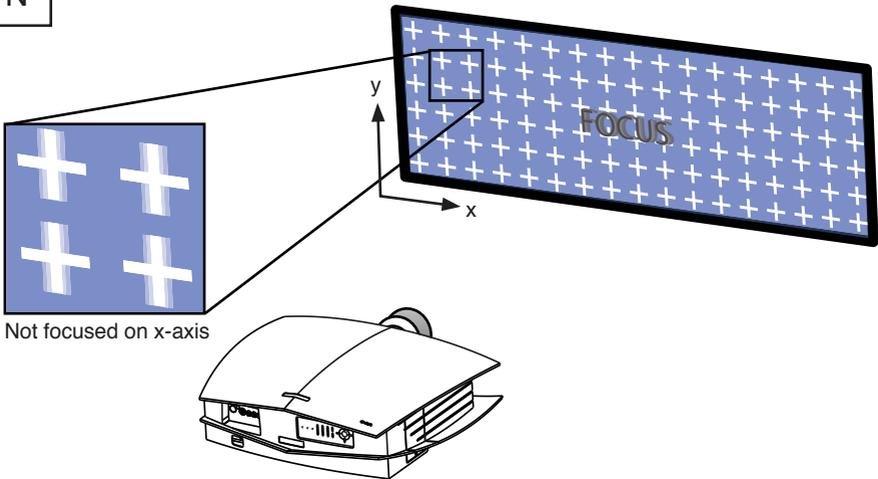
**M**

Locate the screws indicated below and release them to set the lens tilt. Set the vertical position of the lens so that the projector beam passes through the center of the lens. Tighten the screws when the setup is completed.



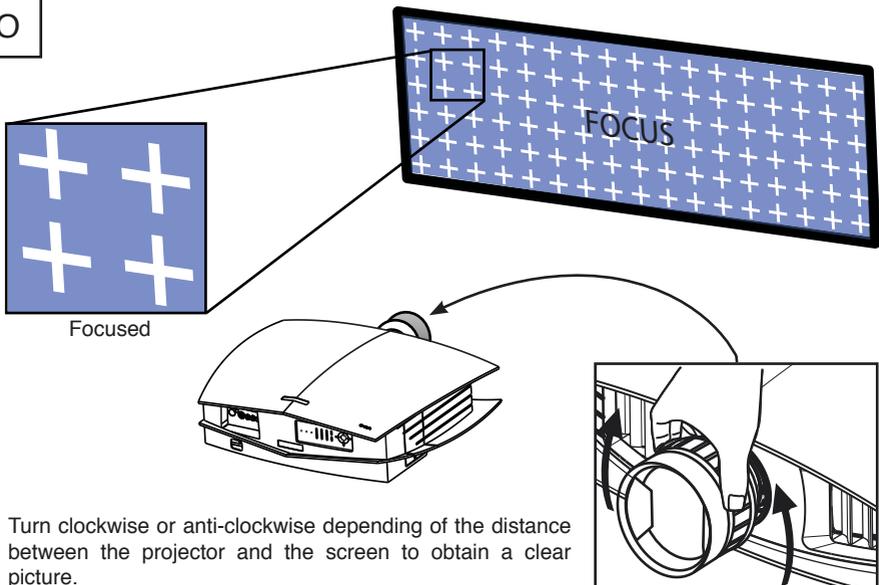
N

## Focus adjustment (fig. N-O)



The Theatre Anamorphic Lens features a 6-turns focus ring. The focus adjustments is required only on the horizontal axis. Use the 'Focus' test pattern available with the scaler: MENU -> Configuration -> Test Patterns -> Focus.

O

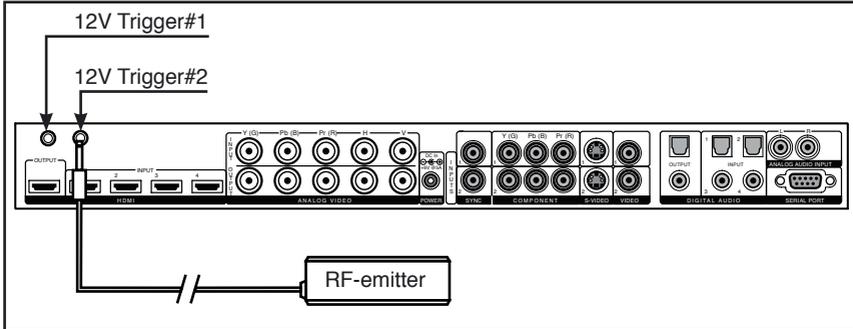


Turn clockwise or anti-clockwise depending of the distance between the projector and the screen to obtain a clear picture.

## Scaler settings and 12V Trigger configuration:

The output “12V Trigger#1” is active when the scaler is powered ON. It can control a screen opening by example.

Connect the RF-Emitter supplied to the scaler output “12V Trigger#2” located at the back of the unit.



Back of the Master Three

### Recommended settings:

- Menu -> Input AR -> Frame AR -> 16:9
- Menu -> Input AR -> Active AR -> 1.78
- Menu -> Output Setup -> Aspect Ratio -> Lens -> Mode1-Auto
- Menu -> Output Setup -> 12V Trigger2 -> THEATRE

Upon changing the Input Active AR to 2.35:1 or User -> 2.33 or greater, the 12V Trigger#2 is automatically switched to Active and a vertical stretching is applied to the picture.

### Watching 16:9 and 2.35:1 movies on the same input

When projecting an animation movie which is in 16:9 format, you should set the Input Active AR to 1.78 (16:9), the 12V Trigger#2 is Inactive, and no vertical stretching is applied.

Upon swapping the animation to a 2.35:1 Cinemascope® movie, change the Input Active AR settings:

Menu -> Input AR -> Active AR -> 1.78

Menu -> Input AR -> Active AR -> 2.35

The 12V Trigger#2 becomes active and the Anamorphic Lens is driven before the projector beam, the picture is also vertically stretched to get a perfect picture on the 2.35:1 screen.

### Quick access buttons on the Remote Control Unit

- “Aspect” button features a direct access to the “Active AR” menu.
- “16:9” button sets the Active AR to 1.78, removes the Anamorphic Lens and disable the vertical stretch when 12V Trigger2 is set to “Theatre Mode”.
- “Viewing Mode” button features a direct access to 12V Trigger2 menu: press sequentially to switch the 12V Trigger2 to OFF, ON and THEATRE. The vertical stretching is maintained if the Active AR is greater than 2.33:1

To get further information on the Master Three menus, THEATRE Mode and RS-232 codes, please consult the scaler User Manual.

The scaler must have the 12V trigger optional card installed to have access to these menus.

### Watching a Cinemascope® movie with subtitles:

Subtitles are decoded by your DVD-player and incrusted into the signal flow sent to your projector through its outputs. For this the reason, the subtitles position is determined by your DVD-Player. Make sure that your DVD-Player can output subtitles into the active frame when watching Cinemascope® movies.



When using a standard DVD-player, the subtitles are generally located into the black bars.(fig.1) If the DVD-player doesn't feature a subtitles position, the Cinemascope® picture would miss the characters in the black bars. (fig.2)



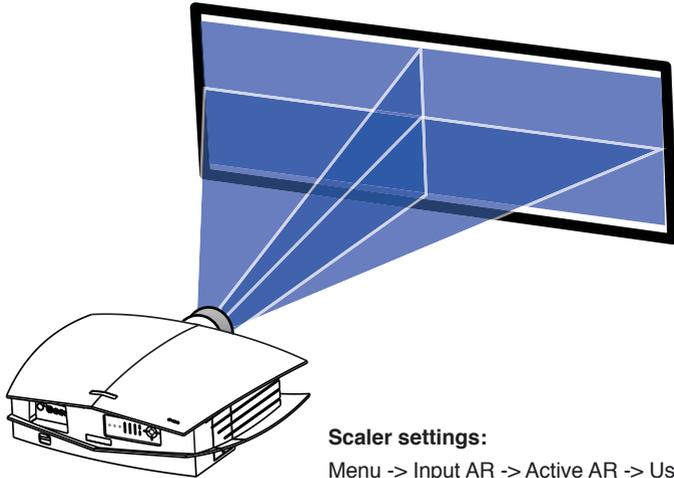
Thankfully, most of the DVD-Players handle subtitles position. Browse into your DVD-player menu for the subtitles option menu. Change the subtitles position in the active picture. (fig.3) No character will be missing when watching a Cinemascope® movie. (fig.4)



High-end DVD-Players feature a special "Stretched Mode" (also called "Anamorphic Mode") that can output an anamorphic picture with incrusted subtitles (fig.5). This mode renders the subtitles directly into the active picture and they use a smaller portion of the picture to be displayed (fig.6) compared to the previous configuration (fig.4)

### 2.40:1 movie into a 2.35:1 Cinemascope® screen:

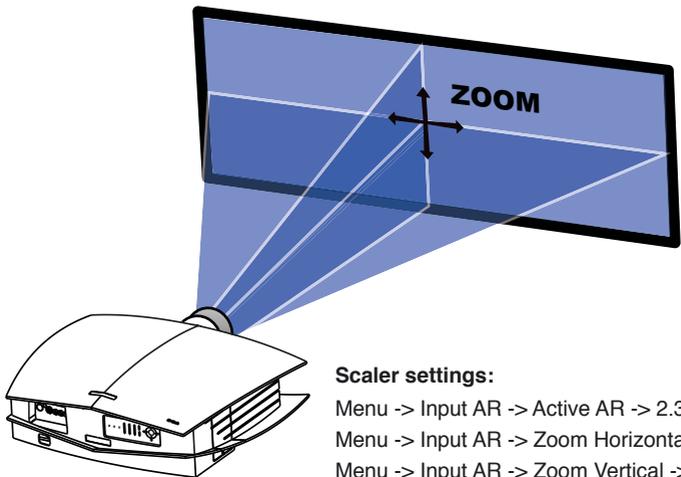
When projecting a movie with a different format from your screen, the picture obtained won't fill the total height of the screen. In the example below, the movie aspect ratio is 2.40:1 and the screen is 2.35:1.



#### Scaler settings:

Menu -> Input AR -> Active AR -> User -> 2.40

To eliminate the black bars projected onto the screen, you can apply either a general zoom or a vertical zoom to the picture until they disappear. When applying a vertical zoom, keep in mind that the recommended maximum distortion is 3%. Above this level, the distortion would become perceptible and could be disturbing.



#### Scaler settings:

Menu -> Input AR -> Active AR -> 2.35

Menu -> Input AR -> Zoom Horizontal -> 1.000

Menu -> Input AR -> Zoom Vertical -> 1.021



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