

# Galaxy SXGA+ Series



## Owner's Manual

R9040355 (Galaxy 4 Long Life+) - R9040360 (Galaxy 6 Classic+)  
R9040365 (Galaxy 9 High Contrast+) - R9040370 (Galaxy 12 High Brightness+)

**Barco nv Simulation Products**  
600 Bellbrook Ave, Xenia OH 45385  
Phone: +1 (937) 372 7579  
Fax: +1 (937) 372 8645  
E-mail: [eis@barco.com](mailto:eis@barco.com)  
Visit us at the web: [www.eis.barco.com](http://www.eis.barco.com)

**Barco nv Simulation Products**  
Noordlaan 5, B-8520 Kuurne  
Phone: +32 56.36.82.11  
Fax: +32 56.36.84.86  
E-mail: [info@barco.com](mailto:info@barco.com)  
Visit us at the web: [www.barco.com](http://www.barco.com)

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This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.



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# 1. SAFETY INSTRUCTIONS

## 1.1 Warnings

---

### To prevent personnel injury

The customer should never attempt to disassemble the lamp casing or to dispose of the lamp casing other than by returning it to BARCO.

To prevent injuries and physical damage, always read this manual and all labels on the system before connecting to the wall outlet, or adjusting the projector.

To prevent injuries, take note of the weight of the projector. Minimum 4 persons are needed to carry the projector.

NEVER look into the lens ! Due to the high luminance damage to the eye can happen.

Before attempting to remove the projector's cover, you must turn off the projector and disconnect from the wall outlet.

When performing set up work at a ceiling mounted projector, to prevent injury caused by falling objects or the system, set out a keep out area.

Consult a professional structural engineer prior to suspending the ceiling mount from a structure not intended for that use. Always ensure the working load limit of the structure supporting the projector.

The power input at the projector side is considered as the disconnect device. When mentioned to switch of the projector, to access some parts inside, always disconnect the power cord at the projector side.

### To prevent projector damage

If the Air Filters are not regularly replaced, the air flow inside the projector could be disrupted, causing overheating. Overheating may lead to the projector shutting down during operation.

In order to ensure that correct airflow is maintained, and that the projector complies with Electromagnetic Compatibility requirements, it should always be operated with all of it's covers in place.

Ensure that nothing can be spilled on, or dropped inside the projector. If this does happen, switch off and unplug the mains supply immediately. Do not operate the projector again until it has been checked by qualified service personnel.

The projector must always be mounted in a manner which ensures free flow of air into its air inlets and unimpeded evacuation of the hot air exhausted from its cooling system. Heat sensitive materials should not be placed in the path of the exhausted air.

Special care should be used when DLP projectors are used in the same room as performant laser equipment. Direct or indirect hitting of a laser beam on to the lens can severely damage the Digital Mirror Devices (TM) in which case there is a loss of warranty

### To prevent battery explosion

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

## 1.2 Restricted Access Location

---

### Installation in a Restricted Access Location

The projector can only be installed in a Restricted Access Location.

### What is a Restricted Access Location (Definition)?

Definition of a Restricted Access Location:

A location for equipment where both of the following paragraphs apply:

- Access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restriction applied to the location and about the precautions that shall be taken.
- Access is through the use of the TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

### What are the Reasons for the Applied Restriction?

The Air Outlet Grill on the side of the Projector can reach high temperatures due to the High Light Output Range of the lamp.

## 1. Safety Instructions

---

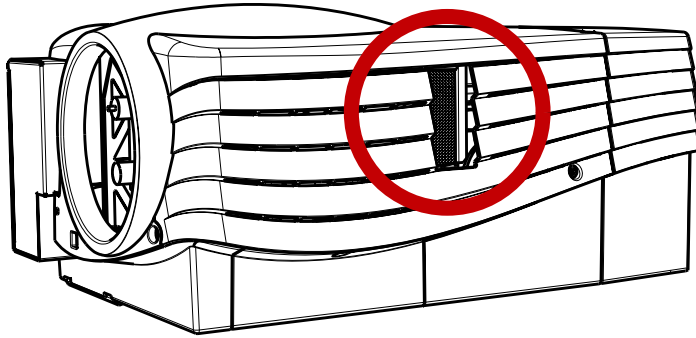


Image 1-1  
The Air Outlet Grill on the side of the Projector can reach high temperatures



**WARNING:** Do not touch this Air Outlet Grill when the projector is switched on, respect a cool down period of 10 minutes before touching this Grill, when switching off the projector!

---

### 1.3 FCC statement

---

#### Federal Communication Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference.

### 1.4 Note

---

#### Definitions

Definition Qualified service technicians or Qualified technicians : Persons having appropriate technical training and experience necessary to be aware of hazards to which they are exposed in performing a task and of measures to minimize the danger to themselves or other persons.

#### Extra Safety manual

Read also safety instructions in separate manual (R5976125).

## 2. PACKAGING AND DIMENSIONS

This chapter handles about the way the projector is packed and gives an overview of the dimensions.

- Box Content
- Projector Packaging
- Lens Packaging
- Dimensions

### 2.1 Box Content

#### Content

- 1 projector (weight  $\pm$  56 kg or 123.5 lbs without lens)
- 1 Remote Control Unit (RCU) + 2 Batteries 1,5V)
- 1 European and 1 American Power Cable
- 1 Owner's Manual

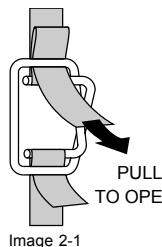
### 2.2 Projector Packaging

#### Way of Packaging

The projector is packed in a carton box. To provide protection during transportation, the projector is surrounded with foam. The package is secured with banding and fastening clips.

#### To unpack

1. Release the fastening clips.
2. Remove the banding. Handle as shown in the drawing. (image 2-1)
3. Take the projector out of its shipping carton and place it on a table.



**Save the original shipping carton and packing material, they will be necessary if you ever have to ship your projector. For maximum protection, repack your projector as it was originally packed at the factory.**



**CAUTION: Never transport the projector with the lens mounted on it !**  
Always remove the lens before transporting the projector.

### 2.3 Lens Packaging

#### Way of Packaging

Lenses are supplied as an individual item.

They are packed in a carton.

## 2.4 Dimensions

### Dimensions

The dimensions of the projector are given in mm and inch (25,4mm = 1 inch).

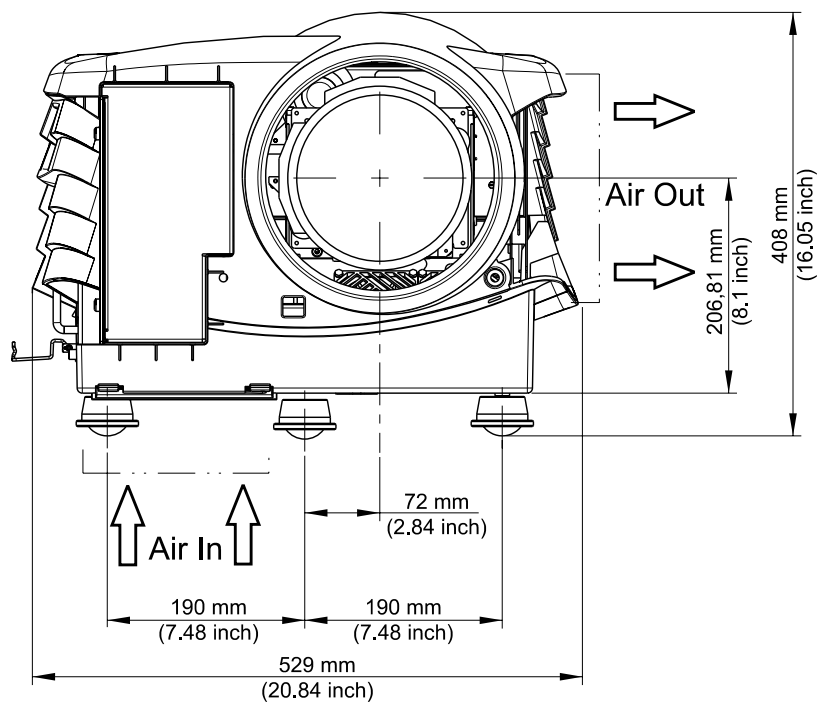


Image 2-2  
Front View Dimensions

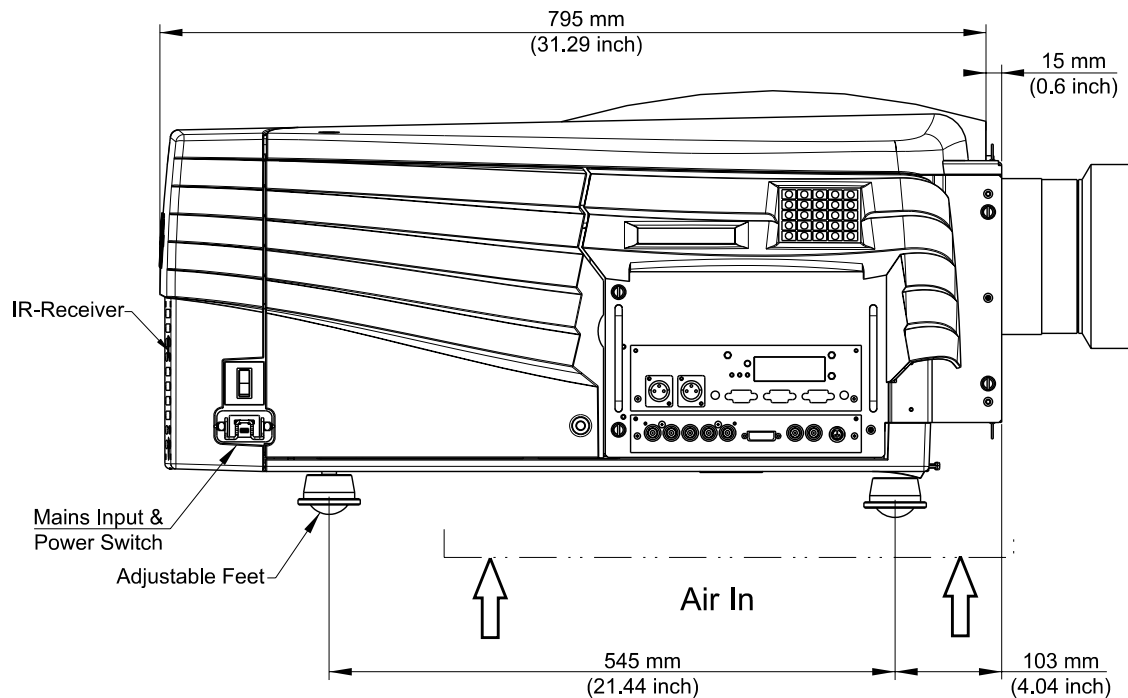


Image 2-3  
Left View Dimensions

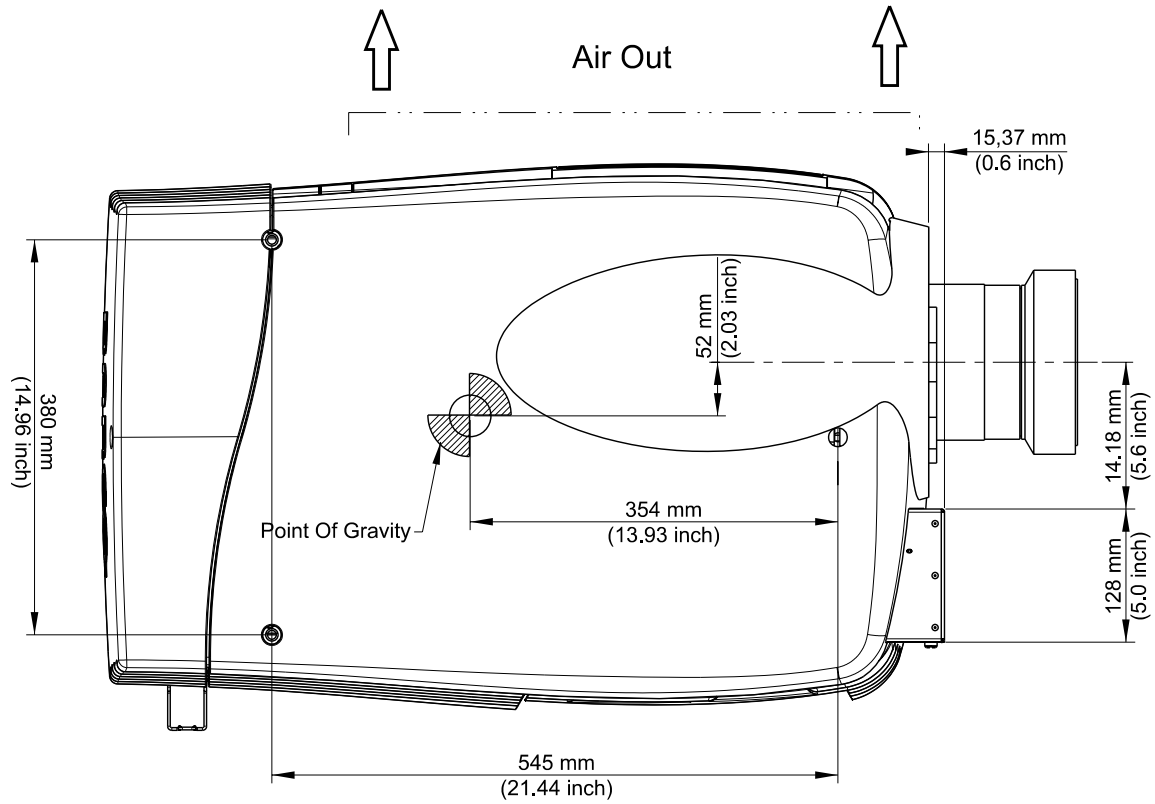


Image 2-4  
Top View Dimensions



## 3. INSTALLATION GUIDELINES

### 3.1 General Installation Guidelines



**WARNING:** Before installing the projector, read first the safety instructions.

#### Ambient Temperature Conditions.

Careful consideration of things such as image size, ambient light level, projector placement and type of screen to use are critical to the optimum use of the projection system.

Max. ambient temperature : 35°C or 95°F

Min. ambient temperature : 10°C or 50 °F

The projector will not operate if ambient air temperature falls outside this range (10°C-35°C or 50°F-95°F).

Storage temperature: -35°C to +65°C (-31°F to 149°F)

#### Humidity Conditions

Storage: 0 to 98 % RH Non-condensing

Operation: 0 to 95 % RH Non-condensing



**CAUTION:** Harmful Environmental Contamination Precaution

#### Environment

Do not install the projection system in a site near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or humidity. Be aware that room heat rises to the ceiling; check that temperature near the installation site is not excessive.

#### Environment condition check

A projector must always be mounted in a manner which ensures the free flow of clean air into the projectors ventilation inlets. For installations in environments where the projector is subject to airborne contaminants such as that produced by smoke machines or similar (these deposit a thin layer of greasy residue upon the projectors internal optics and imaging electronic surfaces, degrading performance), then it is highly advisable and desirable to have this contamination removed prior to it reaching the projectors clean air supply. Devices or structures to extract or shield contaminated air well away from the projector are a prerequisite, if this is not a feasible solution then measures to relocate the projector to a clean air environment should be considered.

Only ever use the manufacturer's recommended cleaning kit which has been specifically designed for cleaning optical parts, never use industrial strength cleaners on the projector's optics as these will degrade optical coatings and damage sensitive optoelectronics components. Failure to take suitable precautions to protect the projector from the effects of persistent and prolonged air contaminants will culminate in extensive and irreversible ingrained optical damage. At this stage cleaning of the internal optical units will be non-effective and impracticable. Damage of this nature is under no circumstances covered under the manufacturer's warranty and may deem the warranty null and void. In such a case the client shall be held solely responsible for all costs incurred during any repair. It is the clients responsibility to ensure at all times that the projector is protected from the harmful effects of hostile airborne particles in the environment of the projector. The manufacturer reserves the right to refuse repair if a projector has been subject to wantful neglect, abandon or improper use.

#### Special Care for Laser Beams

Special care should be used when DLP projectors are used in the same room as performant laser equipment. Direct or indirect hitting of a laser beam on to the lens can severely damage the Digital MicroMirror Devices™ in which case there is a loss of warranty

#### Which screen type ?

There are two major categories of screens used for projection equipment. Those used for front projected images and those for rear projection applications.

Screens are rated by how much light they reflect (or transmit in the case of rear projection systems) given a determined amount of light projected toward them. The 'GAIN' of a screen is the term used. Front and rear screens are both rated in terms of gain. The gain of screens range from a white matte screen with a gain of 1 (x1) to a brushed aluminized screen with a gain of 10 (x10) or more. The choice between higher and lower gain screens is largely a matter of personal preference and another consideration called the Viewing angle. In considering the type of screen to choose, determine where the viewers will be located and go for the

### 3. Installation Guidelines

---

highest gain screen possible. A high gain screen will provide a brighter picture but reduce the viewing angle. For more information about screens, contact your local screen supplier.

#### What image size? How big should the image be?

The projector is designed for projecting an image size : min 1.00m (3.3ft) to max 15 m (49.2ft) (depending on the ambient light conditions), with an aspect ratio of 4 to 3.

## 3.2 Restricted Access Location

---

### Installation in a Restricted Access Location

The projector can only be installed in a Restricted Access Location.

#### What is a Restricted Access Location (Definition)?

Definition of a Restricted Access Location:

A location for equipment where both of the following paragraphs apply:

- Access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restriction applied to the location and about the precautions that shall be taken.
- Access is through the use of the TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

#### What are the Reasons for the Applied Restriction?

The Air Outlet Grill on the side of the Projector can reach high temperatures due to the High Light Output Range of the lamp.

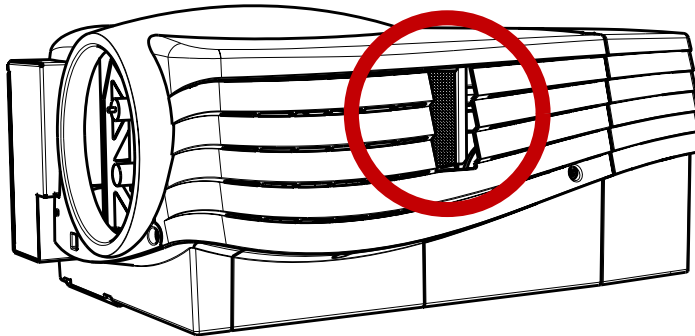


Image 3-1  
The Air Outlet Grill on the side of the Projector can reach high temperatures



**WARNING:** Do not touch this Air Outlet Grill when the projector is switched on, respect a cool down period of 10 minutes before touching this Grill, when switching off the projector!

## 3.3 Projector Position

---

### Projector Position Guidelines

The lamp axis, as it is drawn on this picture, can be oriented according to the specifications:

- pointed in any downward direction
- up to 15° in an upward position.

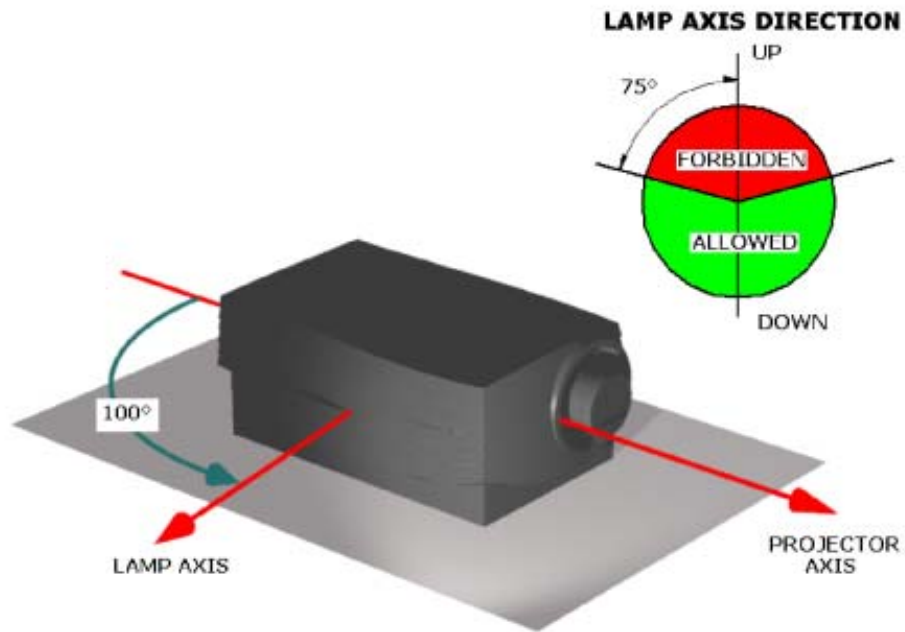


Image 3-2  
Projector position



**CAUTION:** Never operate the projector when turned with the inputs upwards.

### 3.4 Configuration

#### Which configuration can be used?

The projector can be installed to project images in four different configurations.

- Front / Table
- Front / Ceiling
- Rear / Table
- Rear / Ceiling

#### Positioning the projector

The Projector should be installed perpendicular with the screen on a distance PD and water leveled in both directions. The mounting positions in following images are shown for a nominal lens position.

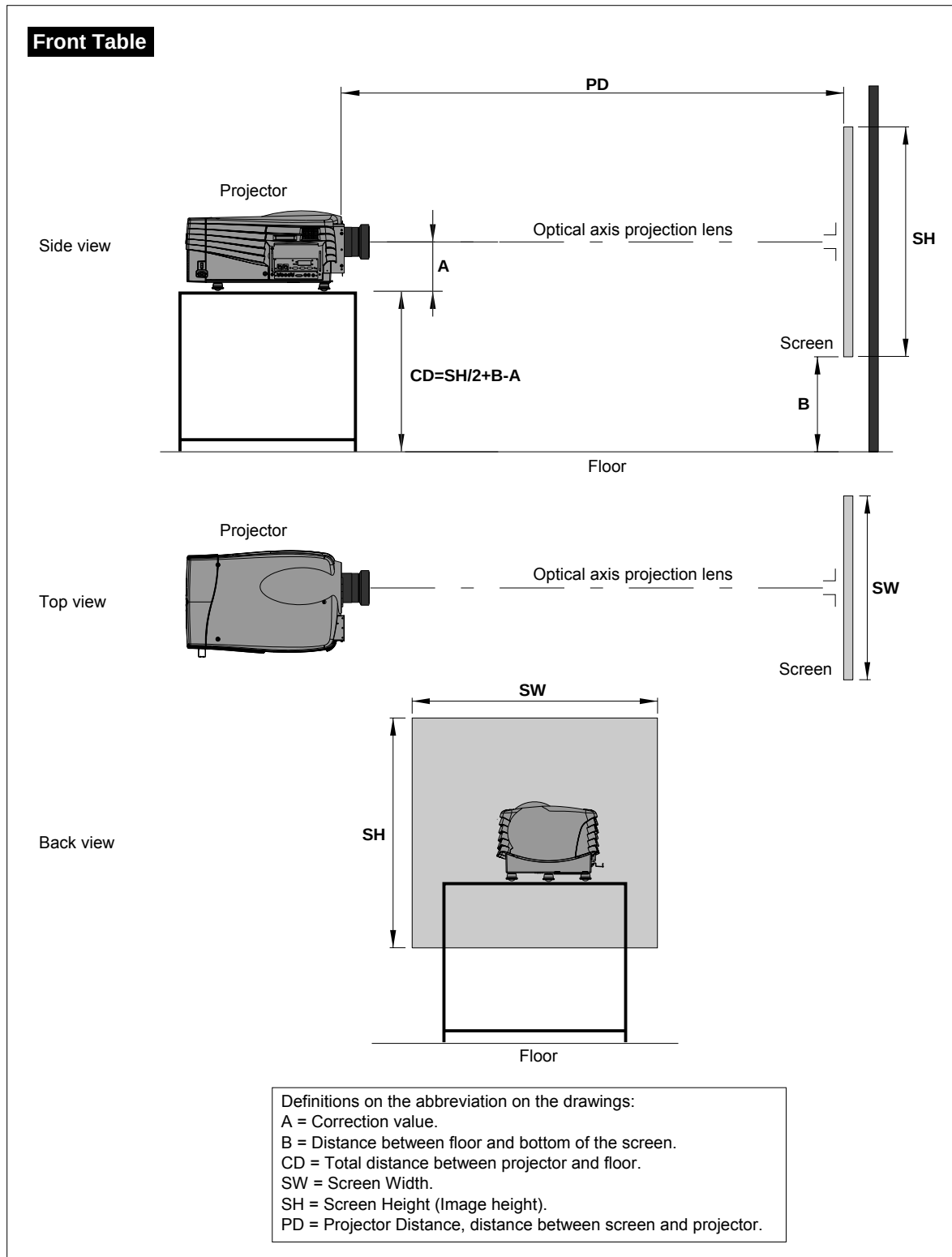


Image 3-3  
Front Table Configuration

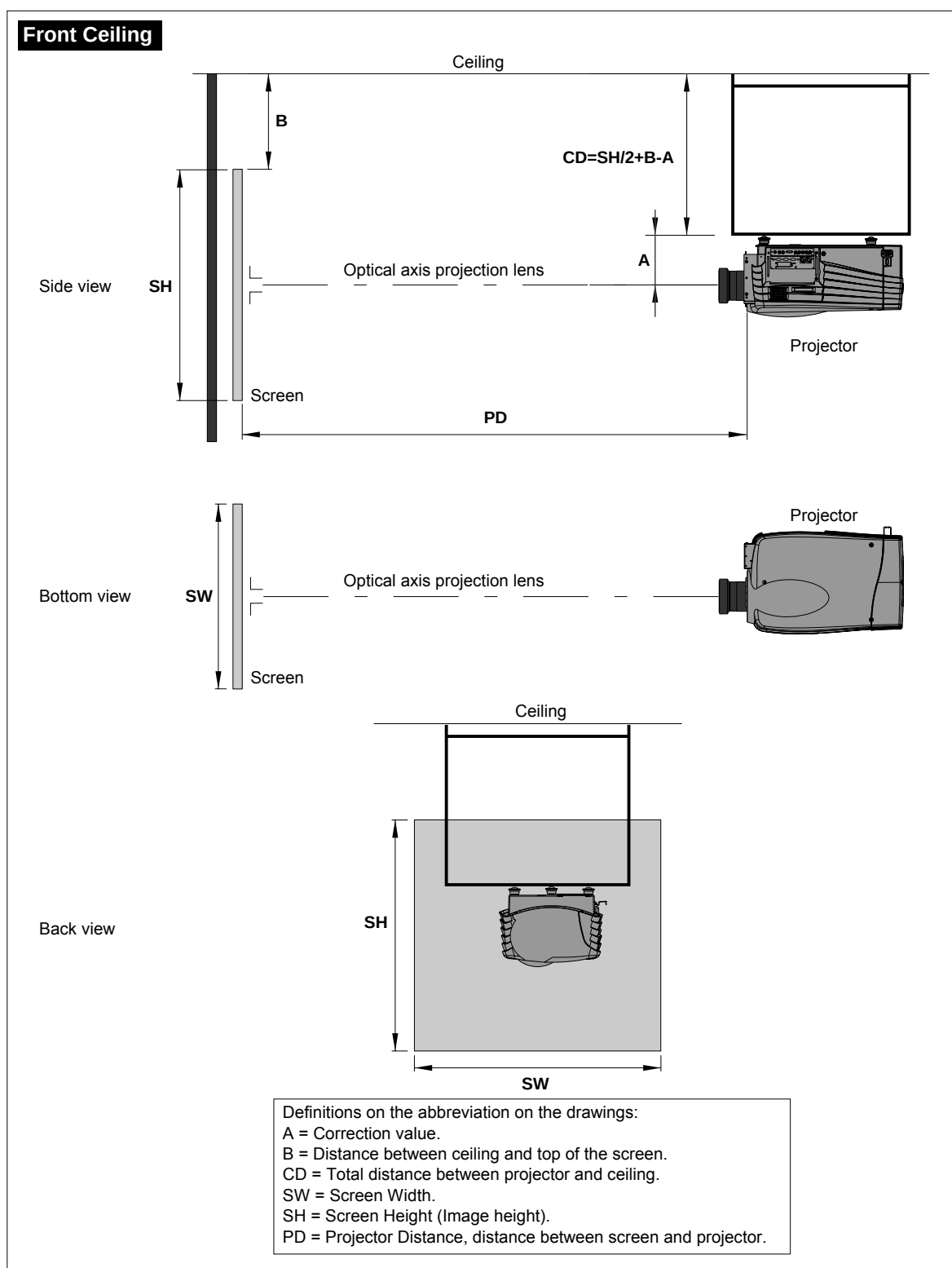


Image 3-4  
Front Ceiling Configuration

### 3.5 Safety Area around the projector

#### Safety Area

Make sure the projector is located so that the air inlets and outlets for the cooling system are not obstructed. Leave a safety area A of about 1 meter on the left and the right side of the projector.

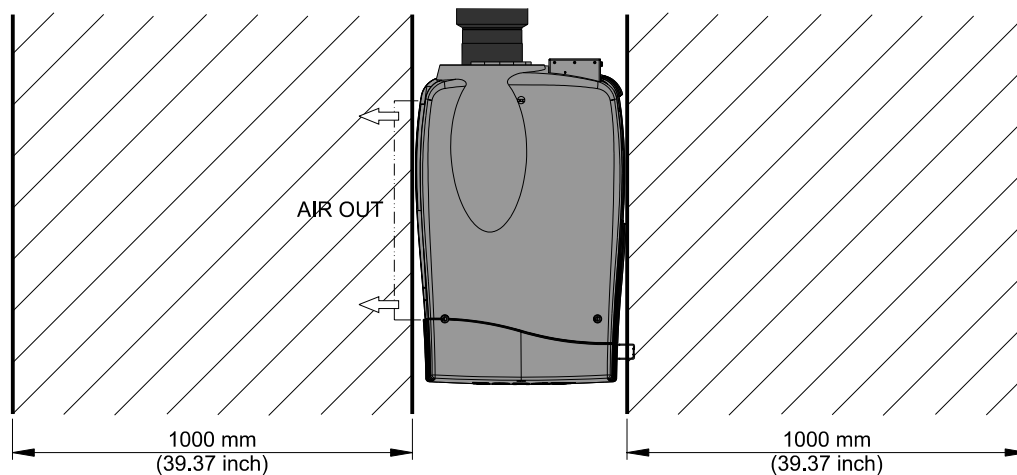


Image 3-5  
Safety Area

## 3.6 Realignment of the lamp in its reflector

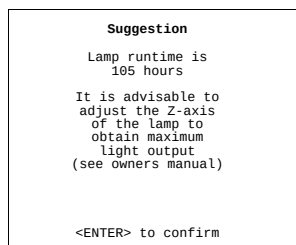


**WARNING:** As the projector has to be opened, this procedure has to be performed by qualified service technician.

### Why

With higher run times, the light output of the lamp will decrease, which results in a lower light output on the screen. This light output decrease can be compensated by readjusting the position of the lamp.

A suggestion dialog box will be displayed when the projector is restarted after 100 hours and 250 hours. Once **ENTER** is pressed when that box is open, this box will not be displayed again till the next alert point is reached.



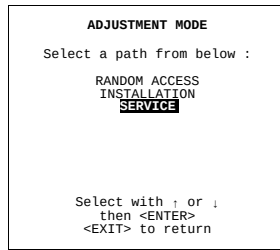
Menu 3-1

The user can now adjust the Z-axis by following the next procedure.

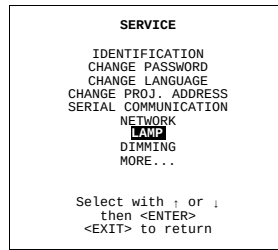
### How to readjust.

1. On the side of the inputs, turn the captive screw a quarter counter clockwise.
2. Flip the cover to the left side and take off. (image 3-6)
3. Start up the adjustment mode and select *Service*. (menu 3-2)
4. Select *Lamp*. The Z-axis value indication (lamp menu in service mode) will be helpful while turning screw B. (menu 3-3)
5. Loosen the lock nut A, securing the position of the adjustable screw (B), on the back of the lamp casing (nutdriver 10). (image 3-7, image 3-8)
6. Slowly turn the screw B (image 3-7, , image 3-8, using an Allen key of 3 mm, a little clockwise until the maximum value of the Z-AXIS indication in the lamp menu is reached.

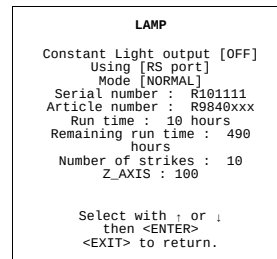
7. Tighten the lock nut on the adjustable screw to secure its position (nutdriver 10).



Menu 3-2



Menu 3-3



Menu 3-4



Image 3-6  
Lamp adjustment access

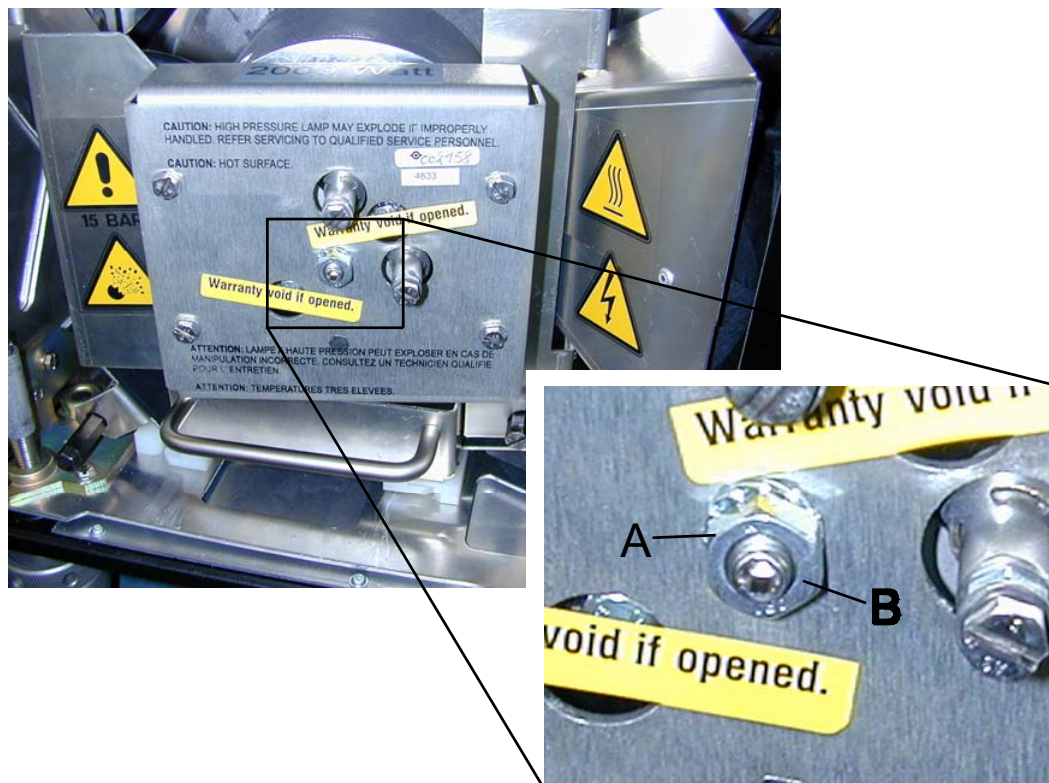


Image 3-7  
Lamp Z-Axis alignment (Former lamp house)

### 3. Installation Guidelines

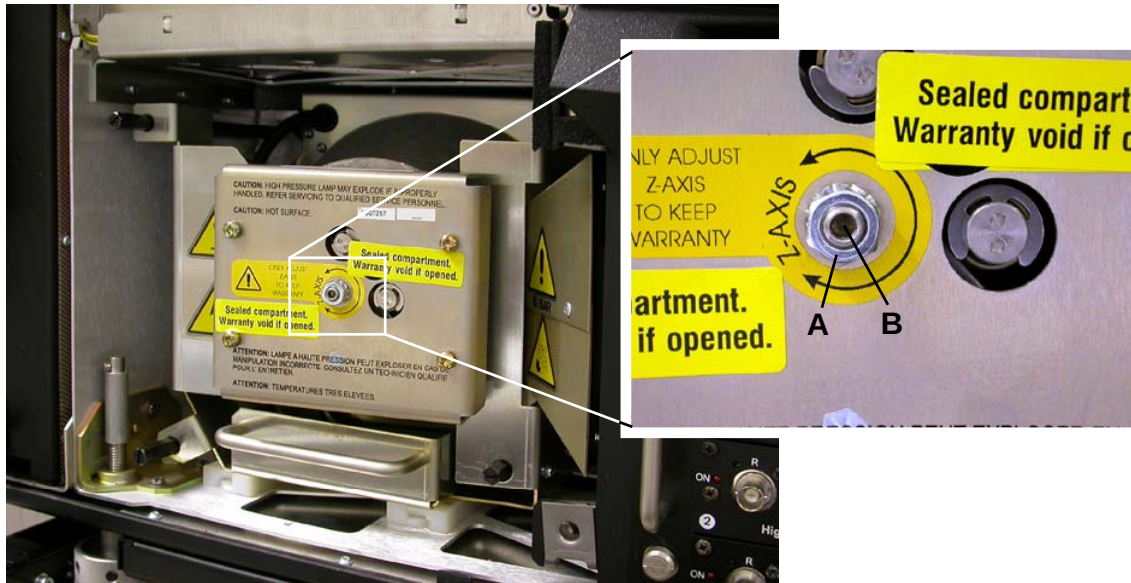


Image 3-8  
Lamp Z-Axis alignment (Universal lamp house)



**CAUTION:** Never turn the other screws ! These are factory aligned.

## 3.7 Lenses

### Overview

- Available Lenses
- Lens Selection
- Lens Formulas
- Adjusting the TLD (1.2:1) Lens
- Lens Installation
- Lens Adjustments
- Cleaning the lens

### 3.7.1 Available Lenses

#### Available Lenses

Fixed Lenses:

|                 |          |
|-----------------|----------|
| TLD (0.8:1) HB* | R9842040 |
| TLD(1.2:1) HB*  | R9840770 |

Motorized Zoom and Focus Lenses:

|                     |          |
|---------------------|----------|
| TLD (1.6–2.0:1) HB* | R9842060 |
| TLD (2.0–2.8:1) HB* | R9842080 |
| TLD (2.8–5.0:1) HB* | R9842100 |
| TLD (5.0–8.0:1) HB* | R9842120 |

### 3.7.2 Lens Selection

#### How to select a lens?

1. Determine the required screen width.
2. Determine the approximate position of the projector in the projection room with regard to the screen and measure the projector-screen distance (PD).
3. Use the lens formulas to find the best corresponding PD with regard to the measured projector-screen distance for the required screen width.

### 3.7.3 Lens Formulas

#### Lens Formulas

|                     | Metric formulas (meter)                                                  | Inch formulas (inch)                                                      |
|---------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|
| TLD (0.8:1) HB*     | $PD = 0.77 \times SW + 0.05$                                             | $PD = 0.77 \times SW + 1.97$                                              |
| TLD (1.2:1) HB*     | $PD = 1.11 \times SW - 0.01$                                             | $PD = 1.11 \times SW - 0.39$                                              |
| TLD (1.6–2.0:1) HB* | $PD_{min} = 1.47 \times SW - 0.09$<br>$PD_{max} = 1.85 \times SW - 0.13$ | $PD_{min} = 1.47 \times SW - 3.54$<br>$PD_{max} = 1.85 \times SW - 5.12$  |
| TLD (2.0–2.8:1) HB* | $PD_{min} = 1.85 \times SW - 0.17$<br>$PD_{max} = 2.62 \times SW - 0.24$ | $PD_{min} = 1.85 \times SW - 6.69$<br>$PD_{max} = 2.62 \times SW - 9.45$  |
| TLD (2.8–5.0:1) HB* | $PD_{min} = 2.58 \times SW - 0.16$<br>$PD_{max} = 4.70 \times SW - 0.38$ | $PD_{min} = 2.58 \times SW - 6.30$<br>$PD_{max} = 4.70 \times SW - 14.96$ |
| TLD (5.0–8.0:1) HB* | $PD_{min} = 4.52 \times SW - 0.01$<br>$PD_{max} = 7.53 \times SW - 0.29$ | $PD_{min} = 4.52 \times SW - 0.39$<br>$PD_{max} = 7.53 \times SW - 11.42$ |



Lens program to calculate the projector distance is available on the BARCO web side : [http://www.barco.com/projection\\_systems/customer\\_services/lens\\_program.asp](http://www.barco.com/projection_systems/customer_services/lens_program.asp)

### 3.7.4 Adjusting the TLD (1.2:1) Lens

#### How to adjust the TLD (1.2:1) lens?

1. Is the lens aperture barrel (A) set to F2.5?  
If yes, This is the correct aperture setting to use the lens on the projector, adjusting is not necessary.  
If no, Continue with step 2 to preform the adjustment.
2. Loosen the hexagon screw (B). (image 3-9)
3. Rotate the aperture barrel (A) until the F2.5 arrow matches the arrow on the body image 3-9.
4. Secure the position of the barrel by tightening the screw.



Image 3-9  
Loosen the hexagon screw

#### 3.7.5 Lens Installation

##### How to install ?

Follow the next procedure:

1. Remove the foam rubber in the opening of the lens holder.
2. Take the lens assembly out of its packing material and remove the lens caps on both sides.
3. Move the handle (A) of the lens anchor system to the right. (image 3-10)
4. Push the lens, motors at the top, in the lens block gap horizontally, lining up the motor connector on the lens with the connector on the lens block (B), until the lens clicks in the lens anchor system. (image 3-11)

**Caution:** On a table mounted projector, hold the projector when pushing the lens into the lens block to avoid sliding off from the table.

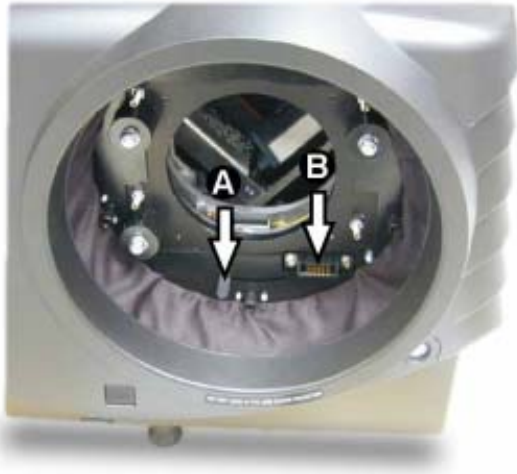


Image 3-10  
Lens installation



Image 3-11  
Mounted Lens

#### 3.7.6 Lens Adjustments

##### Overview

- Scheimpflug Adjustment



When performing a Lens Adjustment, lens Adjustment patterns can be generated within the Installation menu.

##### 3.7.6.1 Scheimpflug Adjustment

##### Overview

- Scheimpflug Adjustment Overview
- Scheimpflug Locks
- Top-Bottom Scheimpflug Adjustment
- Left-Right Scheimpflug Adjustment

##### 3.7.6.1.1 Scheimpflug Adjustment Overview

##### Why performing the Scheimpflug Adjustment?

Scheimpflug Adjustment is needed If an image is still unsharp, even after the focus adjustment.

This means the image lies in a plane which is not parallel to the screen plane, as the deviation between the image plane and the screen plane can be in both the Top-Bottom and Left-Right directions, it is necessary to proceed in two distinct steps in following order).

## Scheimpflug Adjustment Overview

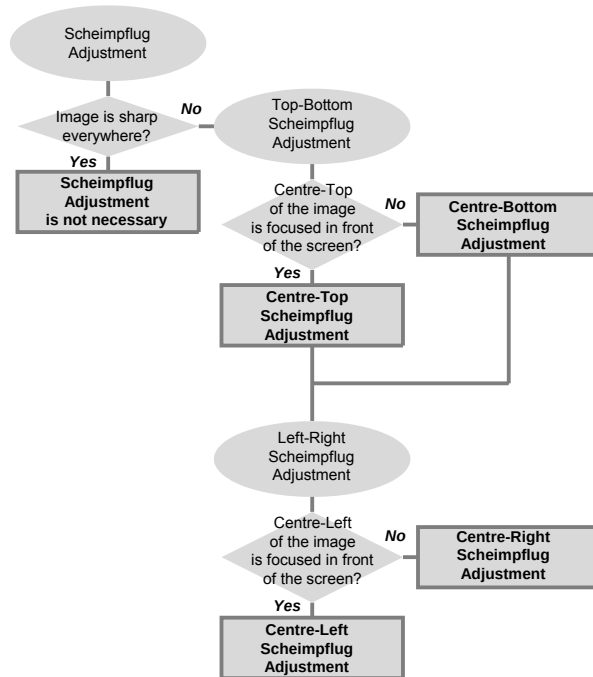


Image 3-12  
Scheimpflug Adjustment Overview

## Necessary Tools

- Piece of white cardboard.
- Hexagon key 4 mm.
- Nut spinner 10 mm.

### 3.7.6.1.2 Scheimpflug Locks

#### How to (un)lock the Scheimpflug Locks?

1. Use the hexagon key to unlock the Scheimpflug Locking Bolts. (image 3-13)
2. Rotate the Scheimpflug Locking Plate to get access to the Scheimpflug Bolts. (image 3-14)
3. Repeat step 1 till 2 for all 4 Scheimpflug Bolts.
4. When finished with the Scheimpflug Adjustment reverse this procedure to lock the position of the Scheimpflug Bolts.

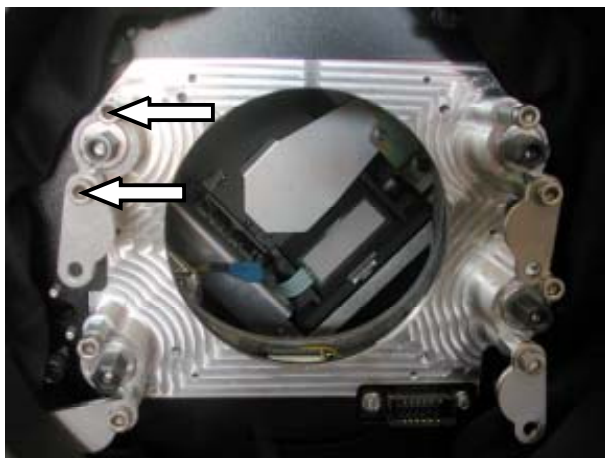


Image 3-13  
Use the hexagon key to unlock the Scheimpflug Locking Bolts.

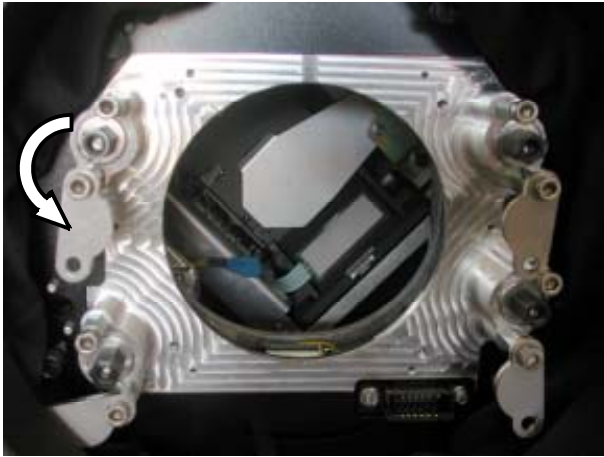


Image 3-14  
Rotate the Scheimpflug Locking Plate to get access to the Scheimpflug Bolts

#### 3.7.6.1.3 Top–Bottom Scheimpflug Adjustment

##### How to start the Top–Bottom Scheimpflug Adjustment?

1. Find out whether the centre-top or centre-bottom area of the image is focused in front of the screen. To do this, hold the piece of white cardboard parallel to the screen plane and displace it from the screen towards the projector, along the line joining the centre of the screen and the projection lens.
2. Is the centre-top area of the image focused in front of the screen?  
If yes, Proceed with the Centre–Top Scheimpflug Adjustment.  
If no, The centre-bottom area of the image is focused in front of the screen, proceed with the Centre–Bottom Scheimpflug Adjustment.

##### Centre–Top Scheimpflug Adjustment

1. Unscrew bolts A and B (max 1/8<sup>th</sup> of a turn) and screw bolts C and D by approximately the same amount. (image 3-15, image 3-16)
2. Check if the top area of the image is still focused in front of the screen.
3. Repeat steps 1 and until the centre-top of the image is focused on the screen, together with the centre and centre-bottom areas).

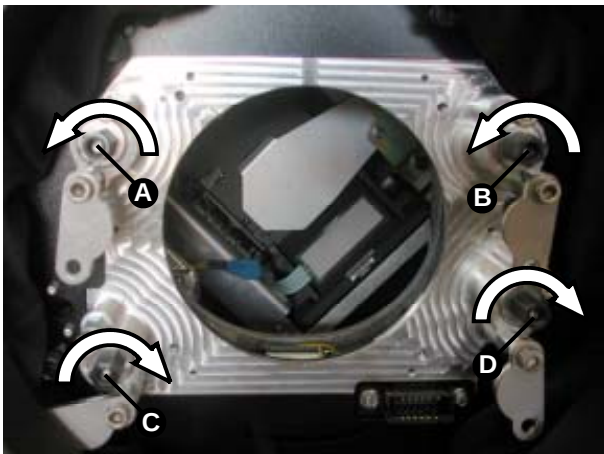


Image 3-15  
Unscrew bolts A and B and screw bolts C and D.

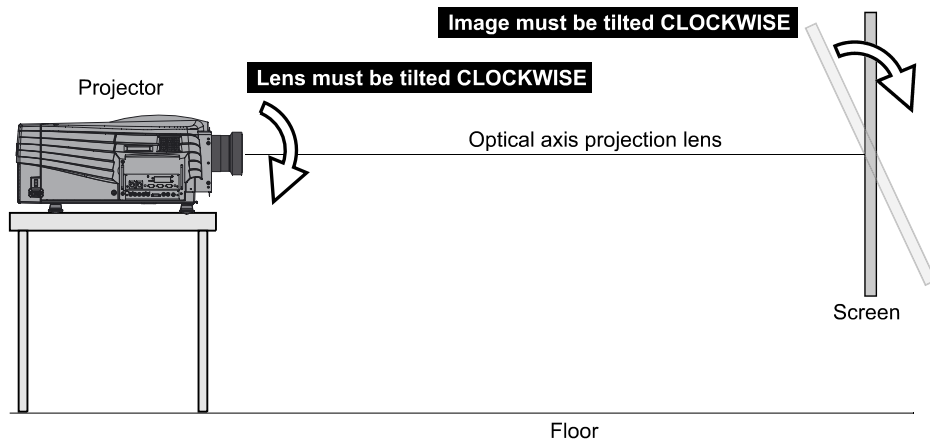


Image 3-16  
Centre-Top Scheimpflug Adjustment

### Centre-Bottom Scheimpflug Adjustment

1. Screw bolt A and B (max 1/8<sup>th</sup> of a turn) and unscrew bolt C and D by approximately the same amount. (image 3-17, image 3-18)
2. Check if the bottom area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre-bottom of the image is focused on the screen, together with the centre and centre-top areas).

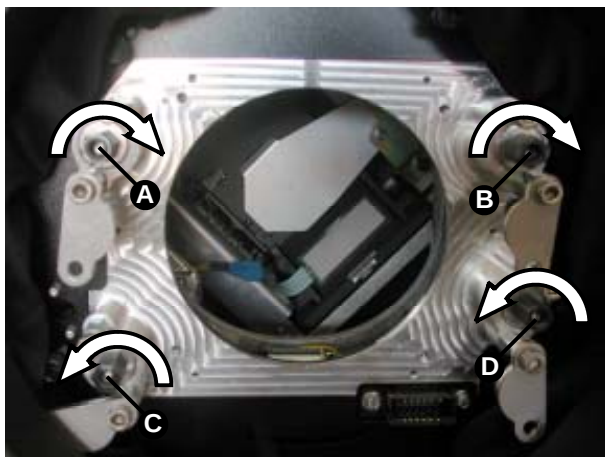


Image 3-17  
Screw bolt A and B and unscrew bolt C and D.

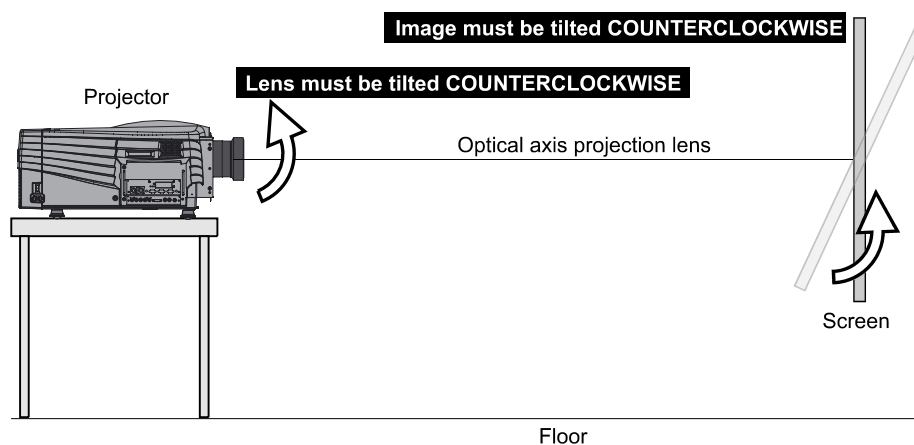


Image 3-18  
Centre-Bottom Scheimpflug Adjustment

#### 3.7.6.1.4 Left-Right Scheimpflug Adjustment

##### How to start the Left-Right Scheimpflug Adjustment?

1. By using the same piece of white cardboard, find out whether the centre-left or centre-right area of the image is focused in front of the screen.
2. Is the centre-left area of the image focused in front of the screen?  
If yes, Proceed with the Centre-Left Scheimpflug Adjustment.  
If no, The centre-right area of the image is focused in front of the screen, proceed with the Centre-Right Scheimpflug Adjustment.

##### Centre-Left Scheimpflug Adjustment

1. Screw bolt A and C (max  $1/8^{\text{th}}$  of a turn) and unscrew bolts B and D by the same amount. (image 3-19, image 3-20)
2. Check if the left area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre-left area of the image is focused on the screen (together with the centre and the centre-right areas).

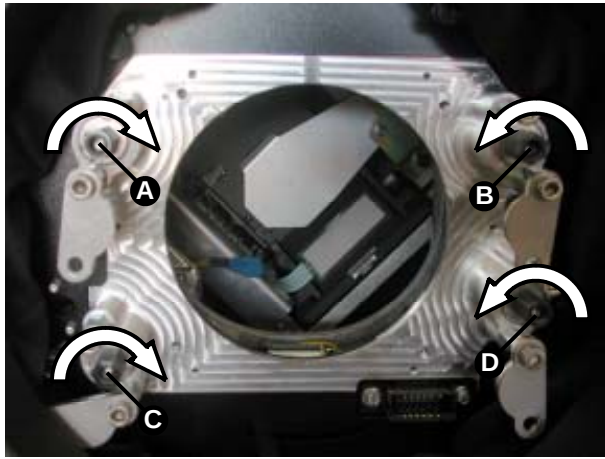


Image 3-19  
Screw bolt A and C and unscrew bolts B and D by the same amount



Image 3-20  
Centre-Left Scheimpflug Adjustment

##### Centre-Right Scheimpflug Adjustment

1. Unscrew bolt A and C (max  $1/8^{\text{th}}$  of a turn) and screw bolts B and D by the same amount. (image 3-21, image 3-22)
2. Check if the right area of the image is still focused in front of the screen.
3. Repeat steps 1 and 2 until the centre-right area of the image is focused on the screen (together with the centre and the centre-left areas).

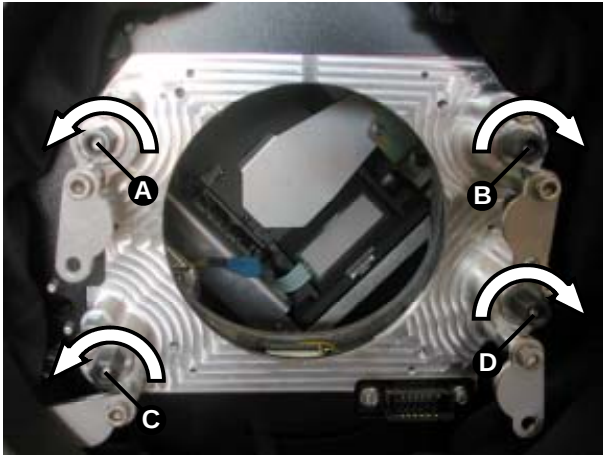


Image 3-21  
Unscrew bolt A and C and screw bolts B and D by the same amount

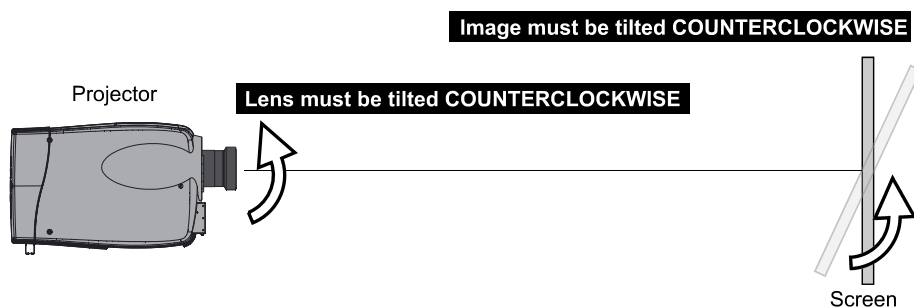


Image 3-22  
Centre-Right Scheimpflug Adjustment

### 3.7.7 Cleaning the lens



To minimize the possibility of damage to optical coatings, or scratches to lens surfaces, we have developed recommendations for cleaning. **FIRST**, we recommend you try to remove any material from the lens by blowing it off with clean, dry deionized air. **DO NOT** use any liquid to clean the lenses.

#### Necessary tools

Toraysee™ cloth (delivered together with the lens kit). Order number : R379058.

#### How to clean the lens ?

Proceed as follow :

1. Always wipe lenses with a CLEAN Toraysee™ cloth.
2. Always wipe lenses in a single direction.  
**Warning:** Do not wipe back and forwards across the lens surface as this tends to grind dirt into the coating.
3. Do not leave cleaning cloth in either an open room or lab coat pocket, as doing so can contaminate the cloth.
4. If smears occur when cleaning lenses, replace the cloth. Smears are the first indication of a dirty cloth.



**CAUTION:** Do not use fabric softener when washing the cleaning cloth or softener sheets when drying the cloth.

Do not use liquid cleaners on the cloth as doing so will contaminate the cloth.



Other lenses can also be cleaned safely with this Toraysee™ cloth.

### 3.8 Battery Installation in the RCU

---

#### How are the batteries delivered ?

The batteries (not yet installed to save the battery life time) are delivered inside the plastic bag with the power cord.

#### How to install

1. Remove the battery cover on the backside of the remote control by pushing the indicated handle a little towards the bottom of the RCU.
2. Lift up the top side of the cover at the same time.
3. Insert the 2 new 1,5 V batteries as indicated in the RCU. (image 3-23)
4. Put the battery cover back on its place.

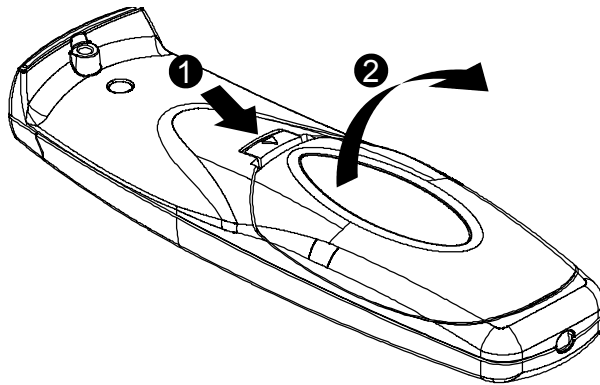
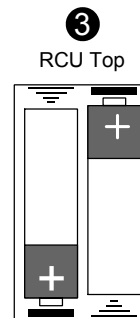


Image 3-23  
Battery installation



## 4. CONNECTIONS

### Overview

- Power connection
- Switching On
- Switching to standby
- Switching off
- Input Connections
- Communication Connections
- Stereo Connections

### 4.1 Power connection

#### AC Power cord connection

Use the supplied power cord to connect your projector to the wall outlet. Plug the female power connector into the male connector at the left of the projector. The power input is 230 VAC.

#### Fuses

The projector is protected with an automatic circuit breaker of 15A which is built in into the power switch.

### 4.2 Switching On

#### How to switch on ?

1. Press the power switch to switch on the projector.
  - When '0' is visible, the projector is switched off.
  - When '1' is visible, the projector is switched on.

The projector starts in standby mode. The projector indication lamp is red.

#### Starting image projection

1. Press **Stand by** key once on the local keypad or on the remote control. (image 4-1)

The projector mode indication lamp will be green.

Or,

Press a digit button to select an input source.

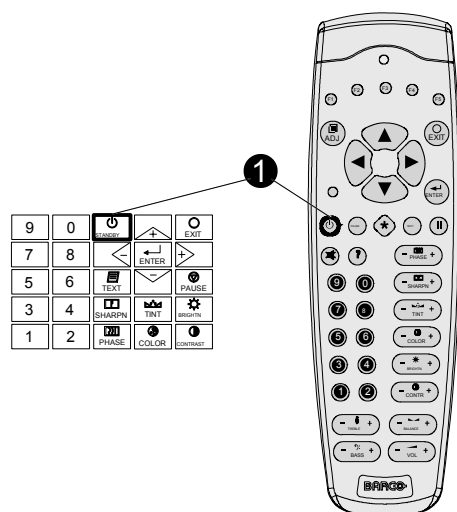


Image 4-1  
Stand by keys on RCU and local keypad

## 4. Connections

---

### Lamp run time indication

The total lamp runtime for a safe operation is maximum 500 (Typical) or 1000 (Maximum) hours, do not use the lamp any longer.

Operating the lamp longer than 500 (Typical) or 1000 (Maximum) hours may damage the projector.

When the maximum lamp runtime hours is reached, the following warning will be displayed, from then on, each time the projector is started up, this warning will be displayed.

Remaining  
Lamp run time  
20h

Image 4-2



Press ENTER to remove this warning.

---

Always replace with the same type of lamp, call a BARCO authorized service technician for this lamp replacement.



**CAUTION:** Using a lamp for more than 500 (Typical) or 1000 (Maximum) hours is dangerous as the lamp could explode.

### Lamp Light Output Indication

When starting up the projector, the center lumens measurement is performed, when the lamp light output is lower than 50 % of the initial value, the lamp light output warning will be displayed.

**WARNING**

Lamp run time is X hours  
The light output of the lamp  
is less  
than 50% of its initial value.  
It is advisable to replace the  
lamp  
before damage occurs.

<ENTER> to confirm

Menu 4-1



Press ENTER to remove this warning.

## 4.3 Switching to standby

---

### How to switch to standby?

1. Press **Standby** to switch the projector to standby.

## 4.4 Switching off

---

### How to switch off the projector?

1. Press first **Standby**.
2. Let cool down the projector until the fans stop blowing, at least 15 min.
3. Switch off the projector with the power switch.

## 4.5 Input Connections

### Overview

- Input Facilities
- Input 1
- Input 2
- Inputs via RCVDS05

### 4.5.1 Input Facilities

#### Input Facilities Overview

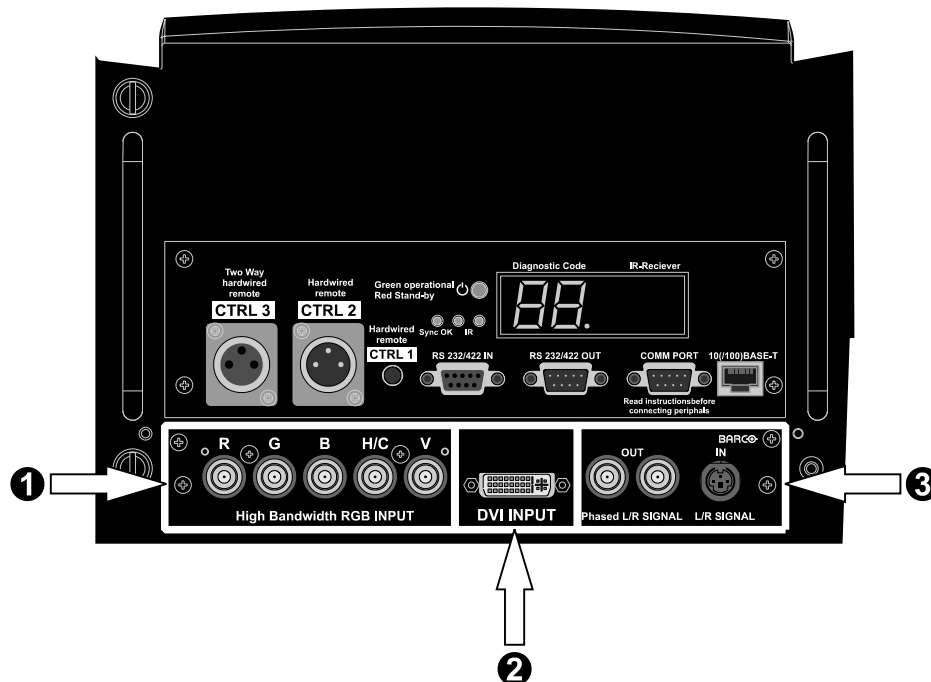


Image 4-3  
Input Facilities

| Input Number | Type Of Input             |
|--------------|---------------------------|
| 1            | High Bandwidth RGB Input  |
| 2            | DVI Input                 |
| 3            | Left/Right Phasing Module |

Table 4-1  
Input Facilities

### 4.5.2 Input 1

#### Input 1 specifications

Input 1 has 5 BNC Input Terminals for 5 Cable Input.

#### Which signals can be connected to input 1?

| Input Signal      | R | G              | B | H | V |
|-------------------|---|----------------|---|---|---|
| RGBHV             | R | G              | B | H | V |
| RGBS              | R | G              | B | S | — |
| RG <sub>S</sub> B | R | G <sub>S</sub> | B | — | — |

#### How to select RGB on input 1?

1. Press the **1** key on the RCU or Local Keypad.

## 4. Connections

### How to change the input slot setting?

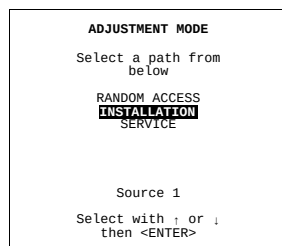
1. Press **ADJUST** or **ENTER** key to start up the *Adjustment Mode*.
2. Push the cursor key ↑ or ↓ to select *Installation*. (menu 4-2)
3. Press **ENTER** to select.

The *Installation* menu will be displayed.

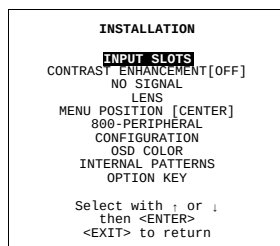
4. Push the cursor key ↑ or ↓ to select *Input Slots*. (menu 4-3)
5. Press **ENTER** to select.

The internal system will scan the inputs and displays the result in the *Input Slots* menu, only Input 1 is available. (menu 4-4)

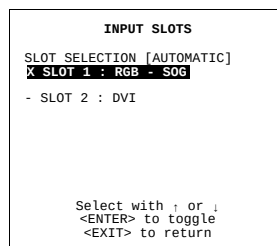
6. Press **ENTER** to toggle between RGB-SS or RGB-SOG.



Menu 4-2



Menu 4-3



Menu 4-4

### Possible indications on the input slot menu.

- RGS-SS [CV or HS&VS] = RGB analog signals, separate sync is composite sync or horizontal and vertical sync.
- RGB-SOG = RGB analog signals with sync on green.

When changing from an analog signal on the RGB Input to the DVI Input the indication led on the front panel of the module will switch from the RGB Input to the DVI Input.

### 4.5.3 Input 2

#### Input 2 specifications

Input 2 has a DVI plug for DVI input.

#### Which signals can be connected to input 2?

DVI signals with a maximum bandwidth of 160 MHz. can be connected to the DVI input connector.

#### Pin assignment for the DVI connector.

|        |                     |        |                     |
|--------|---------------------|--------|---------------------|
| Pin 1  | TMDS DATA2-         | Pin 13 | TMDS DATA3+         |
| Pin 2  | TMDS DATA2+         | Pin 14 | +5 Power            |
| Pin 3  | TMDS DATA2/4 Shield | Pin 15 | Ground (for +5V)    |
| Pin 4  | TMDS DATA4-         | Pin 16 | Hot Plug Detect     |
| Pin 5  | TMDS DATA4+         | Pin 17 | TMDS DATA0-         |
| Pin 6  | DDC Clock           | Pin 18 | TMDS DATA0+         |
| Pin 7  | DDC Data            | Pin 19 | TMDS DATA0/5 Shield |
| Pin 8  | No connect          | Pin 20 | TMDS DATA5-         |
| Pin 9  | TMDS DATA1-         | Pin 21 | TMDS DATA5+         |
| Pin 10 | TMDS DATA1+         | Pin 22 | TMDS Clock Shield   |
| Pin 11 | TMDS DATA1/3 Shield | Pin 23 | TMDS Clock+         |
| Pin 12 | TMDS DATA3-         | Pin 24 | TMDS Clock-         |

### How to select DVI on Input 2?

1. Press the 2 key on the RCU or Local Keypad.

#### 4.5.4 Inputs via RCVDS05

##### Overview

When using a RCVDS05, the input configuration must be as follows:

|        |               |
|--------|---------------|
| Slot 1 | RGB/Component |
| Slot 2 | Not Used      |

When using a RCVDS05, it is recommended to use a 5-cable output module in the RCVDS. The outputs of this module has to be connected to slot 1 of the projector.

## 4.6 Communication Connections

### Overview

- Linked System
- RS232 (RS422) connection
- Communication with peripherals

#### 4.6.1 Linked System



**CAUTION:** Always use the Barco COM 800 Splitter, R9827941 (240V) or R9827948 (110V), when using the COM 800 protocol.

### What can be done?

In a complex multi-channel setup, projectors can be controlled using the RS232 or COM800 Protocol.

CLO and Dynacolor™ can be controlled by both protocols, however by using the COM800 port for these 2 adjustments, the RS232 Port can still be used for general RS232 commands.

The following procedures will describe how to connect a RS232 Linked System and a COM800 Linked System.

### How to connect a RS232 Setup?

1. Connect a Null Modem connector to the RS232 Input of the master-projector. (image 4-4)
2. Connect the output of the Null Modem connector to the RS232 Input of the first slave-projector (image 4-4).
3. Continue by connecting the RS232 Output of the first slave-projector to the RS232 Input of the second slave-projector (image 4-4).
4. Continue this daisy chain connection to connect all slave-projectors (image 4-4).

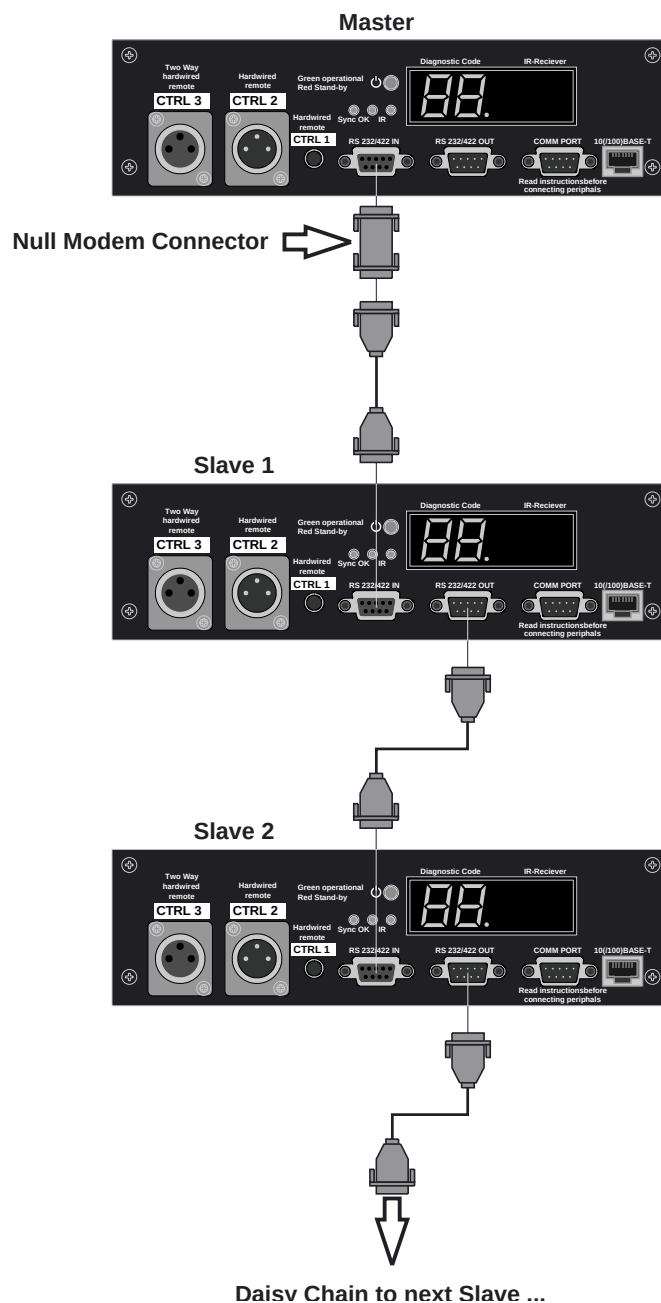


Image 4-4  
RS232 Setup

### How to connect a COM800 Setup

Always use the Barco COM 800 Splitter, **R9827941** (240V) or **R9827948** (110V), when using the COM 800 protocol.

1. Use a data cable with at least 9 cores and 2 DB9 female connectors, just cross the pin 2 and pin 3 connection to make a Custom Null Modem Cable. (image 4-5)
2. Use the Custom Null Modem Cable to connect the COM 800 port of the master-projector to the 'To Switcher' port on the frontside of the COM 800 Splitter. (image 4-6)
3. Continue by connecting the slave projectors to the 'To Proj.' connectors on the backside of the COM 800 Splitter (image 4-6).
4. When dealing with more than 4 slave projectors, the 'To Proj.' connectors on the backside of the COM 800 Splitter can also be used to connect extra COM 800 Splitters (image 4-6).

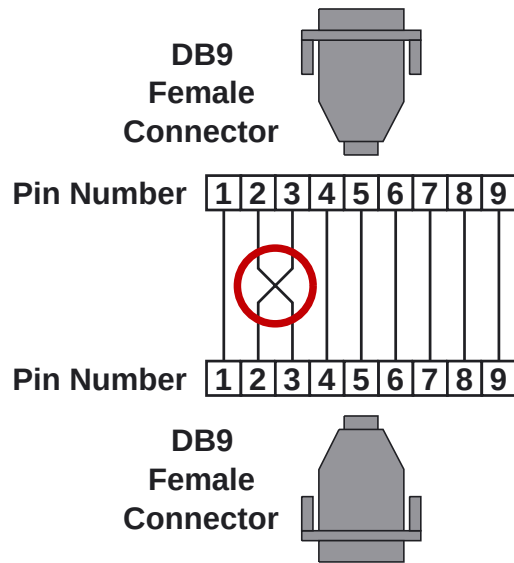


Image 4-5  
Make a Custom Null Modem Cable

## 4. Connections

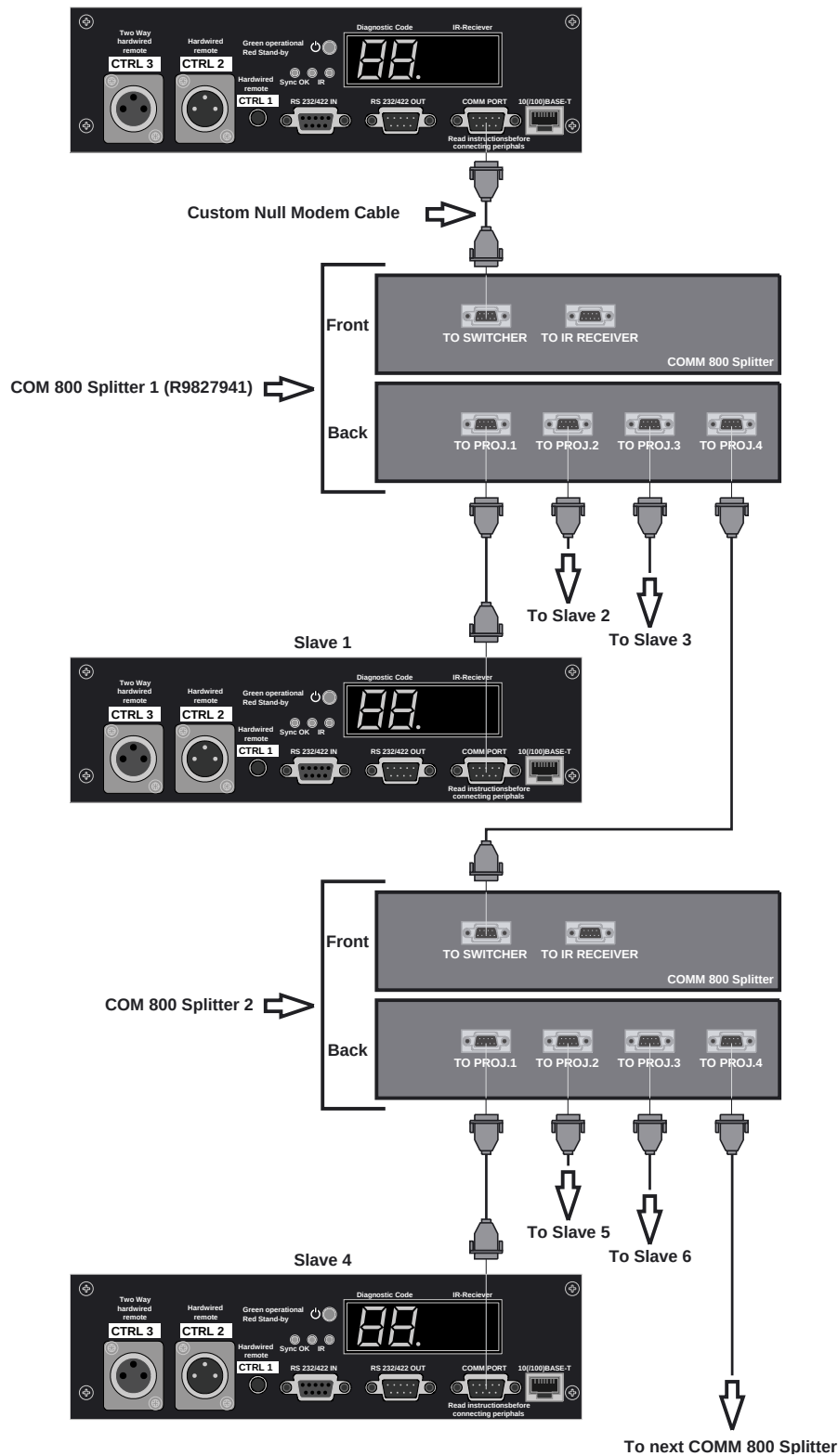


Image 4-6  
Com 800 Connection

### 4.6.2 RS232 (RS422) connection

#### Application

1. Remote control:
  - easy adjustment of projector via an IBM PC (or compatible) or MAC connection.
  - allow storage of multiple projector configurations and set ups.
  - wide range of control possibilities.
  - address range from 0 to 255.
2. Data communications: sending data to the projector or copying the data from the projector to a hard memory device (hard disc, floppy, etc.).

### 4.6.3 Communication with peripherals

#### What is possible with an RCVDS05 connected.

- Up to 20 inputs with the RCVDS 05 and 90 inputs when RCVDS's are linked via the expansion module.
- Serial communication with the projector.
- Remote control buttons on the RCVDS to control the projector (source selection and analog settings).
- The selected source number will be displayed on a 2 digit display and the selected input module will be indicated with a LED on the rear.

For more information about the use of the RCVDS05, consult the owner's manual of the RCVDS05.

#### What is possible with an VS05 connected.

The VS05 can switch up to 5 Composite Video sources, 3 Super Video sources and 1 RGB analog or component video source to the projector. In addition, the audio signal proper to the source, can be switched to an audio amplifier. Order number : R9827890

For more information about the use of the VS05, consult the VS05 owner's manual.

#### Connecting an IR Remote Receiver to the projector.

This infrared receiver unit makes it possible to control the projector from another room. There is a communication line cable between the IR receiver and the projector or the RCVDS. The control information from the RCU can now be sent to the IR Remote Receiver.

The IR Remote Receiver displays the selected source on a 7-segment display.

## 4.7 Stereo Connections

---

### 4.7.1 Single Channel Stereo Connections

#### 4.7.1.1 Left/Right Phasing Module (Input 3)

##### Purpose

The Left/Right Phasing module allows us to manipulate the Stereo Emitter Signal that activate the Stereo Glasses.

##### How to connect the stereo emitter signal?

1. Connect the stereo emitter signal from the Image Generator to the Mini DIN input of the Left/Right Phasing module. (image 4-7)  
**Note:** On some IG's, the Stereo Sync is already present in the Vertical Sync Signal.
2. Connect the IR emitters to the BNC output(s) of the Left/Right Phasing module.

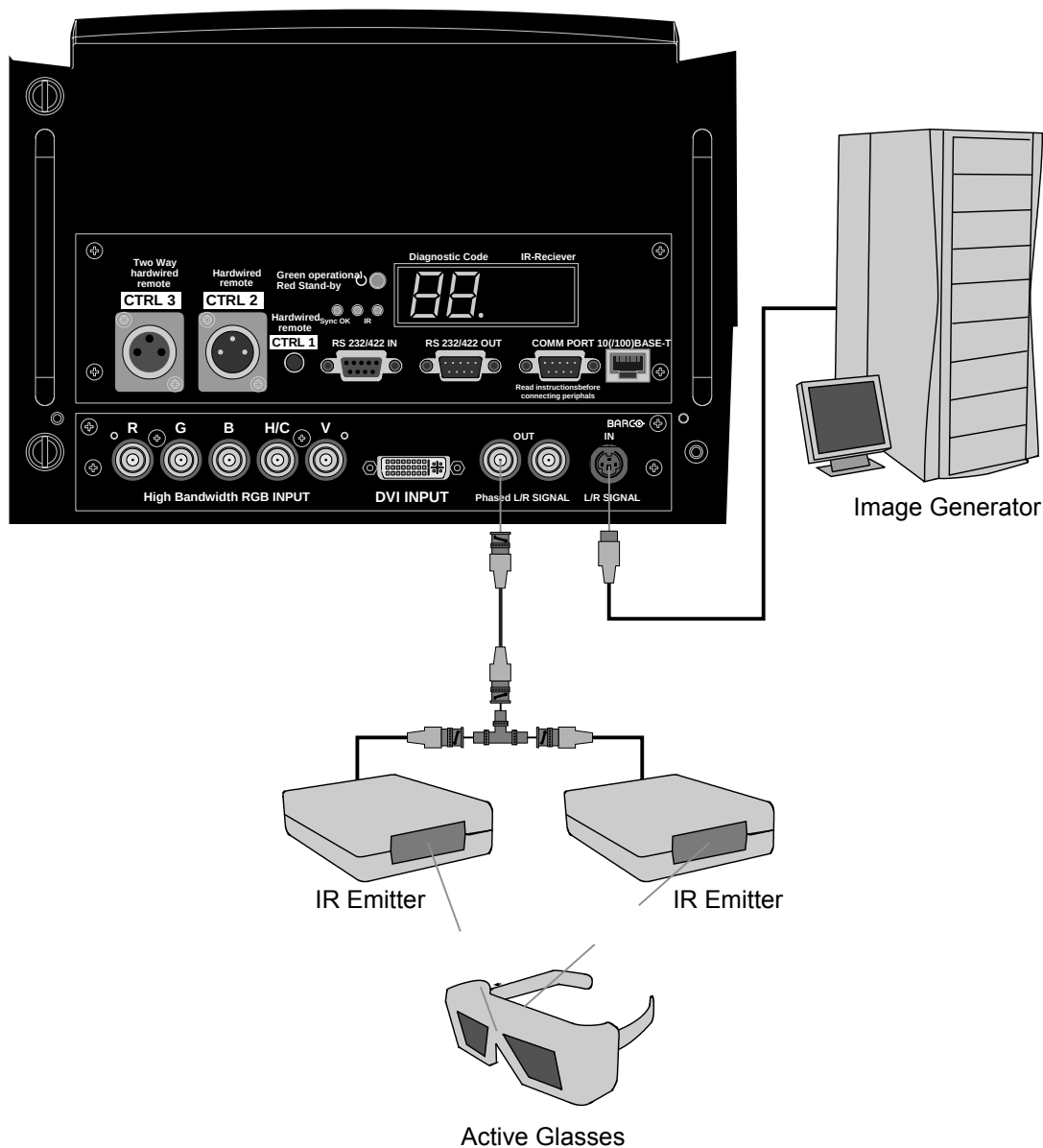


Image 4-7  
Left/Right phasing module connections

### 4.7.2 Multi-Channel Stereo Connections

#### Overview

- Stereo Set Up
- Single CADWall Configuration
- Multiple CADWall (Showroom Installation)

#### 4.7.2.1 Stereo Set Up

##### How to Set Up the Stereo Parameters?

The Transport Delay Setting must be the same on all Projectors.

The Stereo Phase must be same on all projectors, first adjust the Stereo phase on the projector where the IR Emitter signal comes from, then put the same value on the other projectors as well.

## 4.7.2.2 Single CADWall Configuration



This chapter will describe the Stereo Connections for e.g. a Triple-Channel CADWall Setup.

### How to connect the Stereo Signals in a Single CADWall Configuration?

1. Connect the Stereo Sync Signal coming from the IG to the Stereo In Mini DIN Input of all the projectors used in the Multi-Channel Configuration. (image 4-8)  
**Note:** On some IG's, the Stereo Sync is already present in the Vertical Sync Signal.  
**Note:** On some IG's, the Stereo Sync is added to the Vertical Sync Signal.
2. Connect a 'Phased L/R Signal' BNC Connector of the first projector to a 'Phased L/R Signal' BNC Connector of the second projector.
3. Continue until the Phased L/R Signal is connected 'Looped Through' to all the projectors of the Multi-Channel Configuration.
4. Connect the 'IR Emitters to a free 'Phased L/R Signal' BNC Connector.

All projectors will run on a common Stereo Sync (Phased L/R) Signal.

All Stereo IR Emitters will work in sync.

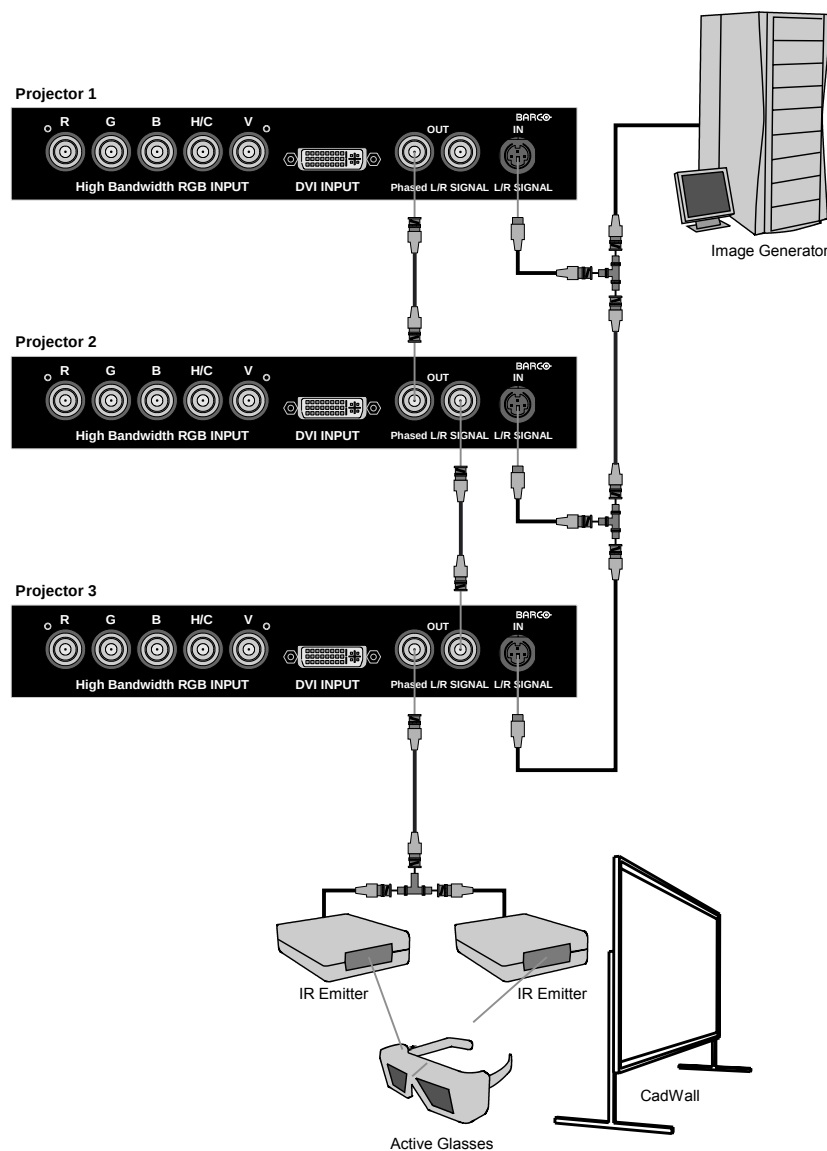


Image 4-8  
Stereo Signal Connections in a Single CADWall Configuration

### 4.7.2.3 Multiple CADWall (Showroom Installation)



This chapter will describe the Stereo Connections for e.g. a setup with 2 Triple-Channel CADWalls in the same room e.g. a Showroom. Both CADWalls have their own IG. We assume only the IG used by CADWall 1 has an Synchronous Output Range.

---



It is possible to let CADWall 1 work synchronous with IG 1. The projectors of CADWall 2, that are in asynchronous mode, will then display the image at the frequency of IG 1.

Respect the following 2 rules when setting up such a configuration:

1. The IR Emitter must be connected to a projector running in Synchronous Mode.
  2. All projectors connected to the synchronous IG must be set in Synchronous Mode.
  3. All other projectors (CadWall2, CadWall3, ...) must be set in Forced Asynchronous Mode.
- 

#### How to connect the Stereo Signals in a Multiple CADWall Configuration (Showroom Installation)?

1. The Stereo Sync Signal coming from both IG's is connected to the Stereo In Mini DIN Inputs of both Multi-Channel Configurations. (image 4-9)  
**Note:** On some IG's, the Stereo Sync is already present in the Vertical Sync Signal.
2. Connect a 'Phased L/R Signal' BNC Connector of the first projector to a 'Phased L/R Signal' BNC Connector of the second projector.
3. Continue until the Phased L/R Signal is connected 'Looped Through' to all the projectors of both Multi-Channel Configurations.
4. Connect the 'IR Emitters to a free 'Phased L/R Signal' BNC Connector on a projector that is set to Synchronous Mode.  
All projectors will run on a common Stereo Sync (Phased L/R) Signal.  
All Stereo IR Emitters in the room will work in sync.

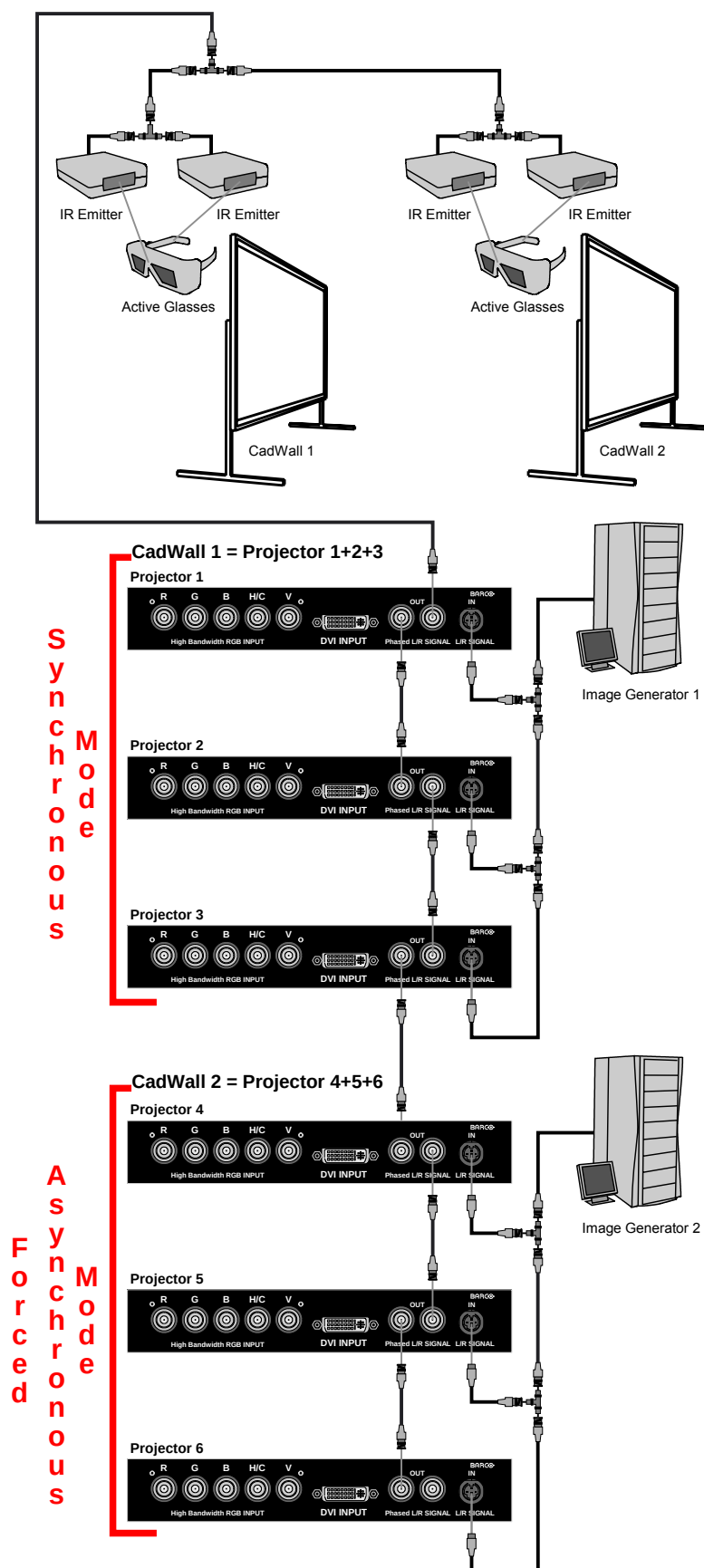


Image 4-9  
Stereo Signal Connections in a Multiple CADWall Configuration



## 5. GETTING STARTED

### Overview

- RCU & Local keypad
- Terminology overview
- Operating the projector
- Quick Set Up Adjustments
- Using the RCU
- Controlling the Projector

### 5.1 RCU & Local keypad

---

#### How controlling the projector ?

The projector can be controlled by the local keypad or by the remote control unit.

#### Location of the local keypad ?

The local keypad is located on the input side of the projector.

#### Remote control functions.

This remote control includes a battery powered infrared (IR) transmitter that allows the user to control the projector remotely. This remote control is used for source selection, control, adaptation and set up.

Other functions of the remote control are :

- switching between stand by and operational mode.
- switching to "pause" (blanked picture, full power for immediate restarting)
- direct access to all connected sources.

### 5.2 Terminology overview

---

#### Overview

The following table gives an overview of the different functionalities of the keys.

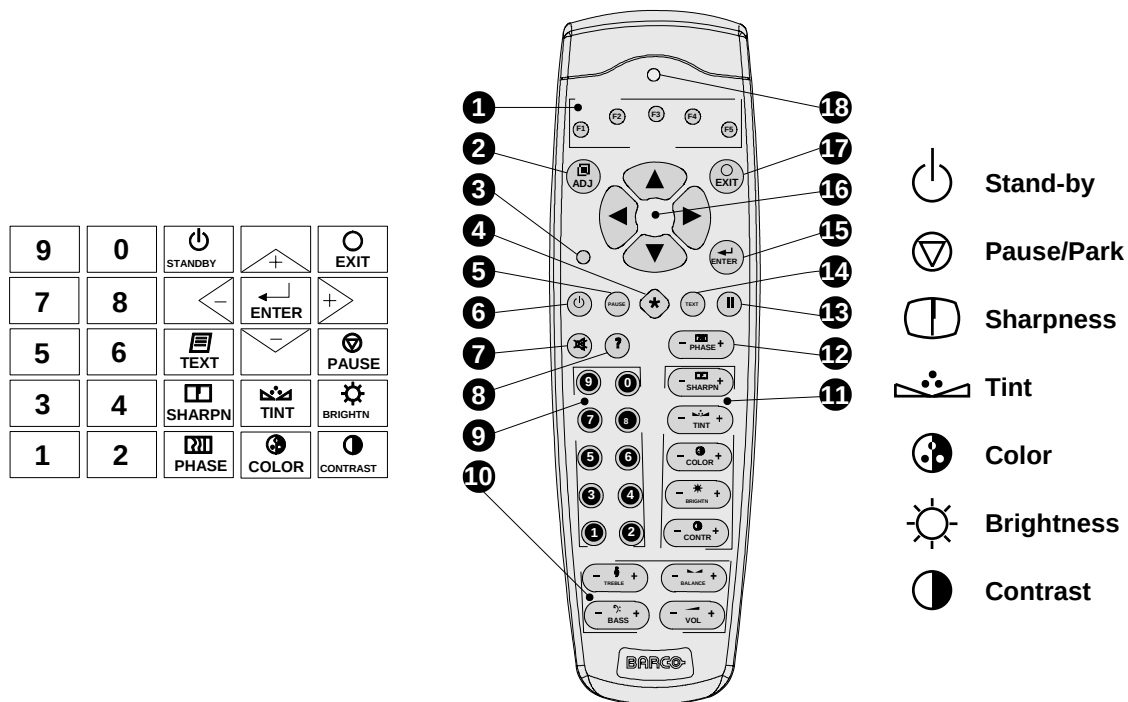


Image 5-1  
RCU & Local Keypad overview

|    |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Function keys     | user programmable keys with functions for direct access.                                                                                                                                                                                                                                                                                                                                                                                 |
| 2  | ADJ.              | Adjust key, to enter the adjustment mode                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3  | Address key       | (recessed key), to enter the address of the projector (between 0 and 9). Press the recessed address key with a pencil, followed by pressing one digit button between 0 and 9.                                                                                                                                                                                                                                                            |
| 4  | Selection key (*) | to direct access the zoom/focus/shift functions.                                                                                                                                                                                                                                                                                                                                                                                         |
| 5  | PAUSE             | to stop projection for a short time, press 'PAUSE'. The image disappears but full power is retained for immediate restarting.                                                                                                                                                                                                                                                                                                            |
| 6  | STBY              | standby button, to start projector when the power switch is switched on and to switch off the projector without switching off the power switch.<br><b>Attention : Switching to Standby. When the projector is running and you want to go to standby, press the standby key for 2 seconds until the message 'Saving data, please wait' is displayed. Do not press any longer on the standby key otherwise the projector will restart.</b> |
| 7  | MUTE              | not used                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8  | ?                 | not used                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9  | Digit buttons     | direct input selection.                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 10 | Audio controls    | not used                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 11 | Picture controls  | use these buttons to obtain the desired color setting.                                                                                                                                                                                                                                                                                                                                                                                   |
| 12 | Phase             | used to remove the instability of the image.                                                                                                                                                                                                                                                                                                                                                                                             |
| 13 | FREEZ             | press to freeze the projected image.                                                                                                                                                                                                                                                                                                                                                                                                     |
| 14 | TEXT              | when adjusting one of the image, e.g. controls during a meeting, the displayed bar scale can be removed by pressing 'TEXT' key first. To re-display the bar scale on the screen, press 'TEXT' key again.                                                                                                                                                                                                                                 |
| 15 | ENTER             | to start up the adjustment mode or to confirm an adjustment or selection in the adjustment mode.                                                                                                                                                                                                                                                                                                                                         |

|    |                          |                                                                                                                                                                                                                                                                                                                                                                         |
|----|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | Cursor keys              | to make menu selections when in the adjustment mode or to zoom/focus when the direct access is active.<br><br>Comparison between the cursor keys and the use of the '+' and '-' keys on the local keypad : RCU = local keypad<br><br>cursor key up = '+' key up<br>cursor key down = '-' key down<br>cursor key right = '+' key right<br>cursor key left = '-' key left |
| 17 | EXIT                     | to leave the adjustment mode or to scroll upwards when in the adjustment mode.                                                                                                                                                                                                                                                                                          |
| 18 | RCU operation indication | lights up when a button on the remote control is pressed. (This is a visual indicator to check the operation of the remote control)                                                                                                                                                                                                                                     |

Table 5-1

## 5.3 Operating the projector

### Overview

- Switching On
- Switching to standby
- Switching off
- Temperature error DMD

### 5.3.1 Switching On

#### How to switch on ?

1. Press the power switch to switch on the projector.
  - When '0' is visible, the projector is switched off.
  - When '1' is visible, the projector is switched on.

The projector starts in standby mode. The projector indication lamp is red.

#### Starting image projection

1. Press **Stand by** key once on the local keypad or on the remote control. (image 5-2)

The projector mode indication lamp will be green.

Or,

Press a digit button to select an input source.

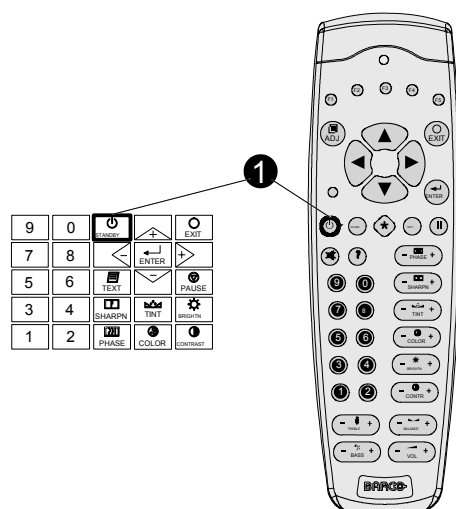


Image 5-2  
Standby key

### Lamp Run time indication

see chapter "4. Connections", "Switching On", page 27

### Lamp Light output indication

see chapter "4. Connections", "Switching On", page 27

### 5.3.2 Switching to standby

#### How to switch to standby?

1. Press **Standby** to switch the projector to standby.



**Switching to Standby.** When the projector is running and you want to go to standby, press the standby key for 2 seconds until the message 'Saving data, please wait' is displayed. Do not press any longer on the standby key otherwise the projector will restart.

---

### 5.3.3 Switching off

#### How to switch off the projector?

1. Press first **Standby**.
2. Let cool down the projector until the fans stop blowing, at least 15 min.
3. Switch off the projector with the power switch.

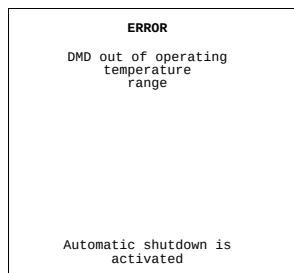
### 5.3.4 Temperature error DMD

#### Overview

When the temperature of one of the DMD is too low or too high the projector will be switched automatically to standby. Before switching to standby, the following message appears for 3 seconds on the screen : 'DMD out of operating temperature range. Automatic shutdown is activated.'

A '-t' appears on the LED display to indicate the user that the projector is switched to standby due to DMD temperature problems.

Operating temperature range of the DMD : +10°C and +35°C.



Menu 5-1

## 5.4 Quick Set Up Adjustments

---

### Overview

- Quick Lens Adjustment
- Quick OSD Color Change

### 5.4.1 Quick Lens Adjustment

#### What can be done?

This will adjust the zoom, focus, horizontal shift and vertical shift settings of the lens.

#### Quick Lens Adjustment

1. Press the \* key to start up the *Quick Lens Adjustment* menu.

The *Zoom/Focus Adjustment* menu will be displayed. (image 5-3)

2. Push the cursor key  $\uparrow$  or  $\downarrow$  to zoom and  $\leftarrow$  or  $\rightarrow$  to focus the image.
3. Press **ENTER** to continue with the *Shift Adjustment* menu.

The *Shift Adjustment* menu will be displayed. (image 5-4)

4. Push the cursor key  $\uparrow$  or  $\downarrow$  to shift the image up or down and  $\leftarrow$  or  $\rightarrow$  to shift the image left or right.

**Note:** Due to optical and mechanical limitations each lens type has its own shift capability, following illustration shows the shift capability for the available lenses in a *Front / Table* configuration. (image 5-5)

5. Press **EXIT** to leave the *Quick Lens Adjustment* menu.

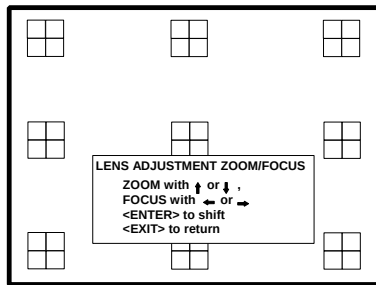


Image 5-3  
Zoom/Focus adjustment menu

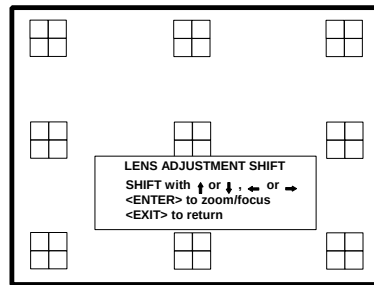
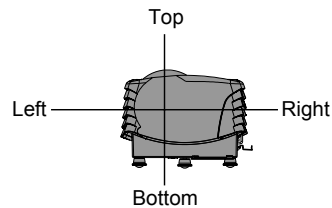


Image 5-4

Back View  
Front / Table Configuration



TLD 0.8 :1

TLD 1.2 :1

TLD 1.6 - 2.0 :1  
TLD 2.0 - 2.8 :1  
TLD 2.8 - 5.0 :1  
TLD 5.0 - 8.0 :1

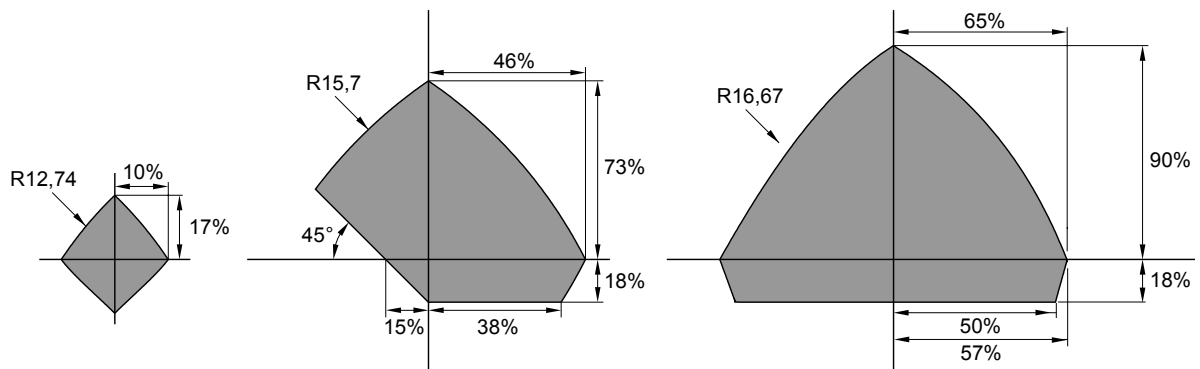


Image 5-5  
Shift Capability for the available lenses in a Front / Table configuration

## 5.4.2 Quick OSD Color Change

### What can be done?

Quick change of the color of the highlighted items.

The highlighted items can be displayed in:

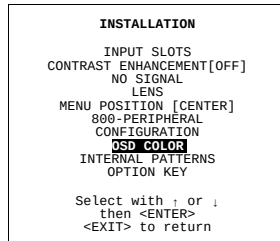
- Red
- Green
- Yellow

### How to change the On Screen Color

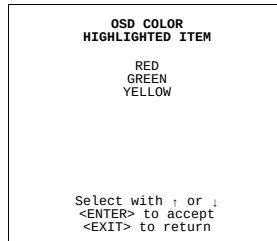
1. Press **ADJUST** or **ENTER** key to start up the *Adjustment Mode*.
2. Push the cursor key ↑ or ↓ to highlight *Installation*. (menu 5-2)
3. Press **ENTER** to select.

The *OSD* menu will be displayed. (menu 5-3)

4. Push the cursor key ↑ or ↓ to highlight *the desired color*.
5. Press **ENTER** to activate the selected color.



Menu 5-2



Menu 5-3

## 5.5 Using the RCU

---

### Pointing directly to the IR Sensor

When using the wireless remote control, make sure you are within the effective operating distance, in a straight line: 30m (100ft). The remote control unit will not function properly if strong light strikes the sensor window or if there are obstacles between the remote control unit and the projector IR sensor.

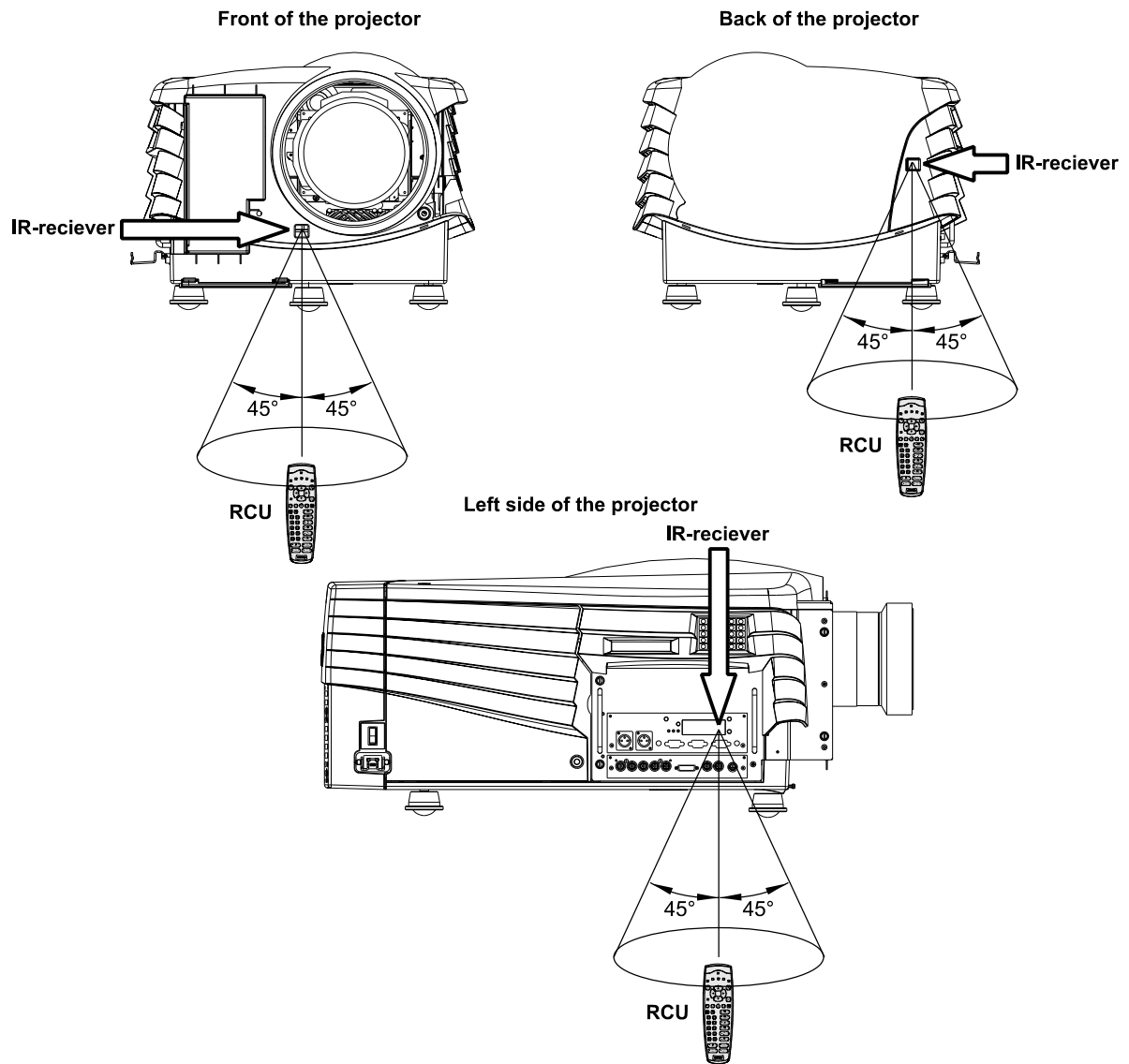


Image 5-6  
RCU to IR Sensors

### The IR Communication Leds

- Whenever the IR Sensor on the projector receives an IR signal the Red IR-Received Led will light up.

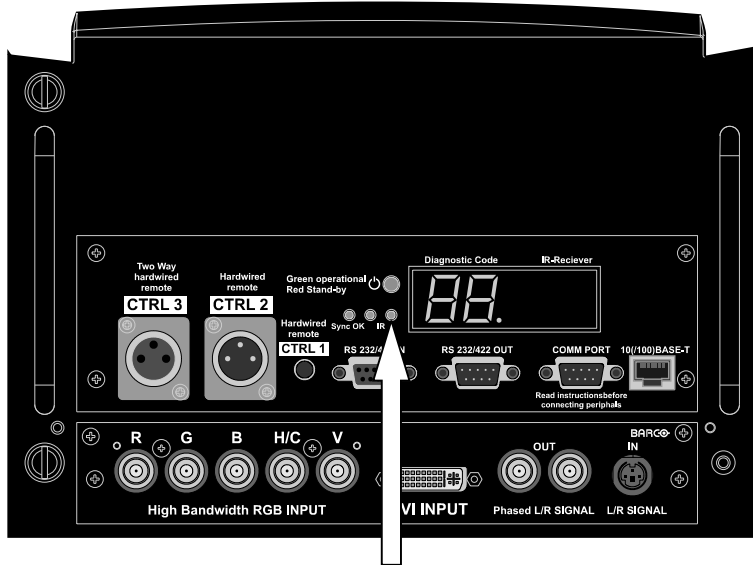


Image 5-7  
IR-Received Led

- In case there is IR communication between the RCU and the projector the Green IR-Acknowledged Led will light up.

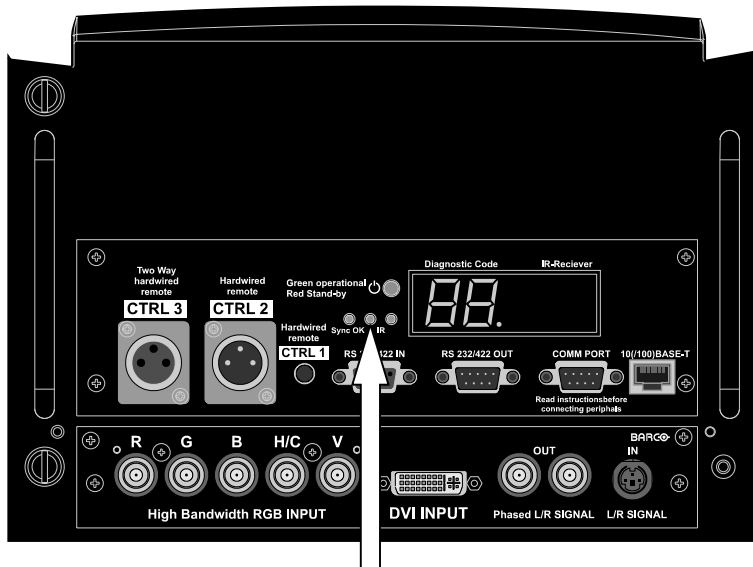


Image 5-8  
IR-Acknowledged Led

### Pointing to the Reflective Screen

1. Point the front of the RCU to the reflective screen surface. (image 5-9)

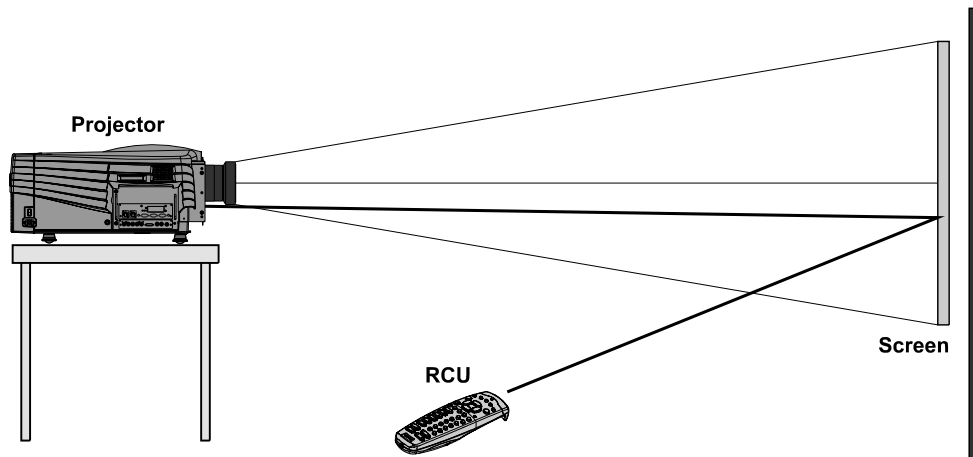


Image 5-9  
RCU to Reflective Screen

### Hardwired Remote Input

1. Plug one end of the remote cable in the connector on the bottom of the RCU.
2. Plug the other end in the connector in the front panel of the projector labelled **CTRL 1**. (image 5-10)

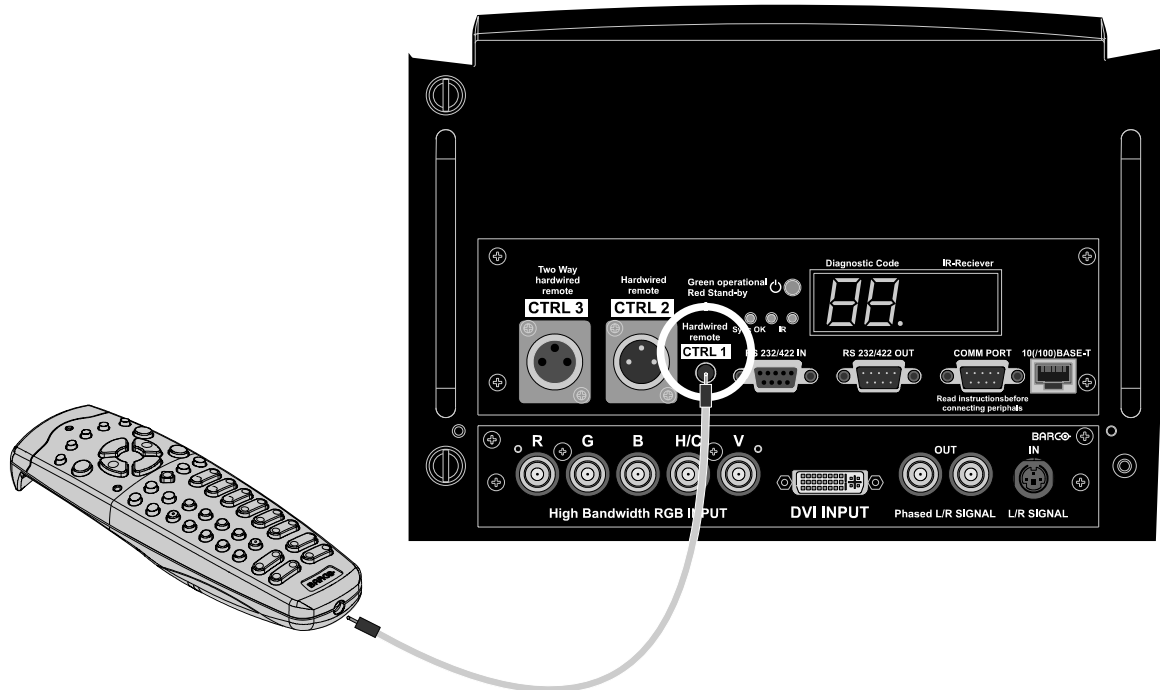


Image 5-10  
RCU to Hardwired Remote Input



When using the Hardwired Remote Input the IR Sensor on the projector is disabled, the projector can only be controlled by the hardwired connected RCU.

### 5.6 Controlling the Projector

#### Overview

- Common Address
- Projector Address
- RCU Address
- Input Selection
- Picture Controls
- Menus on Local LCD Display

#### 5.6.1 Common Address

##### What is Common Address 0?

Every projector has a Common Address default set to '0', when the RCU is set to address '0', every projector, without exception will listen to the commands given by this RCU.

##### When to use Common Address 0?

- Since the RCU is default set to address '0', this is used by default to control the projector in a single projector setup.
- The Common Address is used to control multiple projectors using only a single RCU.

##### When to use Common Address 1?

Most RCU's used by other electronic equipment are set to address '0', to disable the interference of other RCU's the Common Address of the projector(s) can be set to '1'. When the projector's RCU is set to address '1', every projector, without exception will listen to the commands given by this RCU.

##### How to set the Common Address?

See 'Change Common Address' in the chapter 'Service Mode'.

#### 5.6.2 Projector Address

##### When to use the Projector Address?

To control a separate projector in a multiple projector setup.

##### What is the Projector Address?

Each projector can be set to an individual Projector Address, this can be set between '0' and '255'.



In a Linked CLO and/or Dynacolor™ setup a maximum of 14 projectors can be linked, all projectors must have a different projector address between 0 and 13 and all projectors must have the same baudrate.

| Projector Address | Controlled by                               |
|-------------------|---------------------------------------------|
| 0–9               | RCU                                         |
| 0–255             | Computer (IBM PC or compatible, Apple, ...) |



Regardless of the Projector Address, the projector will still respond to a RCU set to address '0' or '1' through the Common Address.

##### How to set the Projector Address?

See 'Change Projector Address' in chapter 'Service Mode'.

#### 5.6.3 RCU Address



The RCU Address can be any digit between '0' and '9'.

### How to set the RCU Address?

1. Press the recessed **Address** key with a pencil. (image 5-11)

The Projector Address for every projector in the room will be displayed as a 3 digit code in a text box on the screen.

2. Enter the RCU Address by pressing a single digit key, within 5 seconds after pushing the address key.

**Note:** If the Projector Address displays '003' press the digit key **3** on the RCU. Do not enter the 3 digit code '003', this will set the RCU to address '0'.

**Note:** If no digit is entered within 5 seconds the RCU will return to the default '0' address.

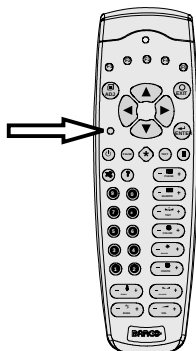


Image 5-11  
Address Key

### 5.6.4 Input Selection

#### How to select the desired input?

1. Press the digit key on the RCU corresponding with the desired input.

| Digit Key | Type of Input      |
|-----------|--------------------|
| 1         | 5x BNC Cable Input |
| 2         | DVI Input          |

Table 5-3  
Input Selection

### 5.6.5 Picture Controls

#### How to use Picture Controls?

1. Push the + or – key of the desired Picture Control e.g. 'brightness'. (image 5-12)

A text box with a bar scale indication and function name of the control, e.g. 'brightness' appears on the screen. The length of the bar scale and the value of the numeric indication indicate the current memorized setting for this source. The length of the bar scale and the value of the numeric indication will change whenever an adjustment is made. (image 5-13)

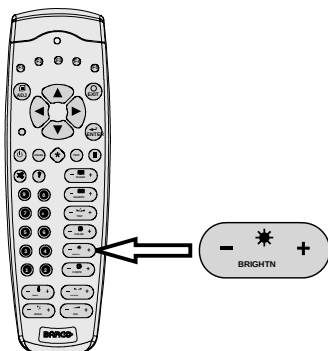


Image 5-12  
Picture Control key

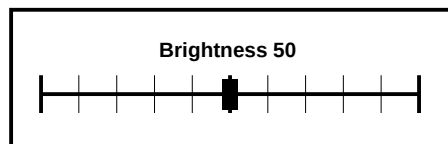


Image 5-13  
Barscale indication

### Overview of the Picture Controls

|            |                                                                                                                                                                                                                                               |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sharpness  | Use the + button for a sharper picture.<br>Use the - button for a softer picture.                                                                                                                                                             |
| Tint       | Not used                                                                                                                                                                                                                                      |
| Color      | Not used                                                                                                                                                                                                                                      |
| Brightness | A correct 'brightness' setting is important for good image reproduction.<br>Use the + button for a higher brightness.<br>Use the - button for a lower brightness.                                                                             |
| Contrast   | A correct 'contrast' setting is important for good image reproduction. Adjust the contrast to the level you prefer, according to room lighting conditions.<br>Use the + button for a higher contrast.<br>Use the - button for lower contrast. |

#### 5.6.6 Menus on Local LCD Display

##### Overview

When text is 'off', no menus will be displayed on the projection screen. But on the local LCD display, it is still possible to scroll through the menus. The menus will be displayed line by line in the same order as they were displayed on the projection screen. Adjustments can be done while the projector is running without projecting the disturbing menus on the screen.

Use the cursor keys to scroll through the menus and press **ENTER** to activate the displayed menu.

## 6. SPECIAL FEATURES

### 6.1 i-Blend™

#### What can be done?

The standard i-Blend™ feature will allow to set up a 2 or 3 channel system with a single high bandwidth PC working as IG.

A single high-bandwidth PC or workstation with an output >170 Mhz generates a wide high-resolution image, this is fed to all projectors. Each then selects the area to display, including the overlap, using the i-Blend™ functionality. Depending on the application, Electronic or Optical Soft Edge Blending can be used.

The initial low-refresh rate image is upconverted to 112 Hz using the built-in Stereo Creator™.

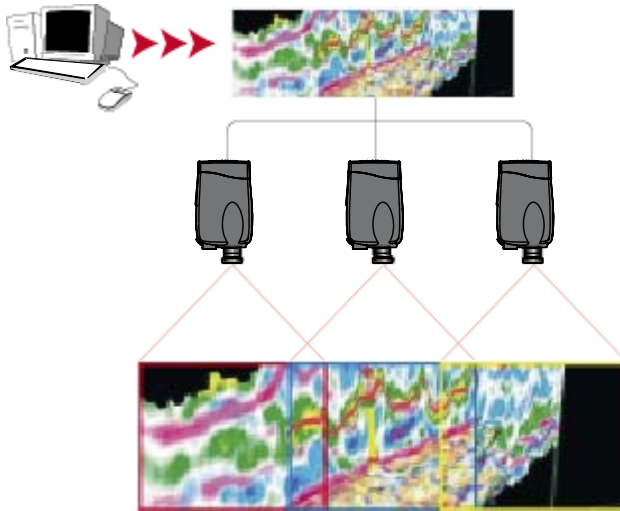


Image 6-1  
i-Blend™

#### How to set up an i-Blend™ System?

This procedure will describe how to set up a 2 channel system for a single high bandwidth PC with a pixel clock of 181,75 MHz.

1. Set the active pixels for projector 1 to 1400 and start pixel 0. (image 6-2)
2. Set the active pixels for projector 2 to 1400 and start pixel 1225.

This will give a total image with a resolution of 2625 x 1050 and an overlap of 175 pixels.

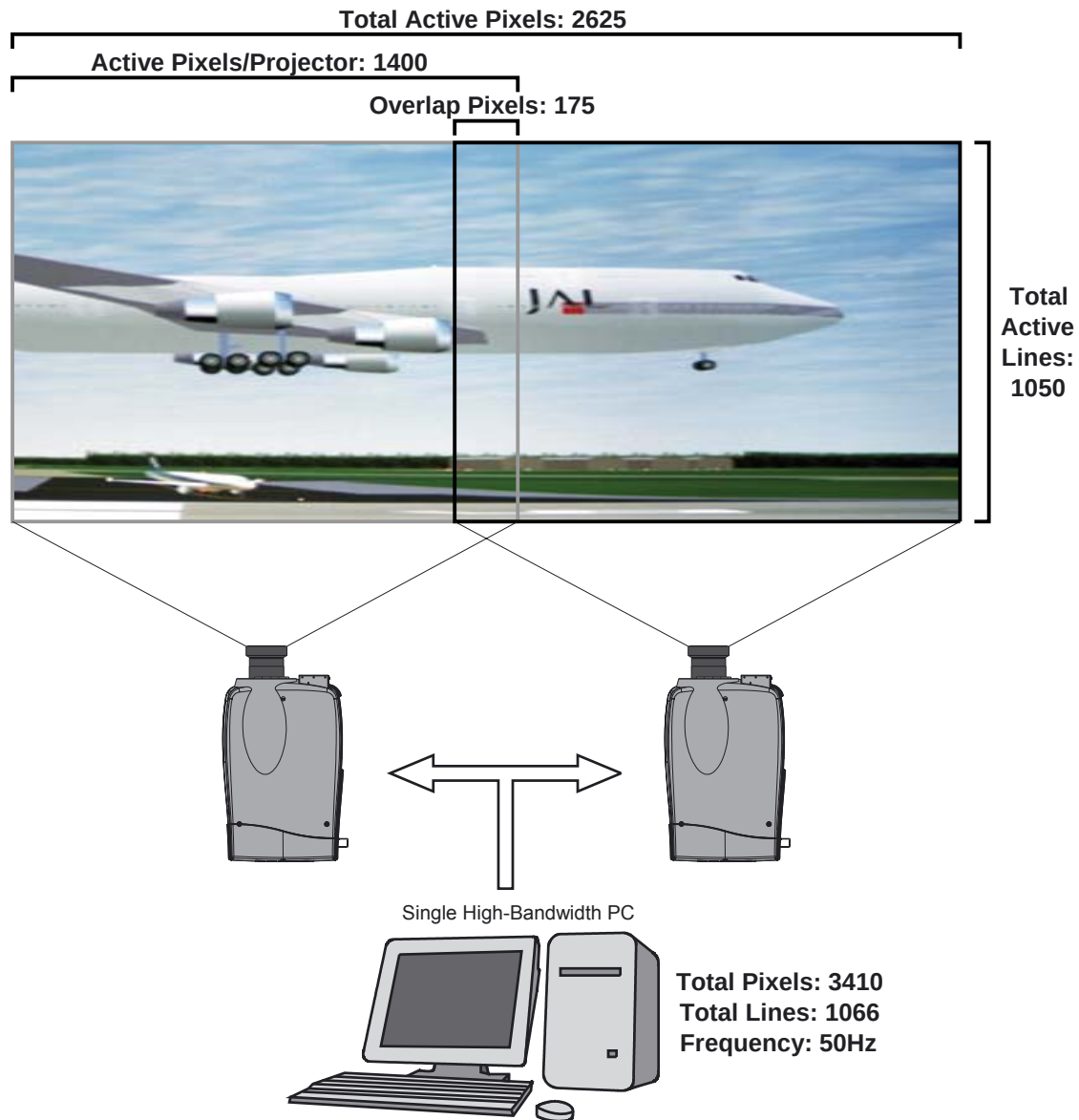


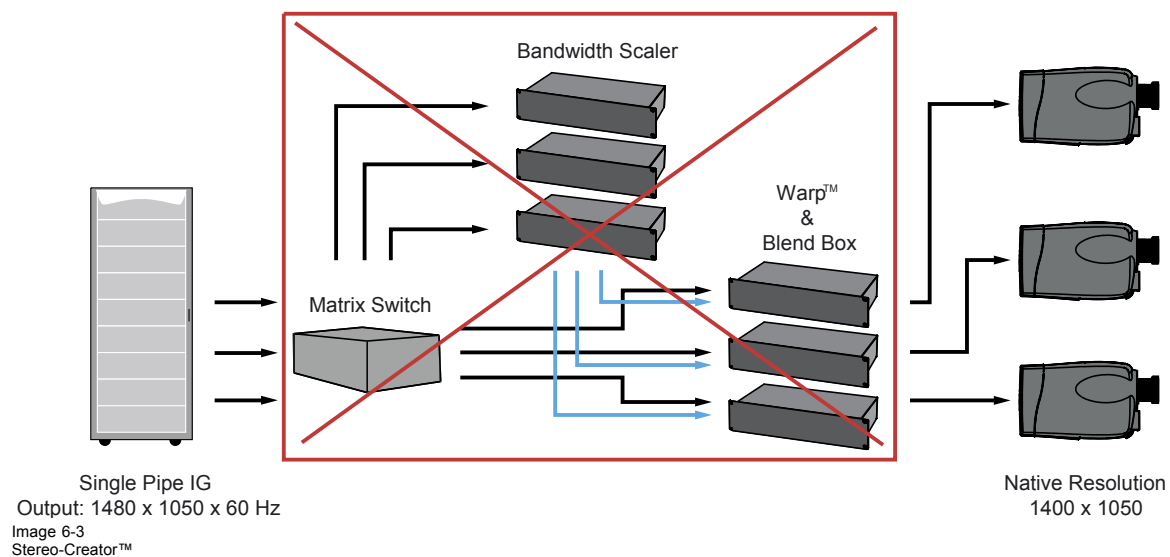
Image 6-2  
i-Blend™

## 6.2 Stereo-Creator™

### What can be done with Stereo-Creator™?

The Stereo-Creator™ is a market-leading, patented Barco technology, which enables you to drive up to three blended stereo Galaxy projectors in native SXGA+ resolution with a single pipe image generator, without any need for external equipment.

A major advantage for the user is the Galaxy SXGA+ projectors' direct feed of native SXGA+ high-resolution information. It contains far more detail while omitting possible artifacts and delays caused by external scalars, warping and bending boxes.





## 7. RANDOM ACCESS

### Overview

- Random Access Overview
- Starting Up Random Access
- File Service
- Picture Tuning
- Geometry
- Stereo Options

### 7.1 Random Access Overview

---

#### Random Access Overview

- File Service
  - Load
  - Edit Warp 1
  - Edit Warp 2<sup>1</sup>
  - Rename
  - Copy
  - Delete
  - Options
    - o File Sort [Name/Index]
    - o File Load [Automatic/Manual]
    - o Serial File Load [On/Off]
- Picture Tuning
  - Gamma
  - Input Balance
    - o White Balance
    - o Black Balance
    - o Default
  - Windowing
    - o Blanking
    - o Shift
    - o Size
    - o Geo Soft Edge [On/Off]

---

1. Only available in Stereo Mode

- Geometry
  - Load
  - Edit
    - Coarse
    - Linearity
    - Fine
    - Shift
    - Transport Delay
      - Mode [Automatic/Manual]
      - Transport Delay Setting
    - Blanking/Soft Edge (Optional)
      - Active [On/Off]
      - Shape
      - Soft Edge (Optional)
    - Reset
      - Coarse
      - Linearity
      - Fine
      - Blanking/Soft Edge (Optional)
        - Soft Edge (Optional)
        - All
      - All
  - Rename
  - Copy
  - Delete
- Stereo Options<sup>1</sup>
  - Stereo Phase
  - Invert Stereo [Yes/No]
  - Master Channel [Left/Right]
  - Stereo Mode [Active/Passive]
  - Dark Time
  - Forced Asynchronous [Yes/No]

## 7.2 Starting Up Random Access

---

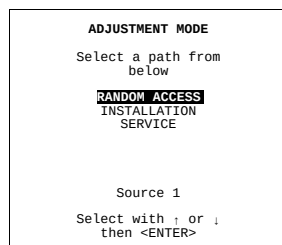
### How to start up Random Access?

1. Press **ADJUST** or **ENTER** key to start up the *Adjustment Mode*. (image 7-1)

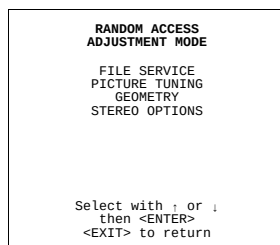
The *Adjustment Mode* menu will be displayed.

2. Push the cursor key ↑ or ↓ to select *Random Access*. (menu 7-1)
3. Press **ENTER** to select.

The *Random Access* menu will be displayed. (menu 7-2)



Menu 7-1



Menu 7-2

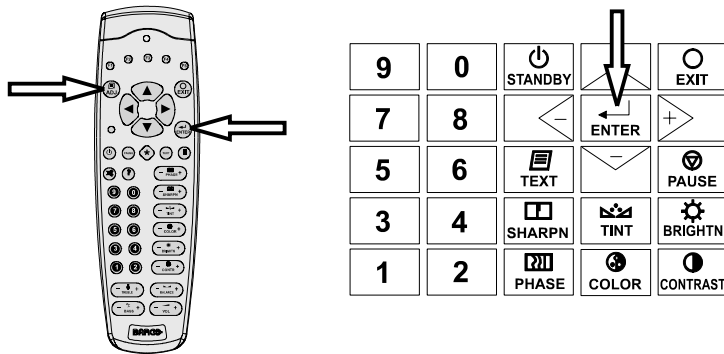


Image 7-1  
Adjust or Enter key

## 7.3 File Service

### Overview

- File annotation
- Possible file manipulations
- Starting Up File Service
- Load File
- Edit WARP1
- Edit WARP2
- Changing the settings
- Correct value
- Edit WARP2 File
- Rename File
- Copy File
- Delete File
- File Options

### 7.3.1 File annotation

#### How a file is built up

The file notation on a menu is built up in different parts. Let us have a look to these parts.

Take the following notation : xxxxxxxx.eee n ppppXppppi

|           |                                                                                                                                                                                                                          |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xxxxxxx   | base name, 8 characters                                                                                                                                                                                                  |
| eee       | file extension<br>first character C : custom made file<br>first character S : standard file<br>The second and third character is used for a following number (= file index). The file index for custom files : 01 to 20. |
| n         | source number                                                                                                                                                                                                            |
| ppppXpppp | active pixel rating                                                                                                                                                                                                      |
| i         | i or blank<br>i = interlaced file<br>blank = not interlaced                                                                                                                                                              |

Table 7-1

### 7.3.2 Possible file manipulations

#### Connecting a new source.

Before using a new source, a correct file has to be installed. The projector's memory contains a list of files corresponding to the most used sources. When the new source corresponds with one of these files, the file can be loaded and saved for future use. When there is a little difference, the file can also be loaded and then edited until the source specs are reached.



**File loading can be done automatically. Files with a ~ in front of the file name are temporary files. These files will be deleted when switching to another source.**

#### Possible file Manipulations

The following file manipulations are possible :

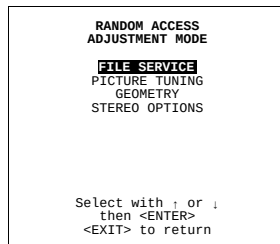
- Load : installation of a file for a new source.
- Edit : editing a loaded file to the source specs.
- Rename : renaming a file.
- Copy : copying a file.
- Delete : deleting a file
- Options : way of sorting the files.

### 7.3.3 Starting Up File Service

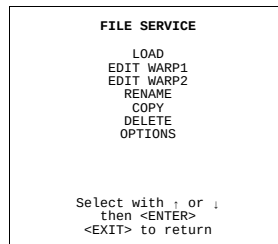
#### How to Start Up File Service?

1. Push the cursor key ↑ or ↓ to highlight *File Service*. (menu 7-3)
2. Press **ENTER** to select.

The *File Service* menu will be displayed. (menu 7-4)



Menu 7-3



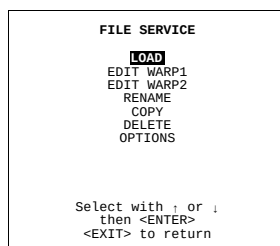
Menu 7-4

### 7.3.4 Load File

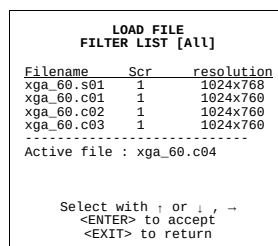
#### How to Start Up Load File?

1. Push the cursor key ↑ or ↓ to highlight *Load*. (menu 7-5)
2. Press **ENTER** to select.

The *Load* menu displays the corresponding files depending on the installed filter. (menu 7-6)



Menu 7-5



Menu 7-6

#### How to change the Filter List Setting?

1. Push the cursor key ↑ or ↓ to to highlight *filter list*.

- Press **ENTER** to toggle the annotation between brackets.

|       |                                                                                                                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [ALL] | all files that can be loaded will be displayed                                                                                                                                                                                 |
| [FIT] | only the best fitting files will be displayed (with a distinction of $\pm 2$ lines and line duration of $\pm 300$ ns, if nothing is found within this small area, the projector continues searching until it finds something). |

### How to Load a File?

- Push the cursor key  $\uparrow$  or  $\downarrow$  to select the best fitting file. (menu 7-7)
- Press **ENTER** to select.

A confirm Load file menu will be displayed with the newly created file and the one on which the new file is based on. (menu 7-8)

- Press **ENTER** to confirm the new creation or **EXIT** to return to the load file menu.

| LOAD FILE<br>FILTER LIST [All]                |     |            |
|-----------------------------------------------|-----|------------|
| Filename                                      | Scr | resolution |
| xga_60.s01                                    | 1   | 1024x768   |
| xga_60.c01                                    | 1   | 1024x768   |
| xga_60.c02                                    | 1   | 1024x768   |
| xga_60.c03                                    | 1   | 1024x768   |
| -----                                         |     |            |
| Active file : xga_60.c04                      |     |            |
| Select with : or $\downarrow$ , $\rightarrow$ |     |            |
| <ENTER> to accept                             |     |            |
| <EXIT> to return                              |     |            |

Menu 7-7

| CONFIRM<br>LOAD FILE |             |
|----------------------|-------------|
| create file          | xga_60.c02  |
| based on file        | xga_60.s01? |
| <ENTER> to return    |             |
| <EXIT> to return     |             |

Menu 7-8



During a load file, the actual file is displayed next to the indication *Active file*.



When scrolling through the files, the image will be adapted according to the settings of the selected file ( on line adaptation ) .

### The image is not perfect?

If the displayed image is not correct after selecting the best fitting file, go to the Edit WARP1 menu, select the active file and change the File Settings.

## 7.3.5 Edit WARP1

### What can be done?

- When a Mono Image is projected, within this menu, it is possible to change the File Settings of a selected source file.
- When a Stereo Image is projected, within this menu, it is possible to change the File Settings for the Left Image of a selected source file.

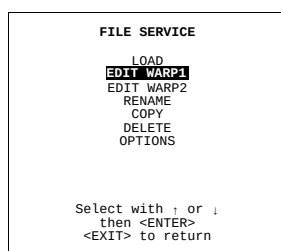
### How to Start Up Edit WARP1 File?

- Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Edit WARP1*. (menu 7-9)
- Press **ENTER** to select.

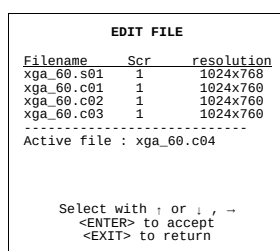
The Edit file adaptation menu will be displayed. (menu 7-10)

- Select the file which must be edited (mostly the active file).

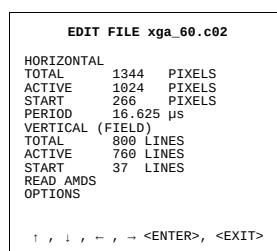
The file name will be displayed in the upper right corner. (menu 7-11)



Menu 7-9



Menu 7-10



Menu 7-11

### 7.3.6 Edit WARP2

#### When available?

The Edit WARP2 adjustment is only available when a Stereo Image is projected, when projecting a Mono Image this item will be grayed out in the *File Service* menu.

#### What can be done?

When a Stereo Image is projected, within this menu, it is possible to change the File Settings for the Right Image of a selected source file.

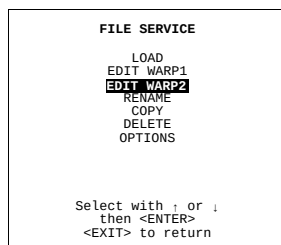
#### How to Start Up Edit WARP2 File?

1. Push the cursor key ↑ or ↓ to highlight *Edit WARP2*. (menu 7-12)
2. Press **ENTER** to select.

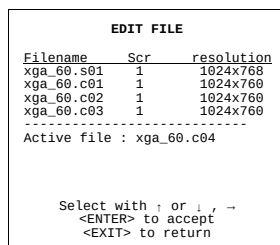
The Edit file adaptation menu will be displayed. (menu 7-13)

3. Select the file which must be edited (mostly the active file).

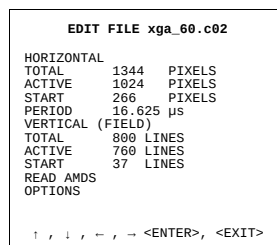
The file name will be displayed in the upper right corner. (menu 7-14)



Menu 7-12



Menu 7-13



Menu 7-14

### 7.3.7 Changing the settings

#### Different methods

The 3 different methods to change a setting will be described hereafter. These methods are:

- with the numeric keys on the remote control.
- with the arrow keys selecting the changing digit.
- with the arrow keys counting up or down.

#### How to change a setting with the numeric keys?

1. Push the cursor key ↑ or ↓ to highlight an item.  
The color of the selected item will change.
2. Press **ENTER** to activate the digits.
3. Enter directly with the numeric keys on the RCU or local keypad the new value.

#### How to change a setting with the cursor keys?

1. Push the cursor key ↑ or ↓ to highlight an item.

The color of the selected item will change.

2. Press **ENTER** to activate the digits.
3. Push the cursor key ← or → to select the changing digit.
4. Push the cursor key ↑ or ↓ to scroll to the desired digit.
5. When finished, press **ENTER** to confirm.

### How to change a setting with the cursor keys and counting up or down?

1. Push the cursor key ↑ or ↓ to highlight an item.

The color of the selected item will change.

2. Press **ENTER** to activate.
3. Counting up or down by pushing the cursor key ← or →.

## 7.3.8 Correct value

### What is already available during start up?

During the installation of a file with LOAD, the horizontal period, the total number of vertical lines and the interlaced mode are automatically measured and filled in, in the menu table. These values will be available when starting up the EDIT procedure of an active file.



**CAUTION:** Do not adjust these settings on an active file, they are used to identify the input source file.

### How to find the correct values for the item in the Edit file menu?

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horizontal Total Pixels | <p>If the value for "Horizontal Total Pixels" is wrong sampling mistakes (small vertical bars with noisy and unsharp data in the projected image) will be seen especially in high resolution images.</p> <p>Use a pixel on/off pattern when adjusting the Horizontal Total Pixels.</p> <p>Select "Total" and adjust the pixel quantity. Adjust for zero bars.</p> <p>hint: if the number of bars increase, adjust in the other direction.</p> |
| Active Pixels           | <p>The "Active Pixels" : determine the width of the window on the screen. This value is normally given in the source specifications. If not, adjust until full image is displayed (no missing pixels).</p>                                                                                                                                                                                                                                    |
| Horizontal Start        | <p>number of pixels between the beginning of the input signal and the start of the video information in the signal.</p>                                                                                                                                                                                                                                                                                                                       |
| Horizontal Period       | <p>already filled in with the correct value when active file.</p>                                                                                                                                                                                                                                                                                                                                                                             |
| Vertical Total Lines    | <p>already filled when an active file is selected to be edited</p>                                                                                                                                                                                                                                                                                                                                                                            |
| Active Lines            | <p>number of horizontal lines determining the height of the projected image. This value is normally given in the specification of the source. If not, adjust until full image height is displayed (no missing lines)</p>                                                                                                                                                                                                                      |
| Vertical Start          | <p>number of lines between the start of the input signal and start of the image on the screen.</p>                                                                                                                                                                                                                                                                                                                                            |
| Read AMDS               | <p>AMDS = automatic mode detection &amp; synchronization</p> <p>During the installation of a file with LOAD, the system automatically measured the horizontal period, the total vertical lines and the interlaced mode. When selecting Read AMDS, the system remeasures the above indicated items.</p>                                                                                                                                        |

### How to install the correct settings for the options in the Edit file menu.

```

EDIT FILE OPTIONS
Source number      1
Clamp position     [leading]
Clamp delay        0
Clamp width        10
Field select       [both]
Vertical refresh   [sync]
Vertical sync polarity [leading]

Select with ↑ or ↓
<ENTER> to toggle
↑ or ↓ to change value
<EXIT> to return

```

Menu 7-15

|                |                                                                                                                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source number  | The source number of a non-active source can be changed to any other source number. This makes it possible to create a file for future source numbers.                                                        |
| Clamp position | Clamping determines the black level of the signal. The clamp pulse can be related to the leading or the trailing edge of the sync pulse. Use the <b>ENTER</b> key to toggle between [leading] and [trailing]. |
| Clamp delay    | The time between the leading edge of the clamp pulse and the locked edge of the sync pulse. Can be any value between 0 and 255. Change the value by pushing the cursor key ↑ or ↓.                            |
| Clamp width    | The width of the clamp pulse can be any value between 0 and 255. Change the value by pushing the cursor key ↑ or ↓.                                                                                           |

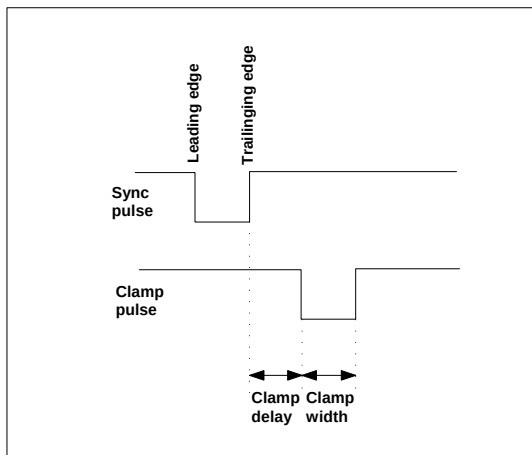


Image 7-2  
Example for *Clamp position* [trailing]

|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field select                                    | <p>Default [both]</p> <p>The field select is only used for interlaced images. One frame of an interlaced image contains two fields, an even and an odd field. The choice exists to project [both] fields on the screen or only the [even] or [odd] field.</p> <p>Use the <b>ENTER</b> key to toggle between [both], [even] and [odd].</p> <p><b>If the active Stereo Compatibility Option is installed, the field select parameter will be changed into a [left] and [right] selecting parameter which will be selectable for stereo files. This setting will then be saved in the active image file.</b></p>                                                                                                                                |
| Vertical refresh [sync/async]                   | <p>The way of updating the image information on the DMD panels. Not available for PAL-NTSC-SECAM sources. Where this option will be displayed in gray.</p> <ul style="list-style-type: none"> <li>For sources with a vertical frequency up to 62 Hz : the vertical refresh rate is the same as the vertical frequency of the incoming source. This is a necessity to project moving images without 'motion artifacts'. For stationary images with a vertical frequency up to 62 Hz it is still possible to use asynchronous refresh.</li> <li>For sources with a vertical frequency higher than 62 Hz : the vertical refresh is different than the vertical frequency of the incoming source. Synchronous refresh cannot be used.</li> </ul> |
| Vertical Sync Polarity: [leading] or [trailing] | <p>The vertical refresh can be synchronized with the leading sync edge or trailing sync edge. Default on [leading]. Toggling to [trailing] is only necessary for special applications where the trailing edge of the sync signal has to be taken as a reference. Use the <b>ENTER</b> key to toggle between [leading] or [trailing]</p>                                                                                                                                                                                                                                                                                                                                                                                                      |

### 7.3.9 Edit WARP2 File

#### What can be done?



This item is only available when running in Stereo Mode.

#### How to Start Up Edit WARP2 File?

1. Push the cursor key ↑ or ↓ to highlight *Edit WARP2*.
2. Press **ENTER** to select.

The Edit file adaptation menu will be displayed. (menu 7-16)

| EDIT FILE                |     |            |
|--------------------------|-----|------------|
| Filename                 | Scr | resolution |
| xga_60.s01               | 1   | 1024x768   |
| xga_60.c01               | 1   | 1024x768   |
| xga_60.c02               | 1   | 1024x768   |
| xga_60.c03               | 1   | 1024x768   |
| -----                    |     |            |
| Active file : xga_60.c04 |     |            |
| Select with ↑ or ↓, →    |     |            |
| <ENTER> to accept        |     |            |
| <EXIT> to return         |     |            |

Menu 7-16

### 7.3.10 Rename File

#### How to Start Up File Rename?

1. Push the cursor key ↑ or ↓ to highlight *Rename*. (menu 7-17)
2. Press **ENTER** to select.

The Rename selection menu will be displayed. (menu 7-18)

3. Push the cursor key ↑ or ↓ to select a file name.
4. Press **ENTER** to select.

The Rename file menu will be displayed with the selected file name already filled in, leave in the 'From file name :' area and in the 'To file name :' area. The first character in the 'To file name :' area is highlighted.

| FILE SERVICE       |  |
|--------------------|--|
| LOAD               |  |
| EDIT WARP1         |  |
| EDIT WARP2         |  |
| <b>RENAME</b>      |  |
| COPY               |  |
| DELETE             |  |
| OPTIONS            |  |
| Select with ↑ or ↓ |  |
| then <ENTER>       |  |
| <EXIT> to return   |  |

Menu 7-17

| RENAME FILE              |     |            |
|--------------------------|-----|------------|
| Filename                 | Scr | resolution |
| xga_60.s01               | 1   | 1024x768   |
| xga_60.c01               | 1   | 1024x768   |
| xga_60.c02               | 1   | 1024x768   |
| xga_60.c03               | 1   | 1024x768   |
| -----                    |     |            |
| Active file : xga_60.c04 |     |            |
| Select with ↑ or ↓, →    |     |            |
| <ENTER> to accept        |     |            |
| <EXIT> to return         |     |            |

Menu 7-18

#### Changing the characters

1. Push the cursor keys ← or → to select the desired character. (menu 7-19)  
Or,  
Change that character by pushing the cursor keys ↑ or ↓. Numeric characters can be entered directly with numeric keys on the RCU.  
Or,  
Press **ENTER** to confirm.  
The renamed file is entered in the list of files.
2. Press **EXIT** to return to the Rename menu selection.

No changes are made.

```

RENAME FILE

From file name:
xga_60.c02
To file name :
demo.c02

Select with ← or →
Reprogram with ↑ or ↓
<ENTER> to confirm
<EXIT> to return
    
```

Menu 7-19

### 7.3.11 Copy File

#### How to Start Up Copy File?

1. Push the cursor key ↑ or ↓ to highlight *Copy*. (menu 7-20)
2. Press **ENTER** to select.  
The Copy selection menu will be displayed. (menu 7-21)
3. Push the cursor key ↑ or ↓ to select a file name.
4. Press **ENTER** to select.

The Copy file menu will be displayed with the selected file name already filled in, leave in the 'From file name : ' area and in the 'To file name : ' area. The first character in the 'To file name : ' area is highlighted.

```

FILE SERVICE

LOAD
EDIT WARP1
EDIT WARP2
RENAME
COPY
DELETE
OPTIONS

Select with ↑ or ↓
then <ENTER>
<EXIT> to return
    
```

Menu 7-20

```

COPY FILE

Filename  Scr  resolution
xga_60.s01  1    1024x768
xga_60.c01  1    1024x768
xga_60.c02  1    1024x768
xga_60.c03  1    1024x768
-----
Active file : xga_60.c04

Select with ↑ or ↓, →
<ENTER> to accept
<EXIT> to return
    
```

Menu 7-21

#### Changing the characters

1. Push the cursor key ← or → to select the desired character. (menu 7-22)  
Or,  
Change that character by pushing the cursor keys ↑ or ↓. Numeric characters can be entered directly with numeric keys on the RCU.  
Or,  
Press **ENTER** to confirm.

The copy file is entered in the list of files.

2. Press **EXIT** to return to the Copy menu selection.

No changes are made.

```

COPY FILE

From file name:
xga_60.c02
To file name :
demo.c02

Select with ← or →
Reprogram with ↑ or ↓
<ENTER> to confirm
<EXIT> to return
    
```

Menu 7-22

### 7.3.12 Delete File

#### How to Use Delete File?

1. Push the cursor key ↑ or ↓ to highlight *Delete*. (menu 7-23)
2. Press **ENTER** to select.

The delete selection menu will be displayed. (menu 7-24)

3. Push the cursor key ↑ or ↓ to select a file name.
4. Press **ENTER** to select.

If [ALL] is selected, your password has to be entered before all files will be deleted.

A confirmation menu "Delete file name ?" is displayed. (menu 7-25)

5. Press **ENTER** to delete the file, press **EXIT** if you want to keep it.

**Note:** The active file cannot be deleted.

```

FILE SERVICE
LOAD
EDIT WARP1
EDIT WARP2
RENAME
COPY
DELETE
OPTIONS

Select with : or ↓
then <ENTER>
<EXIT> to return

```

Menu 7-23

```

DELETE FILE
Filename  Scr  resolution
xga_60.s01  1    1024x768
xga_60.c01  1    1024x768
xga_60.c02  1    1024x768
xga_60.c03  1    1024x768
-----
Active file : xga_60.c04

Select with : or ↓, →
<ENTER> to accept
<EXIT> to return

```

Menu 7-24

```

CONFIRM
DELETE FILE

Delete file :
xga_60.c02

Select with ← or →
Reprogram with : or ↓
<ENTER> to confirm
<EXIT> to return

```

Menu 7-25

### 7.3.13 File Options

#### How to Start Up File Options?

1. Push the cursor key ↑ or ↓ to highlight *Options*. (menu 7-26)
2. Press **ENTER** to select.

The option selection menu will be displayed.

```

FILE SERVICE
LOAD
EDIT WARP1
EDIT WARP2
RENAME
DELETE
OPTIONS

Select with : or ↓
then <ENTER>
<EXIT> to return

```

Menu 7-26

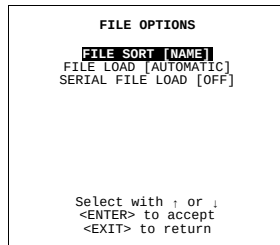
#### File Sort

1. Push the cursor key ↑ or ↓ to highlight *File Sort*. (menu 7-27)
2. Press **ENTER** to toggle between [NAME] or [INDEX].

## 7. Random Access

This File Sort setting is default set to [NAME].

|         |                                                             |
|---------|-------------------------------------------------------------|
| [NAME]  | The files in the list will be sorted on the file name.      |
| [INDEX] | The files in the list will be sorted on the file extension. |



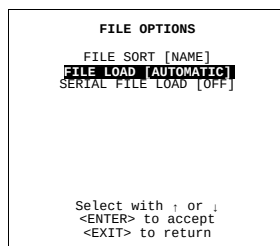
Menu 7-27

### File Load

1. Push the cursor key ↑ or ↓ to highlight *File Load*. (menu 7-28)
2. Press **ENTER** to toggle between [AUTOMATIC] or [MANUAL].

This File Load setting is default set to [AUTOMATIC].

|             |                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------|
| [AUTOMATIC] | The projector will automatically load the file that is best suited for the selected Input Slot. |
| [MANUAL]    | The user will select and load the desired file.                                                 |



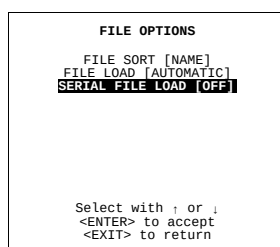
Menu 7-28

### Serial File Load

1. Push the cursor key ↑ or ↓ to highlight *Serial File Load*. (menu 7-29)
2. Press **ENTER** to toggle between [OFF] or [ON].

This Serial File Load setting is default set to [OFF].

|       |                                                                                                                                         |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------|
| [OFF] | The Serial File Load command is set to off.                                                                                             |
| [ON]  | The projector is forced to load a file through RS232, all other means to load a file are disabled until Serial File Load is set to off. |



Menu 7-29

## 7.4 Picture Tuning

### Overview

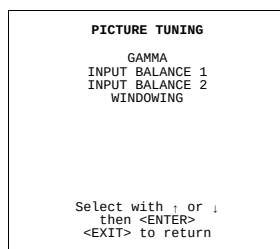
- Starting Up Picture Tuning
- Gamma
- Input Balance 1
- Input Balance 2
- Windowing

### 7.4.1 Starting Up Picture Tuning

#### How to Start Up Picture Tuning?

1. Push the cursor key ↑ or ↓ to highlight *Picture Tuning*.
2. Press **ENTER** to select.

The *Picture Tuning* menu will be displayed. (menu 7-30)



Menu 7-30

### 7.4.2 Gamma

#### What can be done?

With the gamma correction adjustment, it is possible to match the Gamma of the IG and the Projector.

#### How to Start Up Gamma?

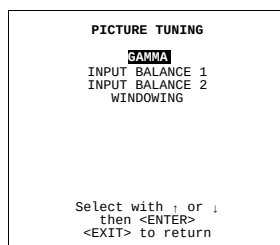
1. Push the cursor key ↑ or ↓ to highlight *Gamma*. (menu 7-31)
2. Press **ENTER** to select.

The Gamma barscale will be displayed.

3. Change the Gamma Value by pushing the cursor key ← or → until the desired value is reached.

**Note:** Default value of gamma : 1.9

4. Press **EXIT** to return to the *Picture Tuning* menu.



Menu 7-31

### 7.4.3 Input Balance 1

#### Why adjusting the Input Balance?

The input balance is normally correct adjusted in the factory. But due to signal distribution or signal transmission outputs a color imbalance can be the result. This imbalance can be adjusted source by source for color critical applications. These adjustments influence only the actual custom adjustment file. This procedure is not so easy and is best done or first demonstrated by an authorized Barco service technician.

## What can be done?

- When a Mono Image is projected, within this menu, it is possible to adjust the Input Balance of the actual projected source.
- When a Stereo Image is projected, within this menu, it is possible to adjust the Input Balance of the Left Image.

## Steps to be taken

To adjust the input balance, the following steps have to be executed in the following order:

1. The procedure is best done when using a source that can generate a full black and full white image.
2. Start with the Black Balance.
3. Continue with the White Balance.

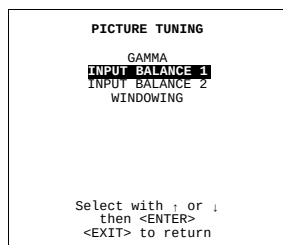


The default values are normally loaded with the factory preset when selecting a source. If the image is not as desired, continue with the next procedure.

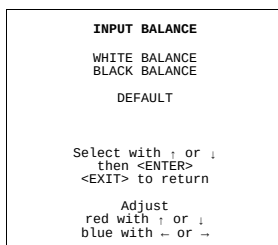
## How to Start Up Input Balance 1?

1. Push the cursor key ↑ or ↓ to highlight *Input Balance 1*. (menu 7-32)
2. Press **ENTER** to select.

The *Input Balance* menu will be displayed. (menu 7-33)



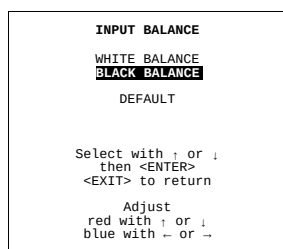
Menu 7-32



Menu 7-33

## How to adjust the Black Balance?

1. Generate a full black image on the source. (image 7-3)
2. Push the cursor key ↑ or ↓ to highlight *Black Balance* and press **ENTER** to select. (menu 7-34)
3. Use the cursor keys ← and ↓ to lower the Black Level of the Blue and Red color.
4. Use the **Brightness + or -** key to adjust the Black Level of the Green Color until there is ±50% noise visible. (image 7-4)
5. Use the → and ↑ key to raise the Black Level of the Blue and Red Color until there is ±50% noise visible.
6. Press **EXIT** to return to *Input Balance* menu.



Menu 7-34

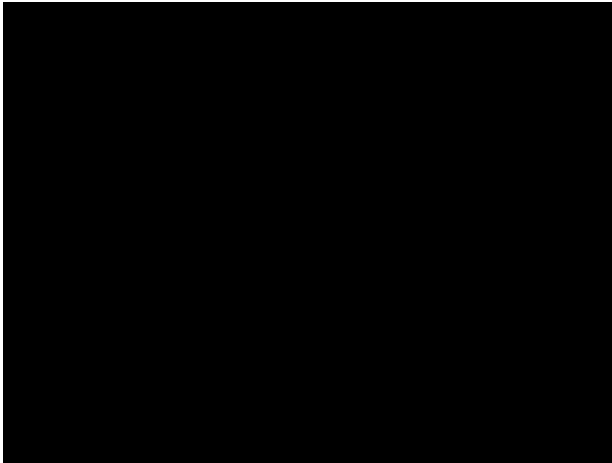


Image 7-3  
Full black image on the source

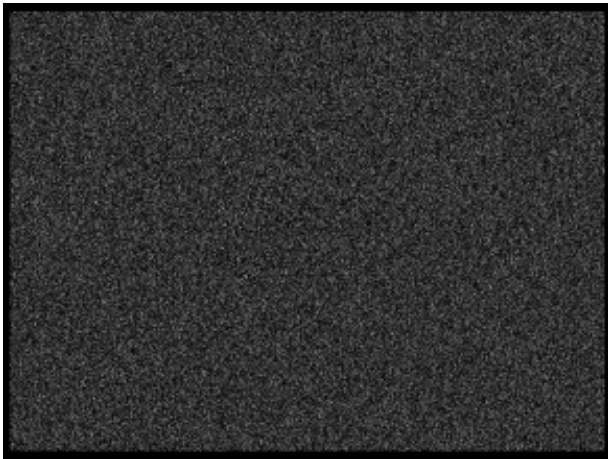
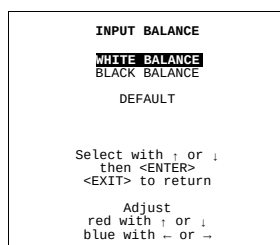


Image 7-4  
Perfect Black Balance

### How to adjust the White Balance?

1. Generate a full white image on the source. (image 7-5)
2. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *White Balance* and press **ENTER** to select. (menu 7-35)
3. Use the cursor keys  $\leftarrow$  and  $\rightarrow$  to lower the Gain of the Blue and Red color.
4. Use the **Contrast + or -** key to adjust the Gain of the Green Color until there is  $\pm 50\%$  noise visible. (image 7-6)
5. Use the  $\rightarrow$  and  $\uparrow$  key to raise the Gain of the Blue and Red Color until there is  $\pm 50\%$  noise visible.
6. Press **EXIT** to return to *Input Balance* menu.



Menu 7-35



Image 7-5  
Full white image on the source

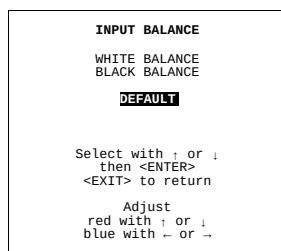


Image 7-6  
Perfect White Balance

### How to return to the Default Factory Preset?

1. Push the cursor key ↑ or ↓ to highlight *Default* and press **ENTER** to select. (menu 7-36)

The input balance is set to the default factory preset.



Menu 7-36

#### 7.4.4 Input Balance 2

##### What can be done?

When a Stereo Image is projected, within this menu, it is possible to adjust the Input Balance of the Right Image.



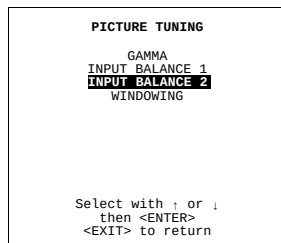
Follow the same steps as described above in 'Steps to be taken' see "Input Balance 1", page 69.

### How to Start Up Input Balance 2?

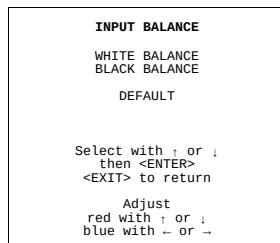
1. Push the cursor key ↑ or ↓ to highlight *Input Balance 2*. (menu 7-37)
2. Press **ENTER** to select.

The *Input Balance* menu will be displayed. (menu 7-38)

3. For more information on adjusting the White and Black Balance see "Input Balance 1", page 69.



Menu 7-37



Menu 7-38

## 7.4.5 Windowing

### Overview

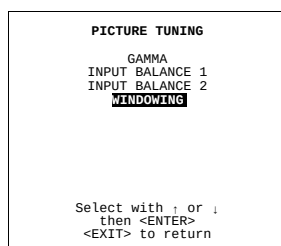
- Starting Up Windowing
- Blanking (Windowing)
- Shift (Windowing)
- Size (Windowing)
- Geo Soft Edge

### 7.4.5.1 Starting Up Windowing

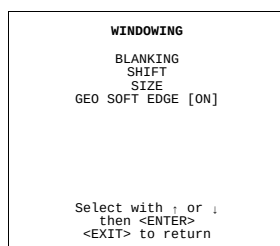
#### How to Start Up Windowing?

1. Push the cursor key ↑ or ↓ to highlight *Windowing*. (menu 7-39)

The *Windowing* menu will be displayed. (menu 7-40)



Menu 7-39



Menu 7-40

### 7.4.5.2 Blanking (Windowing)

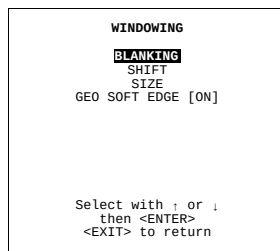
#### What can be done with Blanking (Windowing)?

With the Blanking function it is possible to black out the side(s) of the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

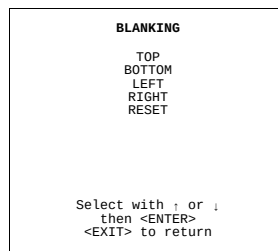
#### How to Start Up Windowing (Blanking)?

1. Push the cursor key ↑ or ↓ to highlight *Blanking*. (menu 7-41)
2. Press **ENTER** to select.

The *Blanking* menu will be displayed. (menu 7-42)



Menu 7-41



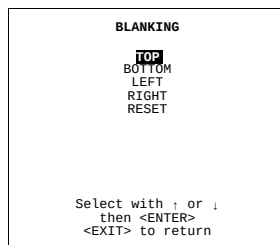
Menu 7-42

### How to use the Blanking (Windowing) adjustment?

1. Push the cursor key ↑ or ↓ to highlight the desired side e.g. Top. (menu 7-43)
2. Press **ENTER** to select.

A barscale indication will be displayed. (image 7-7)

3. Push the cursor keys to black out the side(s) of the image. (image 7-8)



Menu 7-43

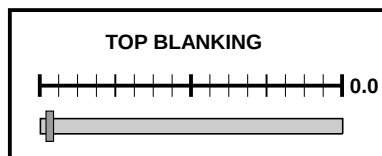


Image 7-7  
Top Blanking barscale

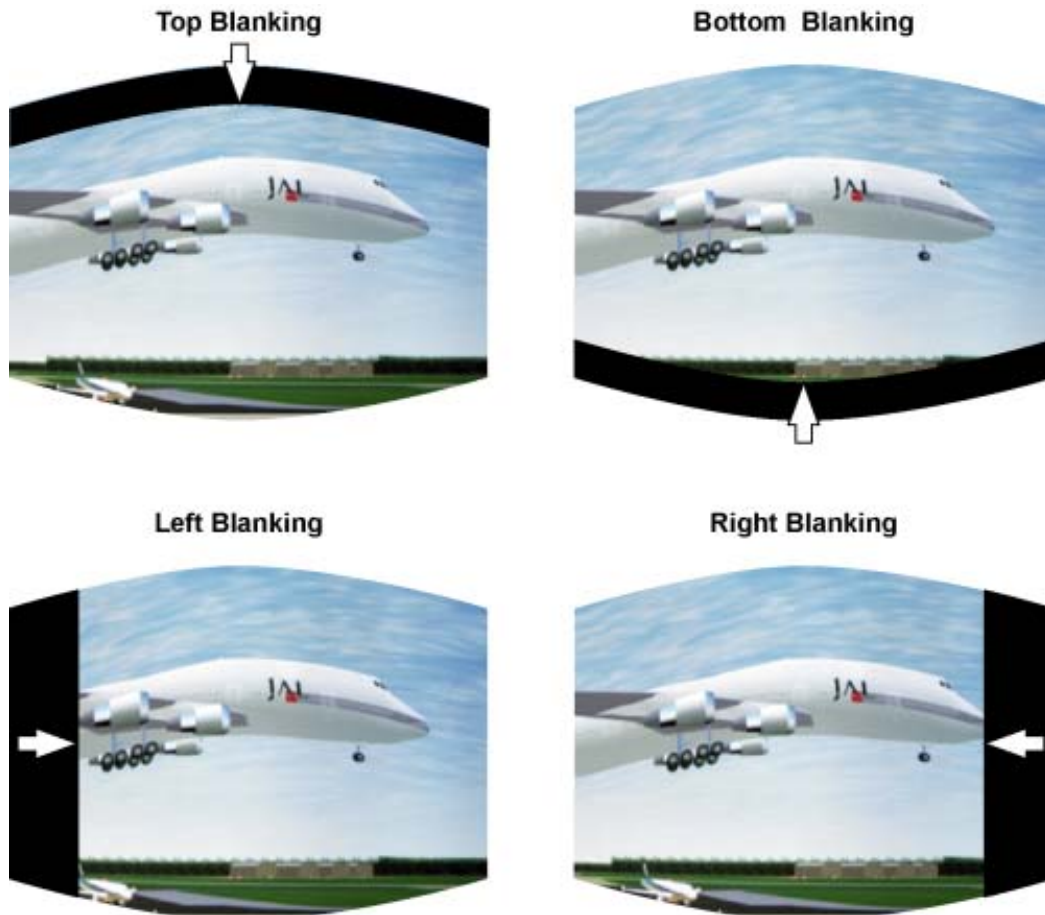
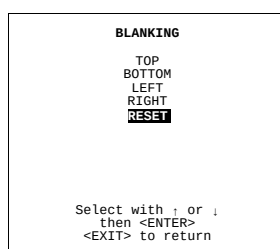


Image 7-8  
Blanking (Windowing) adjustment

### How to reset the Blanking adjustment(s)?

1. Push the cursor key ↑ or ↓ to highlight **Reset**. (menu 7-44)
2. Press **ENTER** to reset all blanking adjustments.



Menu 7-44

### 7.4.5.3 Shift (Windowing)

#### What can be done with Shift (Windowing)?

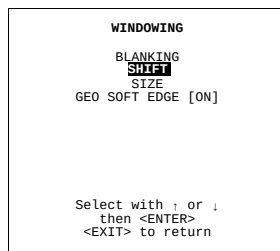
With the Shift function it is possible to shift the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

#### How to Start Up the Shift adjustment?

1. Push the cursor key ↑ or ↓ to highlight **Shift**. (menu 7-45)
2. Press **ENTER** to select.  
A barscale indication will be displayed. (image 7-9)
3. Push the cursor key ← or → to shift the image horizontally. (image 7-10)

## 7. Random Access

4. Push the cursor key  $\uparrow$  or  $\downarrow$  to shift the image vertically. (image 7-11)



Menu 7-45

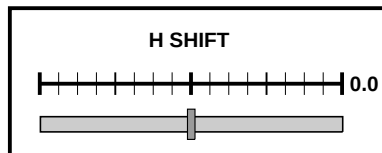


Image 7-9  
Horizontal Shift barscale



Image 7-10  
Horizontal Shift (Windowing) adjustment

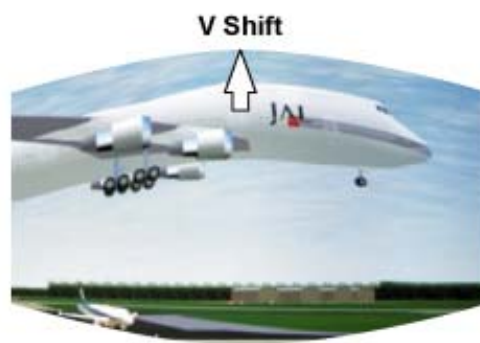


Image 7-11  
Vertical Shift (Windowing) adjustment

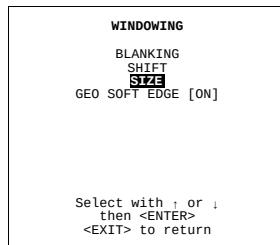
### 7.4.5.4 Size (Windowing)

#### What can be done with Size (Windowing)?

With the Size function it is possible to adjust the size of the image while keeping the pre-distorted WARP 6™ geometry settings of the image.

### How to Start Up the Size adjustment?

1. Push the cursor key ↑ or ↓ to highlight **Size**. (menu 7-46)
2. Press **ENTER** to select.  
A barscale indication will be displayed. (image 7-12)
3. Push the cursor key ← or → to adjust the horizontal size of the image. (image 7-13)
4. Push the cursor key ↑ or ↓ to adjust the vertical size of the image. (image 7-14)



Menu 7-46

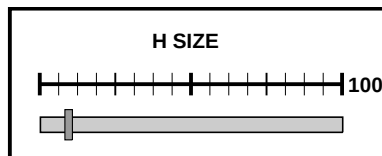


Image 7-12  
H Size barscale indication

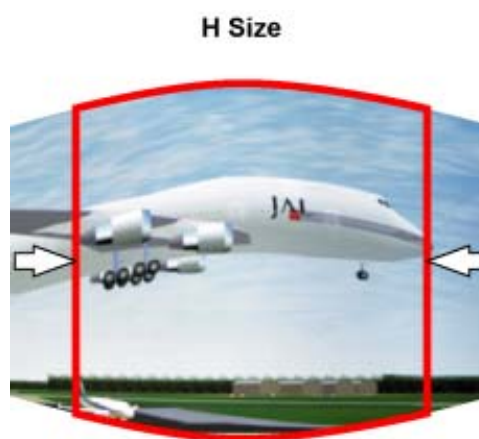


Image 7-13  
Horizontal Size adjustment

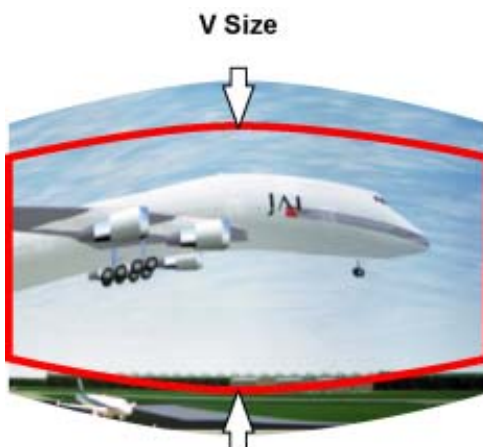


Image 7-14  
Vertical Size adjustment

#### 7.4.5.5 Geo Soft Edge

##### What can be done with Geo Soft Edge?

When setting up a soft edge (see Electronic Soft Edge), these settings are applied on all sources (source files). With the Geo Soft Edge toggle it is possible to disable the soft edge settings.

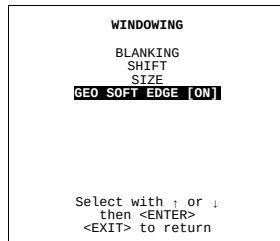


**Geo Soft Edge is default set to On.**

---

### How to change the Geo Soft Edge Setting?

1. Push the cursor key ↑ or ↓ to highlight *Geo Soft Edge*. (menu 7-47)
2. Press **ENTER** to toggle *Geo Soft Edge* [OFF] or [ON].



Menu 7-47

## 7.5 Geometry

---

### Overview

- Introduction
- Starting Up Geometry
- Geometry file annotation
- Setting up a new Geometry file
- Possible Geometry file manipulations
- Load
- Edit
- Rename
- Copy
- Delete

### 7.5.1 Introduction

#### What can be done with the Warp 6™ Geometry adjustments ?

With the new Warp 6™, fixed-matrix projectors can be used in a wide variety of curved-screen applications, ranging from straight-forward cylindrical displays to the wildest shapes that can be imagined: by pre-distorting the image inside the projector, a correct geometry can be achieved on curved screens, without requiring additional computational power on the IG's side. Since Warp 6™ is integrated in the Pixel Map Processor, it is an elegant and user-friendly solution for even the most demanding applications.

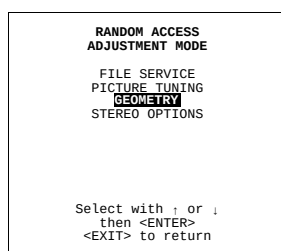
Using the intuitive user interface, bows can be set up and modified in a flash, giving the user real-time access to the distortion characteristics. For fine-tuning the image, the user has to access to individual grid points that can be shifted to their desired location.

### 7.5.2 Starting Up Geometry

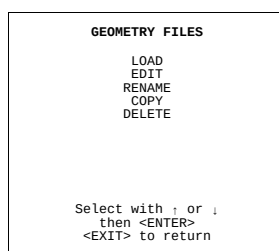
#### How to Start Up Geometry?

1. Push the cursor key ↑ or ↓ to highlight *Geometry*. (menu 7-48)
2. Press **ENTER** to select.

The *Geometry files* menu will be displayed. (menu 7-49)



Menu 7-48



Menu 7-49

### 7.5.3 Geometry file annotation

#### How is a Geometry file built up ?

The file notation in the *Geometry files* menu is built up in different parts. Let us have a look to these parts.

Take the following notation : xxxxxxxx.eee

|         |                                                                                                                                                                                                                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xxxxxxx | base name, 8 characters                                                                                                                                                                                                              |
| eee     | file extension:<br>first character t : geometry preset file.<br>first character g : geometry user file.<br>The second and third character is used for a following number (= file index). The file index for custom files : 00 to 63. |

Table 7-9

### 7.5.4 Setting up a new Geometry file

#### How to set up a new Geometry file ?

1. Load the start up file: *t\_nodist.t01*.
2. Select the *EDIT* menu and perform the necessary adjustments.
3. When leaving the *EDIT* menu a new geometry user file is automatically saved.

### 7.5.5 Possible Geometry file manipulations

#### What are the possible file manipulations ?

The following file manipulations are possible :

- Load : setting up a new geometry set up.
- Edit : editing a geometry file, when leaving the *EDIT* menu a geometry user file is automatically saved.
- Rename : renaming a geometry file.
- Copy : copying a geometry file.
- Delete : deleting a geometry file

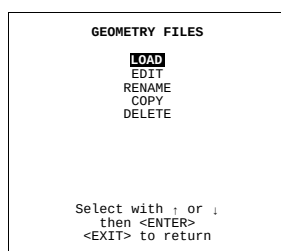
### 7.5.6 Load

#### How to start up ?

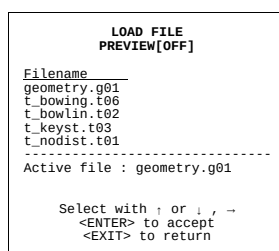
To start up the *Load File* menu, handle as follow :

1. Push the cursor key ↑ or ↓ to highlight *Load*. (menu 7-50)
2. Press **ENTER** to select.

The *Load File* menu will be displayed. (menu 7-51)



Menu 7-50



Menu 7-51

### How to change the Preview setting ?

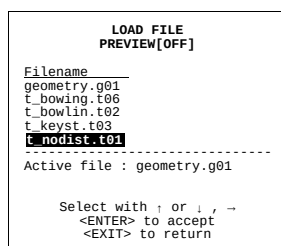
1. Push the cursor key → to highlight *Preview*.
2. Press **ENTER** to toggle the *Preview* mode [OFF] [ON].

|     |                                                                                                                                                                                                    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OFF | When highlighting a geometry file from the list, the geometry adjustments will be applied only when selecting a file by pressing the ENTER key.                                                    |
| ON  | The geometry adjustments are already applied when highlighting a file from the list, this will require some processing time from the projector when scrolling through the list of available files. |

### How to Load a file ?

1. When starting a new set up ?  
If yes, Push the ↓ key to highlight the “*t\_nodist.t01*” filestep 2 (menu 7-52)  
If no, When editing an existing set up push the ↑ or ↓ to highlight the corresponding user file .
2. Press **ENTER** to select.

The selected geometry file will become the active file and the *Geometry files* menu will be displayed again.



Menu 7-52

## 7.5.7 Edit

### Overview

- Introduction
- Start up
- Coarse
- Linearity adjustment
- Fine
- Shift
- Transport Delay
- Blanking
- Electronic Soft Edge
- Reset

### 7.5.7.1 Introduction

#### How does it work ?

- The projected image on the screen is divided in 81 zones. Each zone represents a grid point that can be shifted to the desired location. These grid points will interact with each other in a hierarchic way, adjusting a grid point on a certain hierarchic level will affect all grid points underneath.

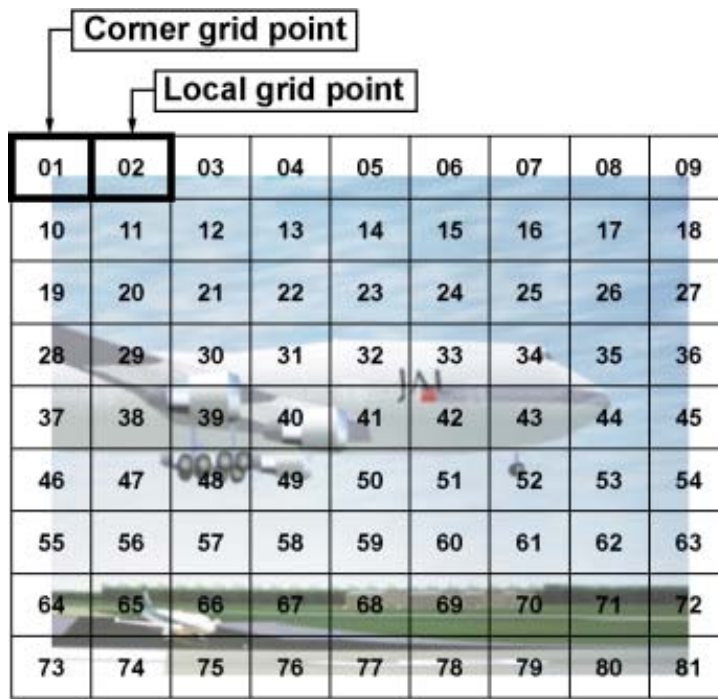


Image 7-15  
81 grid points

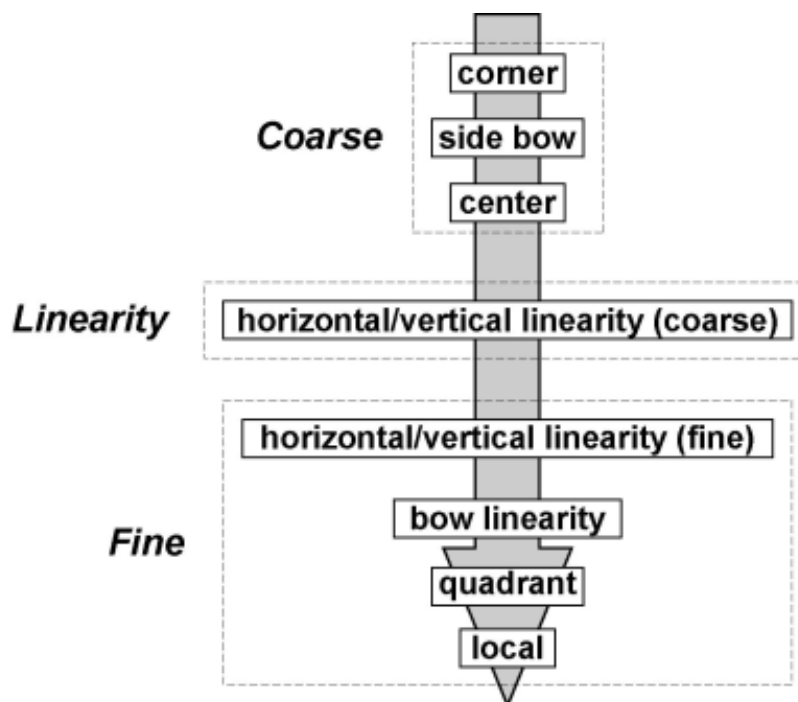


Image 7-16  
Hierarchic editing structure

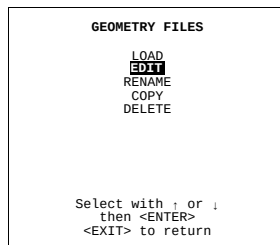
- On top of this hierarchy are the corner grid points, when adjusting these grid points all other points underneath will be adjusted.
- At the bottom of the structure we find the local points, adjusting these points will not affect any other grid points.
- The best results are obtained by applying the geometry settings in the same top to bottom order as listed in the menu interface.

### 7.5.7.2 Start up

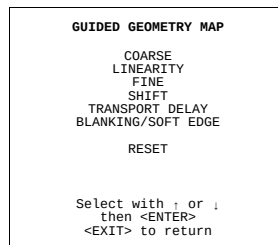
#### How to Start up the Edit mode ?

1. Push the cursor key ↑ or ↓ to highlight *Edit* in the *Geometry Files* menu. (menu 7-53)
2. Press **ENTER** to select.

The *Guided Geometry Map* menu will be displayed. (menu 7-54)



Menu 7-53



Menu 7-54

### 7.5.7.3 Coarse

#### Overview

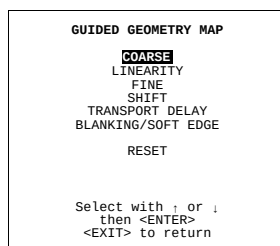
- Start up
- Corner selection
- Corner adjustment
- Side Bow selection
- Bow shaped pre-distortion set up
- Coarse linearity adjustment using Side Bows
- Center selection
- Center adjustment

#### 7.5.7.3.1 Start up

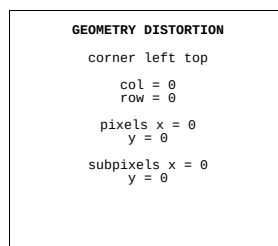
##### How to Start up the Coarse adjustment ?

1. Push the cursor key ↑ or ↓ to highlight *Coarse* in the *Guided Geometry Map* menu. (menu 7-55)
2. Press **ENTER** to select.

The *Geometry Distortion* menu will be displayed. (menu 7-56)



Menu 7-55



Menu 7-56

#### 7.5.7.3.2 Corner selection

##### What can be done ?

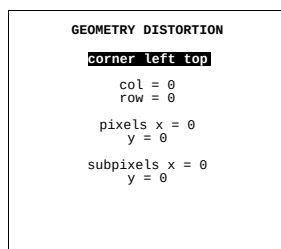
With the Coarse Corner selection it is possible to adjust the basic geometry and size of the projected image.

##### How to select the Corners ?

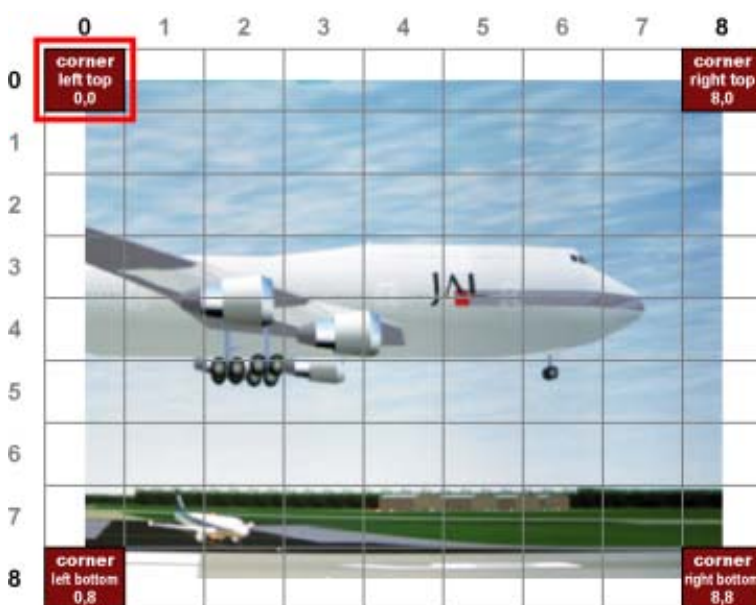
1. Push the cursor key ↑ or ↓ to highlight the Coarse selection. (menu 7-57)
2. By default *corner* is already selected, if not, press **ENTER** until *corner* is displayed.

3. Push the cursor key ← or → to select the desired Corner.

The COL & ROW (Column and Rows) indicator<sup>2</sup> will show the corresponding position of the selected Corner and an indication box will be displayed on the screen. (image 7-17)



Menu 7-57

Image 7-17  
Coarse Corner selections

### 7.5.7.3.3 Corner adjustment



To change a setting, only the method using the arrow keys is mentioned in the following procedures, the projector will need to recalculate every adjustment step.

For coarse adjustments it is also possible to enter the new value directly with the numeric keys on the RCU or local keypad.

#### What is Pixel and Subpixel adjustment ?

|          |                                                                                |
|----------|--------------------------------------------------------------------------------|
| Pixel    | Coarse adjustment, this will shift the Corner in steps of 1 pixel              |
| Subpixel | Fine tuning adjustment, this will shift the Corner in steps of 1/32 of a pixel |

#### How to adjust the Corners ?

1. Push the cursor key ↑ or ↓ to select *pixel x = 0* in the *Geometry Distortion* menu. (menu 7-58)
2. Push the cursor key ← or → to coarse shift the selected Corner in a horizontal way. (image 7-18)
3. Push the cursor key ↑ or ↓ to select *pixel y = 0* in the *Geometry Distortion* menu. (menu 7-59)

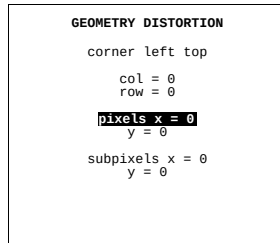
<sup>2</sup>. This COL & ROW indicates the position of the selected grid point within the 81 zones.

## 7. Random Access

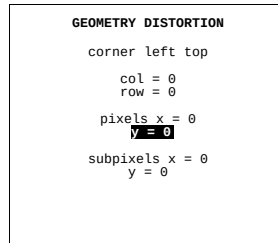
4. Push the cursor key ← or → to coarse shift the selected Corner in a vertical way (Follow this procedure in a similar way to adjust any desired corner position). (image 7-19)

**Note:** Apply this procedure to perform a keystone correction: this is used to align the image if the projector is mounted at a non standard projector angle. (image 7-20)

5. Use the subpixel adjustments to fine shift the selected corners.
6. Continue with the Coarse Side Bow adjustment or press **EXIT** to return to the *Guided Geometry Map* menu.



Menu 7-58



Menu 7-59



Image 7-18  
Corner pixel x adjustment



Image 7-19  
Corner pixel y adjustment

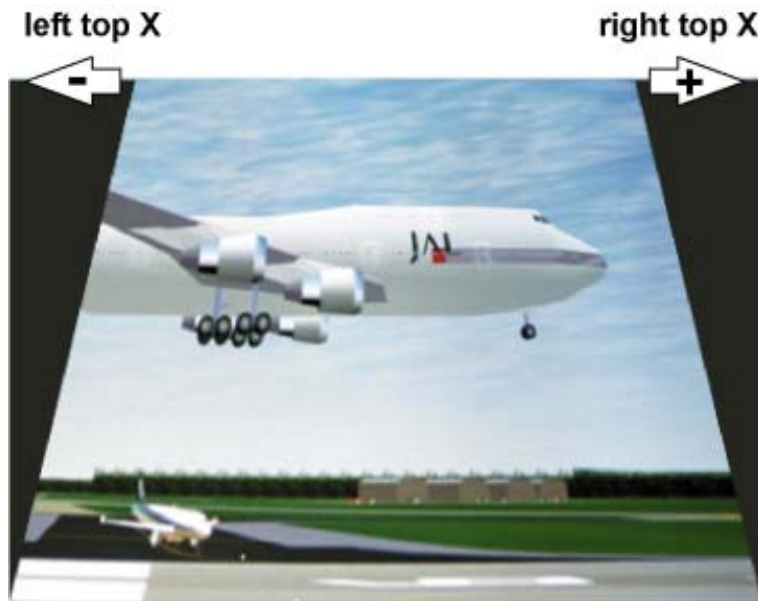


Image 7-20  
Keystone correction

#### 7.5.7.3.4 Side Bow selection

##### What can be done ?

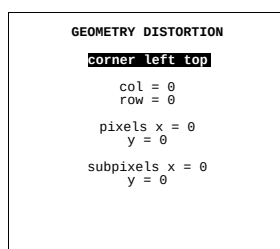
With the Coarse Side Bow selection it is possible to:

- apply a bow shaped pre-distortion on the projected image.
- perform a coarse linearity adjustment off the projected image.

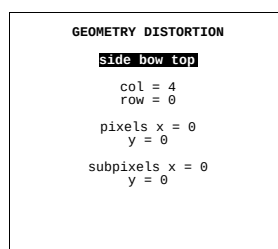
##### How to select the Side Bows ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight the Coarse selection. (menu 7-60)
2. Press **ENTER** to scroll through the available Coarse selections until *side bow* is displayed. (menu 7-61)
3. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to select the desired Side Bow.

The COL & ROW (Column and Rows) indicator will show the corresponding position of the selected Side Bow and an indication box will be displayed on the screen. (image 7-21)



Menu 7-60



Menu 7-61

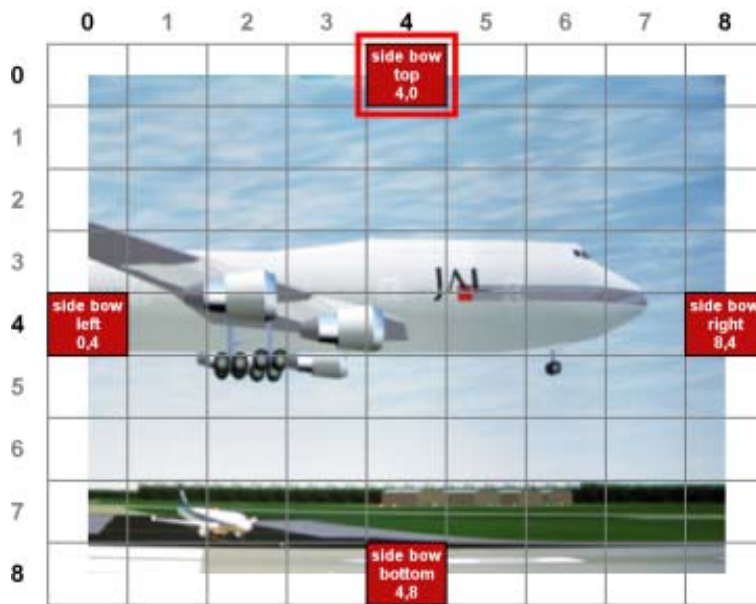


Image 7-21  
Coarse Side Bow selections

### 7.5.7.3.5 Bow shaped pre-distortion set up

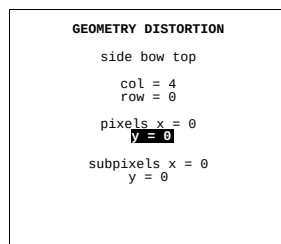
#### How to set up a bow shaped pre-distortion ?

We assume *side bow top* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *pixel y = 0* in the *Geometry Distortion* menu. (menu 7-62)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to coarse shift the selected Side Bow in a vertical way.

This will result in a bow shaped pre-distorted image (Follow this procedure in a similar way to apply the desired bow shaped distortion). (image 7-22)

3. Use the subpixel adjustments to fine shift the selected side bow.
4. Continue with the Coarse Side Bow or Center adjustment or press **EXIT** to return to the *Guided Geometry Map* menu.



Menu 7-62

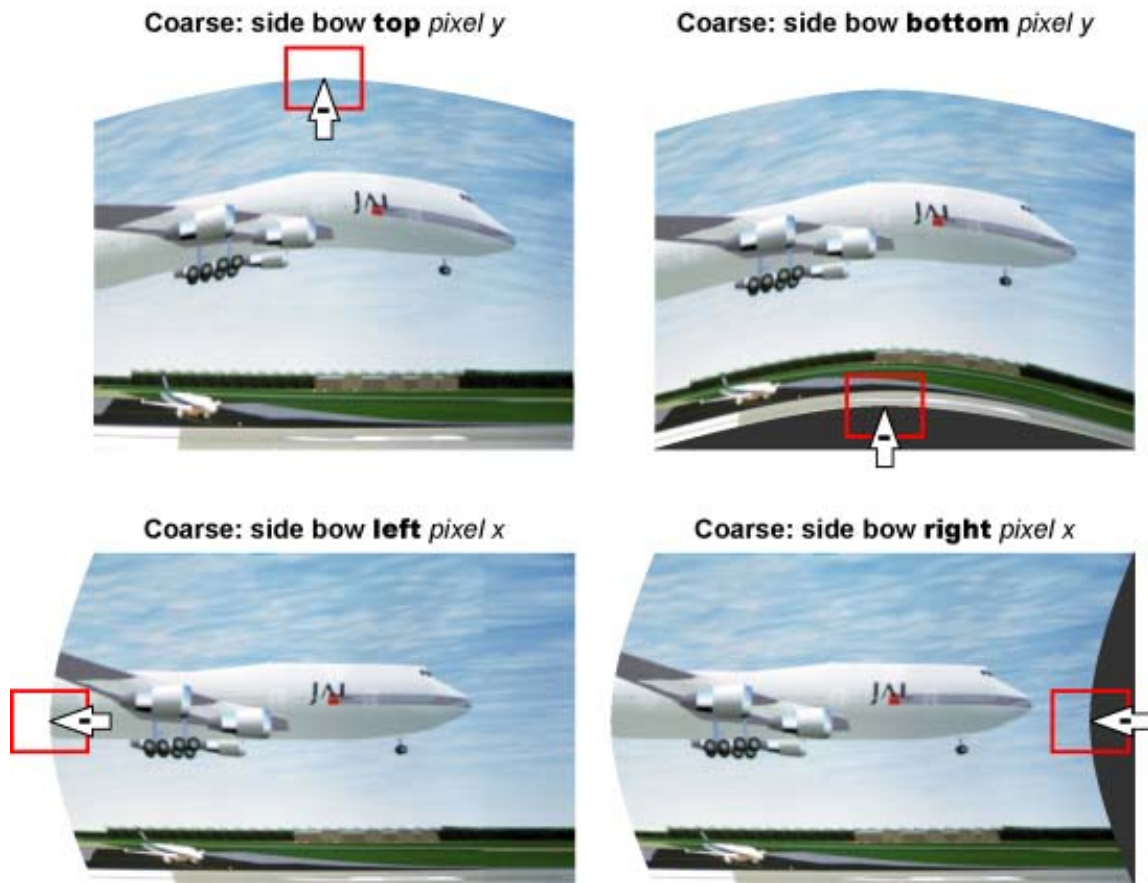


Image 7-22  
Bow shaped pre-distortions

#### 7.5.7.3.6 Coarse linearity adjustment using Side Bows



The Linearity adjustment is best done when a reference test pattern is projected on the screen.



By pressing the \* key on the RCU an internal hatch pattern is projected instead of the image data.

#### How to perform a coarse linearity adjustment by using the Side Bows?

We assume *side bow top* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *pixel x = 0* in the *Geometry Distortion* menu. (menu 7-63)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to coarse shift the selected Side Bow in a horizontal way.
3. Repeat step 1 to 2 for the Coarse *side bow bottom* selection.

This will shift the vertical center line, resulting in a coarse horizontal linearity adjustment (Follow this procedure in a similar way to shift the horizontal center line). (image 7-23)

4. Use the subpixel adjustments to fine shift the selected Side Bows.

5. Continue with the Coarse Center adjustment or press **EXIT** to return to the *Guided Geometry Map* menu.

```
GEOMETRY DISTORTION
side bow top
col = 4
row = 0
pixels x = 0
y = 0
subpixels x = 0
y = 0
```

Menu 7-63

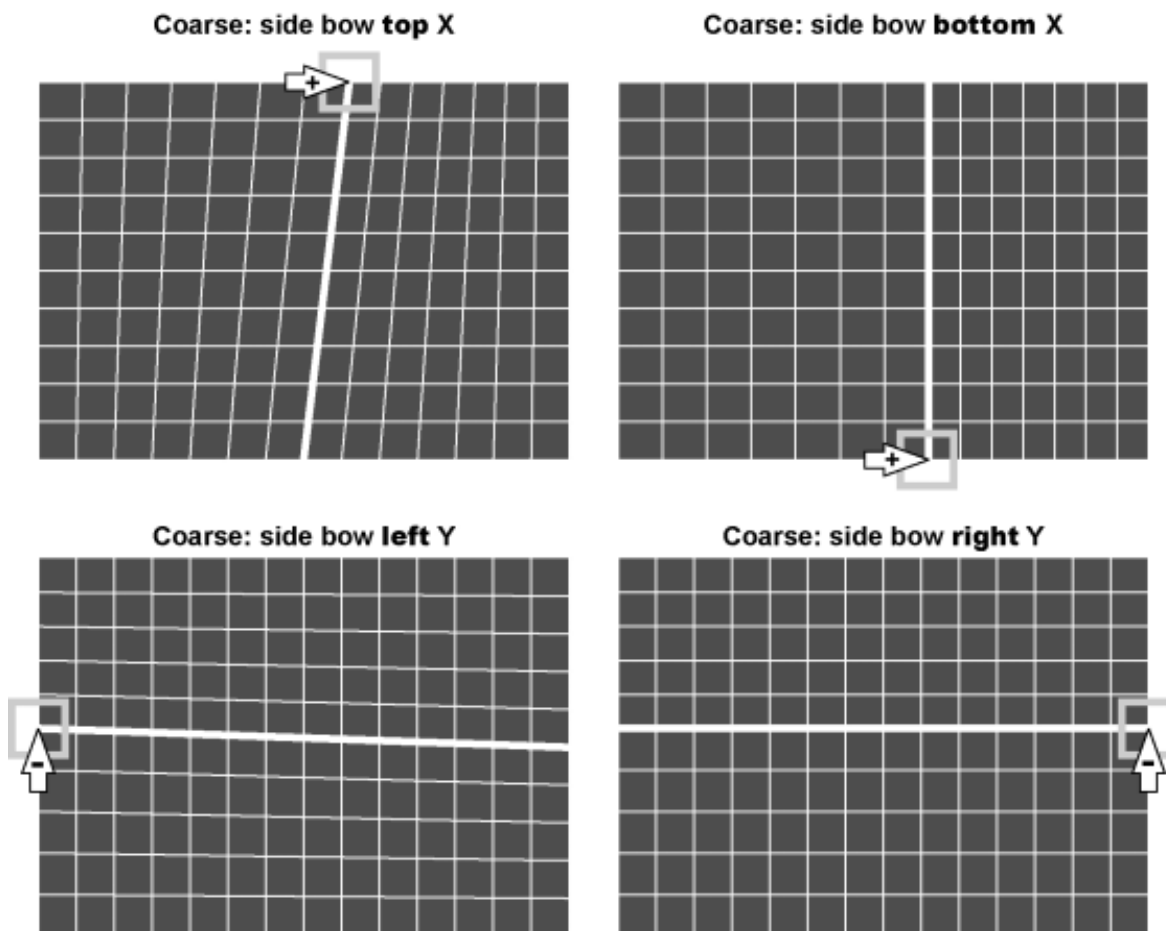


Image 7-23  
Using side bows to perform a coarse linearity adjustment

### 7.5.7.3.7 Center selection

#### What can be done ?

With the Coarse Center selection it is possible to perform a coarse bow correction on the projected image.

#### How to select the Center ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to to highlight the Coarse selection.

2. Press **ENTER** until *center* is displayed. (menu 7-64)

```

GEOMETRY DISTORTION

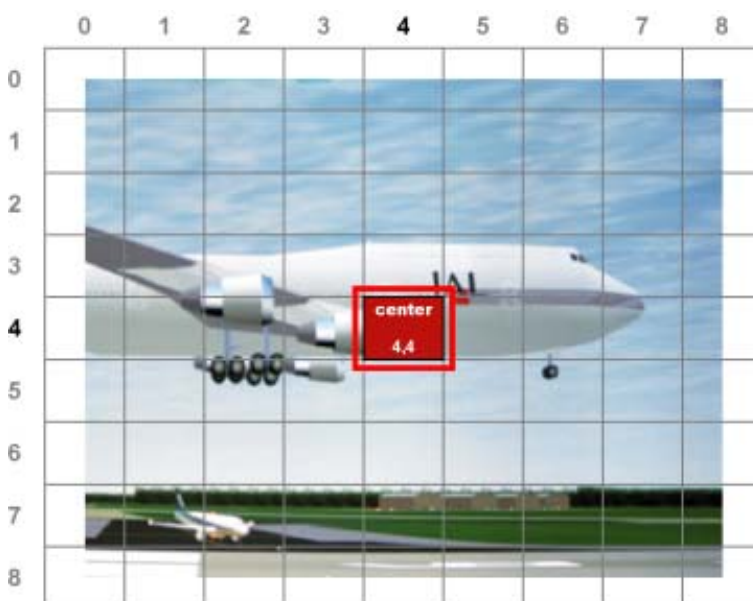
center
col = 4
row = 4

pixels x = 0
y = 0

subpixels x = 0
y = 0

```

Menu 7-64

Image 7-24  
Coarse Center selection

### 7.5.7.3.8 Center adjustment

#### How to adjust the Center ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *pixel x = 0* in the *Geometry Distortion* menu. (menu 7-65)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to coarse shift the Center in a horizontal way. (image 7-25)
3. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *pixel y = 0* in the *Geometry Distortion* menu. (menu 7-66)
4. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to coarse shift the Center in a vertical way. (image 7-26)
5. Use the subpixel adjustments to fine shift the Center.
6. When the Coarse adjustment is finished press **EXIT** to return to the *Guided Geometry Map* menu.

```

GEOMETRY DISTORTION

center
col = 4
row = 4

pixels x = 0
y = 0

subpixels x = 0
y = 0

```

Menu 7-65

```

GEOMETRY DISTORTION

center
col = 4
row = 4

pixels x = 0
y = 0

subpixels x = 0
y = 0

```

Menu 7-66

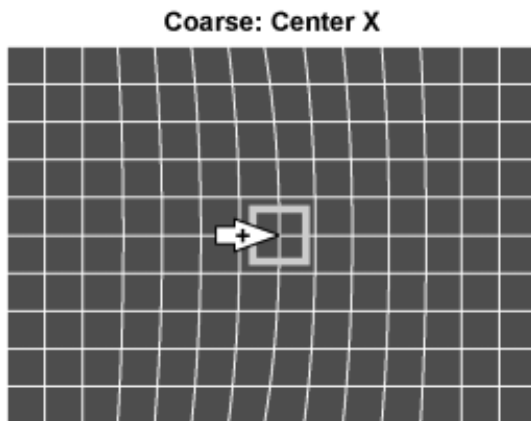


Image 7-25  
Center pixel x adjustment

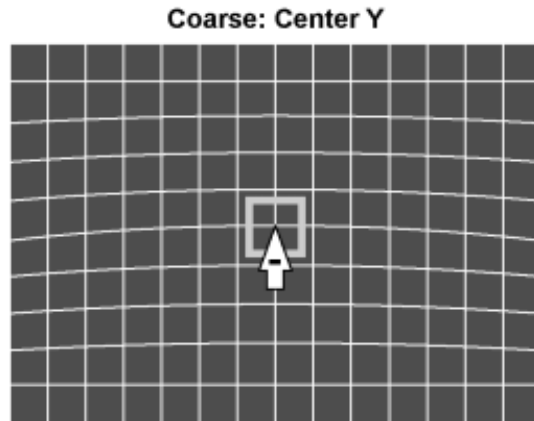


Image 7-26  
Center pixel y adjustment

### 7.5.7.4 Linearity adjustment

#### Overview

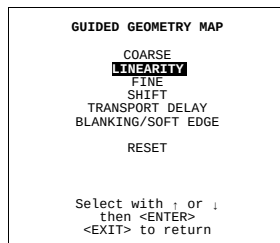
- Start up
- Horizontal or Vertical Linearity selection
- Horizontal Linearity adjustment
- Vertical Linearity adjustment

#### 7.5.7.4.1 Start up

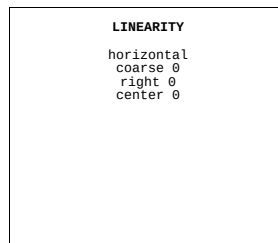
##### How to Start up the Linearity adjustment ?

1. Push the cursor key ↑ or ↓ to highlight *Linearity* in the *Guided Geometry Map* menu. (menu 7-67)
2. Press **ENTER** to select.

The *Linearity* menu will be displayed. (menu 7-68)



Menu 7-67



Menu 7-68

#### 7.5.7.4.2 Horizontal or Vertical Linearity selection

##### What can be done with the Linearity adjustment ?

Within this Linearity adjustment mode it is possible to perform a coarse correction of the horizontal and vertical nonlinearity.



The Linearity adjustment is best done when a hatch pattern is projected on the screen.



By pressing the \* key on the RCU an internal hatch pattern is projected instead of the image data.

### How to select the Horizontal or Vertical Linearity ?

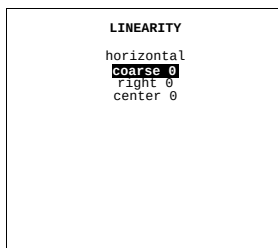
1. By default *horizontal* is selected.
2. Press **ENTER** to toggle between *horizontal* and *vertical*.

#### 7.5.7.4.3 Horizontal Linearity adjustment

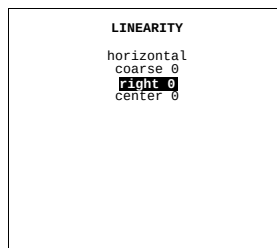
##### How to adjust the Horizontal Linearity ?

A correct Horizontal Linearity is achieved when the distances between the vertical lines of the hatch pattern are equal or almost equal from left to right.

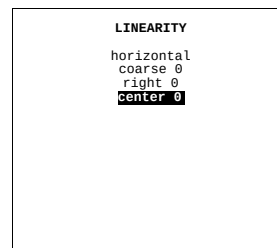
1. Is *Horizontal* Linearity selected ?  
If yes, go to step 2  
If no, Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Vertical* and press **ENTER** to toggle to *Horizontal*.
2. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *coarse*. (menu 7-69)
3. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to perform a coarse linearity correction of both sides of the image. (image 7-27)
4. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *right*. (menu 7-70)
5. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to correct the linearity of the right side of the image. (image 7-28)
6. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *center*. (menu 7-71)
7. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to correct the linearity of the center of the image. (image 7-29)
8. Continue with the vertical linearity adjustment.



Menu 7-69



Menu 7-70



Menu 7-71

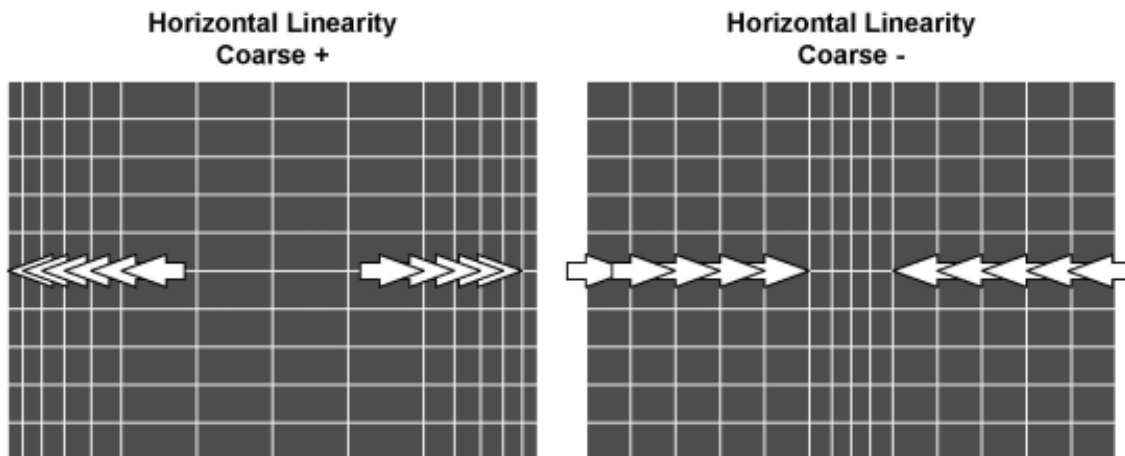
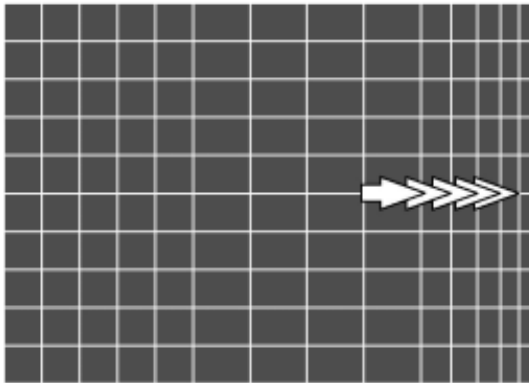


Image 7-27  
Horizontal Linearity coarse adjustment

**Horizontal Linearity  
Right +**



**Horizontal Linearity  
Right -**

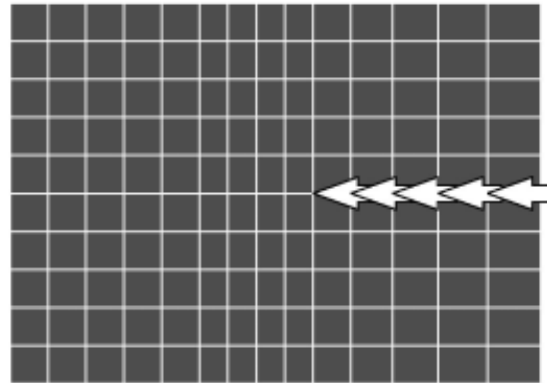
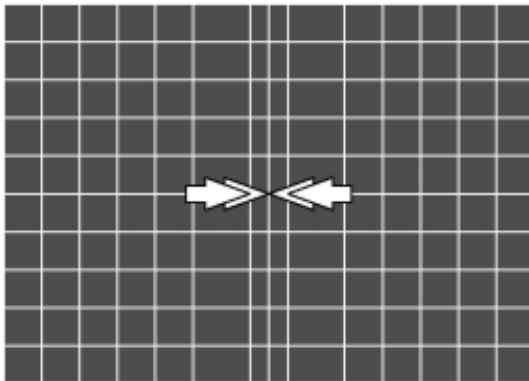


Image 7-28  
Horizontal Linearity right adjustment

**Horizontal Linearity  
Center +**



**Horizontal Linearity  
Center -**

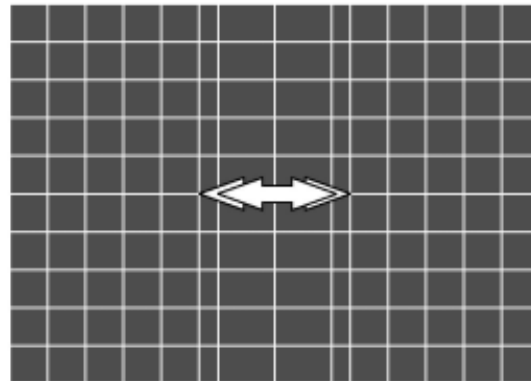


Image 7-29  
Horizontal Linearity center adjustment

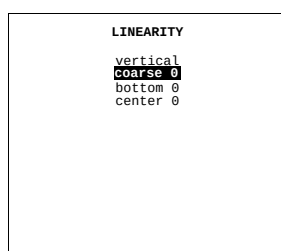
#### 7.5.7.4.4 Vertical Linearity adjustment

##### How to adjust the Vertical Linearity ?

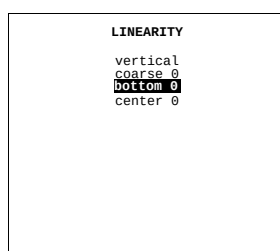
A correct Vertical Linearity is achieved when the distances between the horizontal lines of the hatch pattern are equal or almost equal from top to bottom.

1. Is *Vertical* Linearity selected ?  
If yes, go to step 2  
If no, Push the cursor key ↑ or ↓ to highlight *Horizontal* and press **ENTER** to toggle to *Vertical*.
2. Push the cursor key ↑ or ↓ to highlight *coarse*. (menu 7-72)
3. Push the cursor key ← or → to perform a coarse linearity correction of both sides of the image. (image 7-30)
4. Push the cursor key ↑ or ↓ to highlight *bottom*. (menu 7-73)
5. Push the cursor key ← or → to correct the linearity of the bottom side of the image. (image 7-31)
6. Push the cursor key ↑ or ↓ to highlight *center*. (menu 7-74)
7. Push the cursor key ← or → to correct the linearity of the center of the image. (image 7-32)

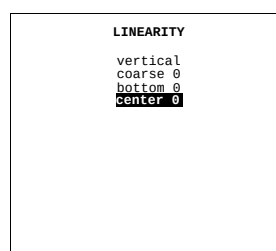
8. When finishing the Linearity adjustments, press **EXIT** to return to the *Guided Geometry Map* menu.



Menu 7-72



Menu 7-73



Menu 7-74

**Vertical Linearity  
Coarse +**

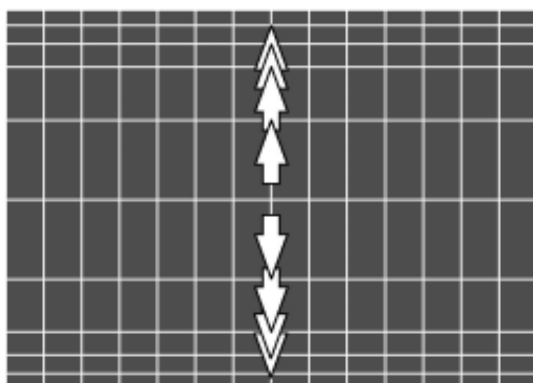
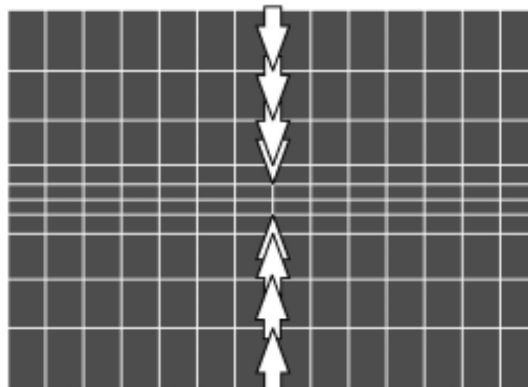


Image 7-30  
Vertical Linearity coarse adjustment

**Vertical Linearity  
Coarse -**



**Vertical Linearity  
Bottom +**

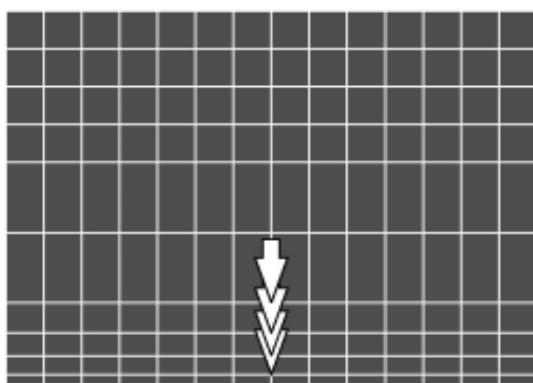
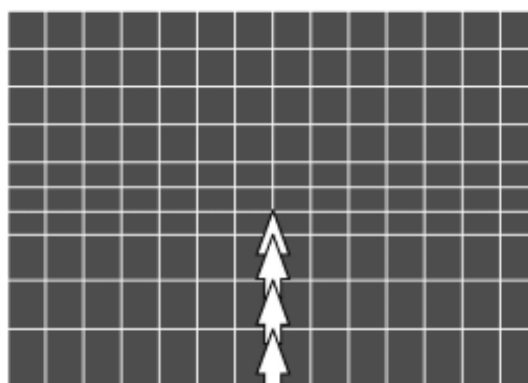


Image 7-31  
Vertical Linearity bottom adjustment

**Vertical Linearity  
Bottom -**



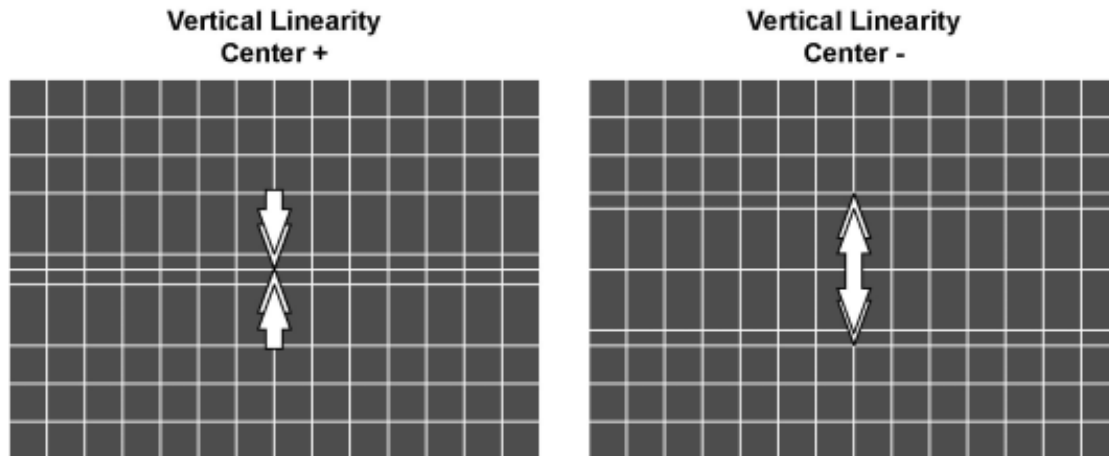


Image 7-32  
Vertical Linearity center adjustment

### 7.5.7.5 Fine

#### Overview

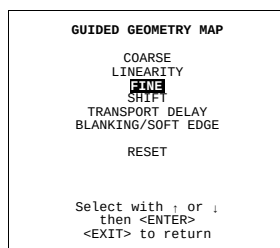
- Start up
- Horizontal or Vertical Linearity selection
- Fine Horizontal or Vertical Linearity adjustment
- Bow Linearity selection
- Bow Linearity adjustment
- Quadrant selection
- Quadrant adjustment
- Local selection
- Local adjustment

#### 7.5.7.5.1 Start up

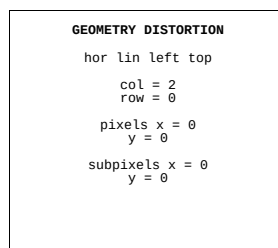
##### How to Start up the Fine adjustment ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Fine* in the *Edit* menu. (menu 7-75)
2. Press **ENTER** to select.

The *Geometry Distortion* menu will be displayed. (menu 7-76)



Menu 7-75



Menu 7-76

#### 7.5.7.5.2 Horizontal or Vertical Linearity selection

##### What can be done ?

Within this menu it is possible to fine tune the linearity of the projected image.



The Linearity adjustment is best done when a hatch pattern is projected on the screen.

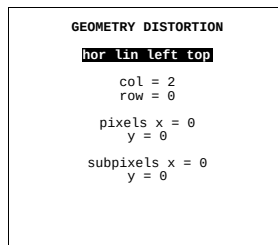


By pressing the \* key on the RCU an internal hatch pattern is projected instead of the image data.

### How to select the Horizontal or Vertical Linearity ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight the Fine selection. (menu 7-77)
2. By default *hor lin* is already selected, if not, press **ENTER** to scroll through the available Fine selections until *hor lin* or *ver lin* is displayed.
3. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to select the desired horizontal or vertical linearity point.

The COL & ROW indicator will show the corresponding position of the selected grid point and an indication box will show the selected grid point on the screen. (image 7-33)



Menu 7-77

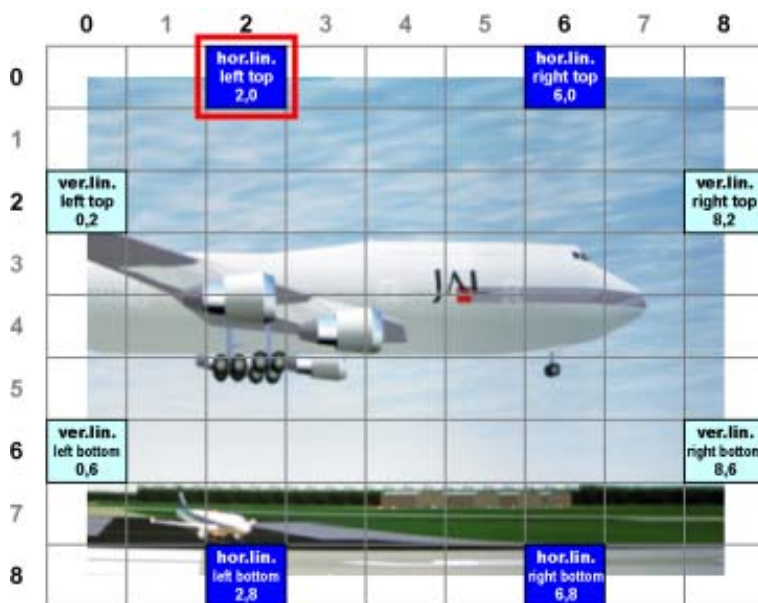


Image 7-33  
Fine horizontal or vertical linearity selections

#### 7.5.7.5.3 Fine Horizontal or Vertical Linearity adjustment

##### How to adjust the Fine Horizontal or Vertical Linearity ?

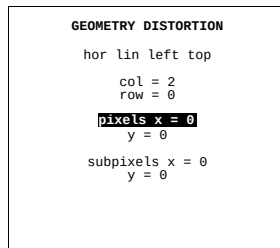
We assume *hor lin left top* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *pixel x = 0*. (menu 7-78)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to shift the selected grid point in a horizontal way.
3. Repeat step 1 to 2 for the Fine *hor lin left bottom* selection.

## 7. Random Access

This will result in a fine horizontal linearity adjustment (Follow this procedure in a similar way to perform a fine vertical linearity adjustment). (image 7-34)

4. Use the subpixel adjustments to fine shift the selected grid point.
5. Continue with the Fine Bow Linearity adjustment or press **EXIT** to return to the *Guided Geometry Map*.



Menu 7-78

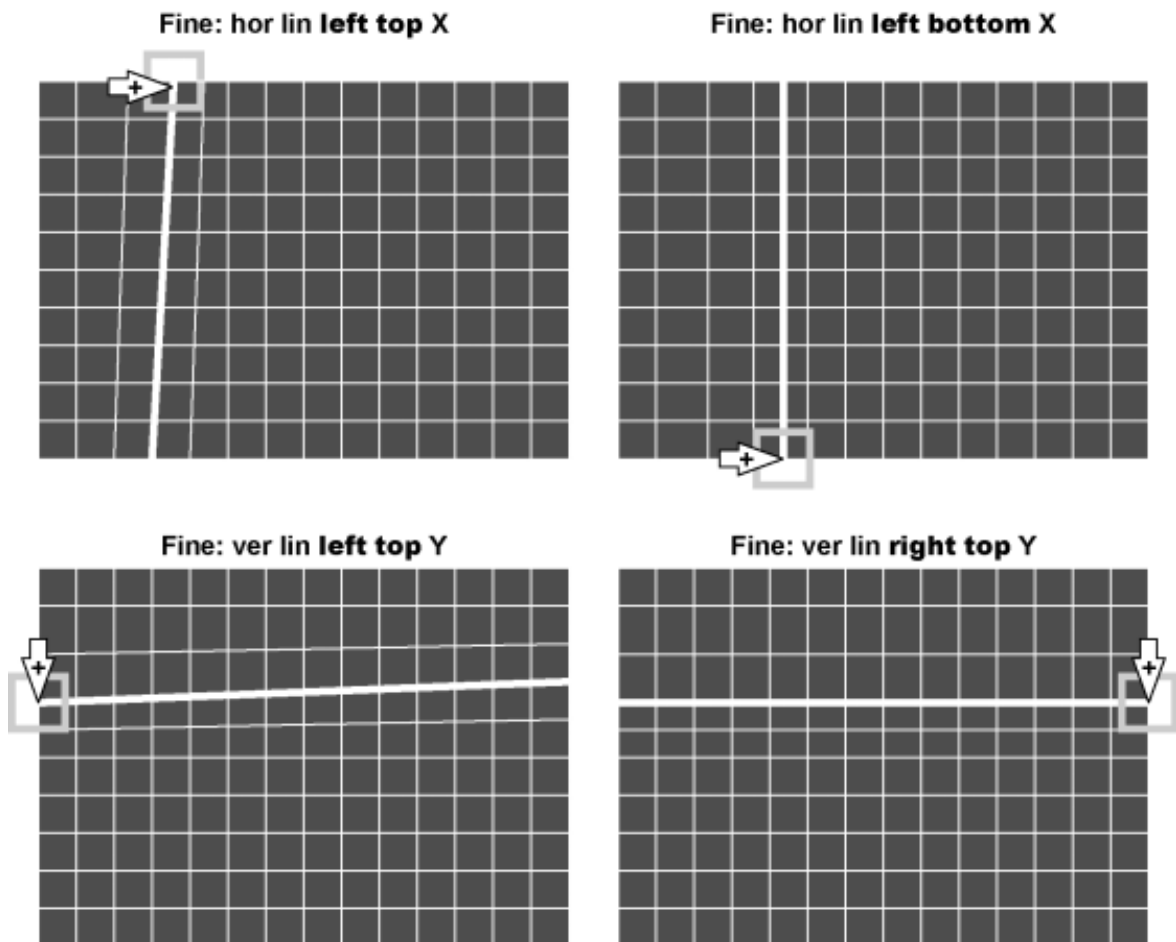


Image 7-34  
Fine horizontal or vertical linearity adjustment

### 7.5.7.5.4 Bow Linearity selection

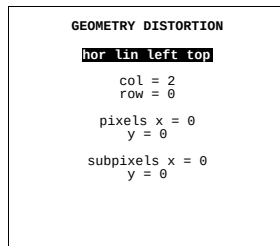
#### What can be done ?

Within this menu it is possible to perform a fine bow correction on the projected image.

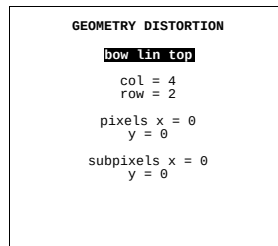
#### How to select the Bow Linearity ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight the Fine selection. (menu 7-79)
2. Press **ENTER** to scroll through the available Fine selections until *bow lin* is displayed. (menu 7-80)
3. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to select the desired bow linearity point.

The COL & ROW indicator will show the corresponding position of the selected grid point and an indication box will show the selected grid point on the screen. (image 7-35)



Menu 7-79



Menu 7-80

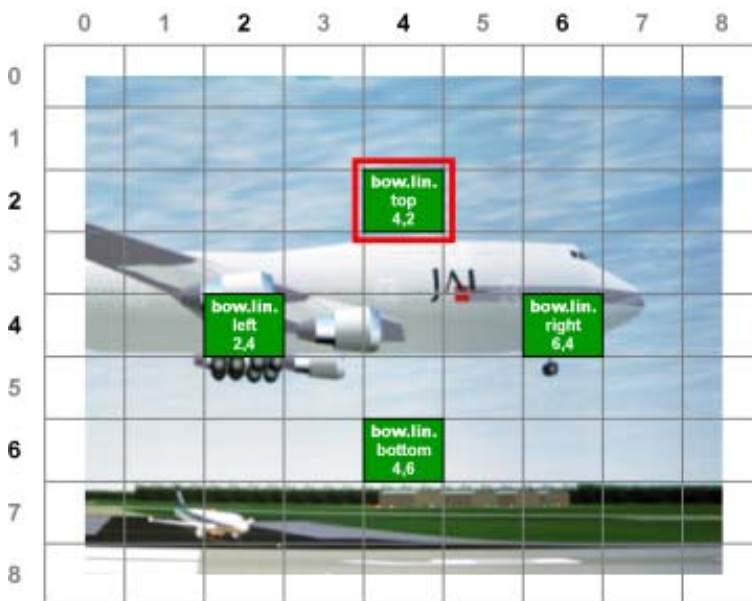


Image 7-35  
Fine bow linearity selections

#### 7.5.7.5.5 Bow Linearity adjustment

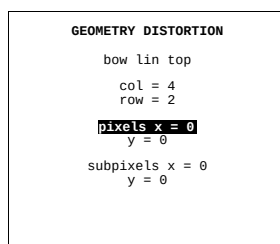
##### How to adjust the Bow Linearity ?

We assume *bow top* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *pixel y = 0*. (menu 7-81)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to shift the selected grid point in a vertical way.

This will result in a fine bow correction on the projected image (Follow this procedure in a similar way to apply a fine bow correction on any desired bow linearity selection). (image 7-36)

3. Use the subpixel adjustments to fine shift the selected grid point.
4. Continue with the Fine Quadrant adjustment or press **EXIT** to return to the *Guided Geometry Map*.



Menu 7-81

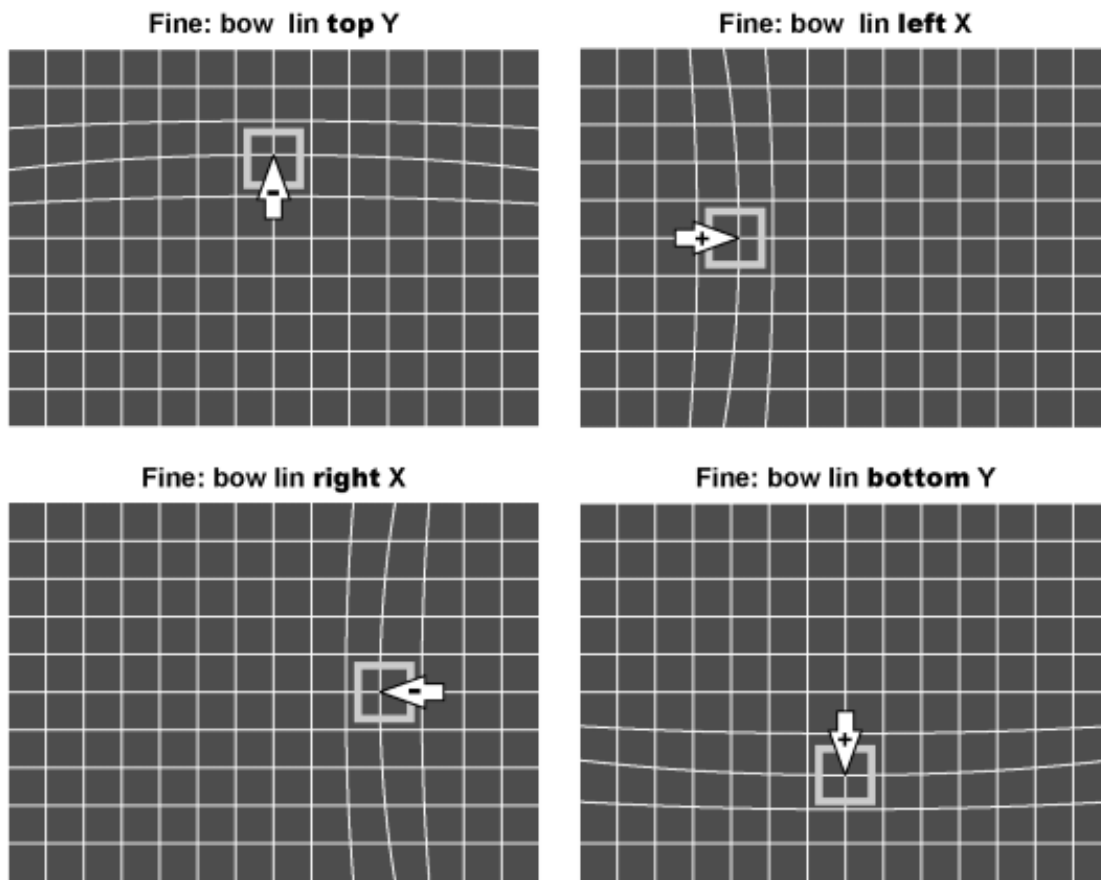


Image 7-36  
Fine bow linearity adjustments

#### 7.5.7.5.6 Quadrant selection

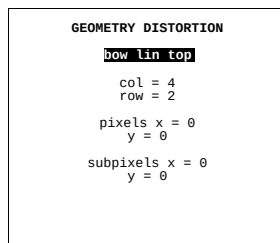
##### What can be done ?

Within this menu it is possible to perform a fine adjustment within a selected quadrant.

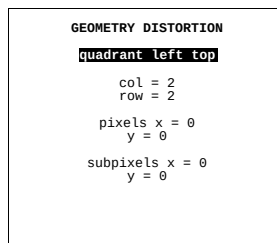
##### How to select the Quadrants ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight the Fine selection. (menu 7-82)
2. Press **ENTER** to scroll through the available Fine selections until *quadrant* is displayed. (menu 7-83)
3. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to select the desired quadrant point.

The COL & ROW indicator will show the corresponding position of the selected grid point and an indication box will show the selected grid point on the screen. (image 7-37)



Menu 7-82



Menu 7-83

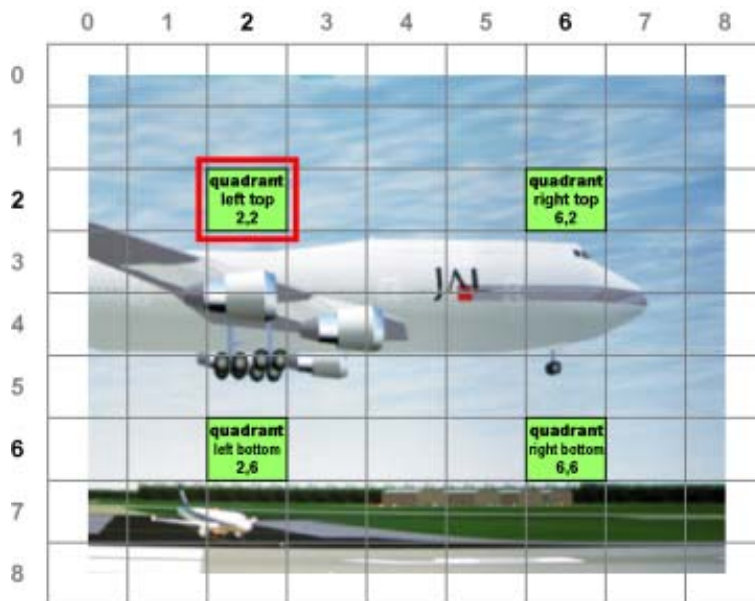


Image 7-37  
Fine quadrant selections

#### 7.5.7.5.7 Quadrant adjustment

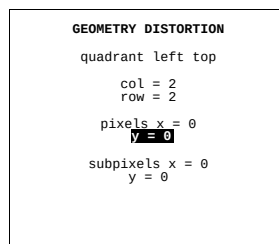
##### How to adjust Quadrants ?

We assume *quadrant top left* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *pixel Y = 0*. (menu 7-84)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to shift the selected grid point in a vertical way.

This will result in a fine adjustment within the selected quadrant (Follow this procedure in a similar way to apply a fine adjustment on any desired quadrant). (image 7-38)

3. Use the subpixel adjustments to fine shift the selected grid point.
4. Continue with the Fine Quadrant adjustment or press **EXIT** to return to the *Guided Geometry Map*.



Menu 7-84

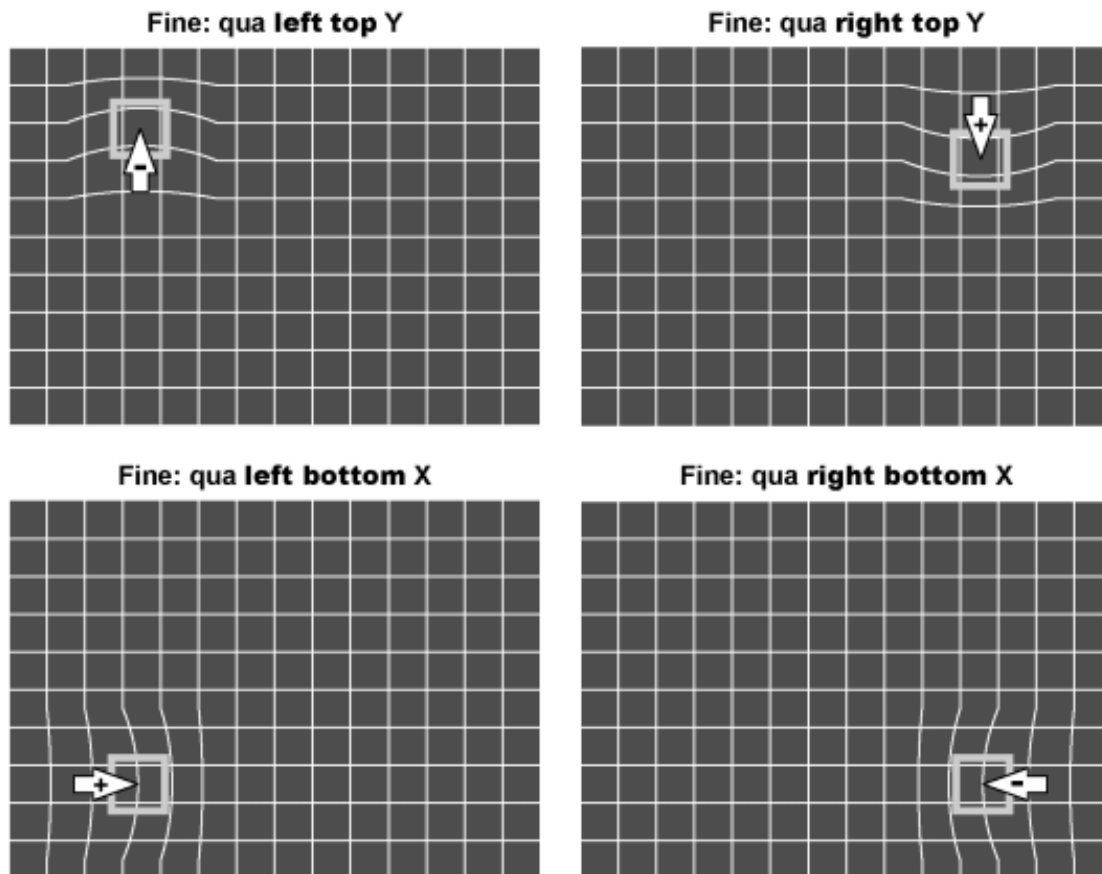


Image 7-38  
Fine quadrant adjustments

#### 7.5.7.5.8 Local selection

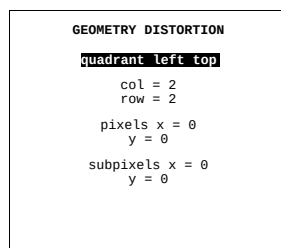
##### What can be done ?

Within this menu it is possible to smooth away bumps and irregularities within the selected local zone of the projected image.

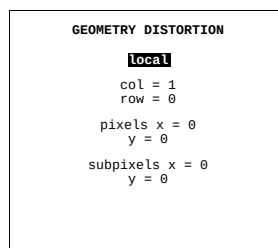
##### How to select the Local grid points ?

1. Push the cursor key ↑ or ↓ to highlight the Fine selection. (menu 7-85)
2. Press **ENTER** to scroll through the available Fine selections until *local* is displayed.  
See menu 7-86.
3. Push the cursor key ↑ or ↓ to select col. (menu 7-87)
4. Push the cursor key ← or → to scroll through all available local grid points within this row.

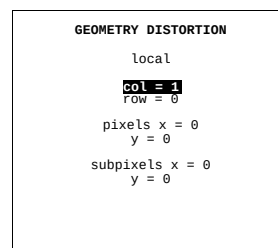
An indication box will show the selected local grid point on the screen (Follow this procedure in a similar way to select any desired local zone). (image 7-39)



Menu 7-85



Menu 7-86



Menu 7-87

|   | 0            | 1            | 2            | 3            | 4            | 5            | 6            | 7            | 8            |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 0 |              | local<br>1,0 |              | local<br>3,0 |              | local<br>5,0 |              | local<br>7,0 |              |
| 1 | local<br>0,1 | local<br>1,1 | local<br>2,1 | local<br>3,1 | local<br>4,1 | local<br>5,1 | local<br>6,1 | local<br>7,1 | local<br>8,1 |
| 2 |              | local<br>1,2 |              | local<br>3,2 |              | local<br>5,2 |              | local<br>7,2 |              |
| 3 | local<br>0,3 | local<br>1,3 | local<br>2,3 | local<br>3,3 | local<br>4,3 | local<br>5,3 | local<br>6,3 | local<br>7,3 | local<br>8,3 |
| 4 |              | local<br>1,4 |              | local<br>3,4 |              | local<br>5,4 |              | local<br>7,4 |              |
| 5 | local<br>0,5 | local<br>1,5 | local<br>2,5 | local<br>3,5 | local<br>4,5 | local<br>5,5 | local<br>6,5 | local<br>7,5 | local<br>8,5 |
| 6 |              | local<br>1,6 |              | local<br>3,6 |              | local<br>5,6 |              | local<br>7,6 |              |
| 7 | local<br>0,7 | local<br>1,7 | local<br>2,7 | local<br>3,7 | local<br>4,7 | local<br>5,7 | local<br>6,7 | local<br>7,7 | local<br>8,7 |
| 8 |              | local<br>1,8 |              | local<br>3,8 |              | local<br>5,8 |              | local<br>7,8 |              |

Image 7-39  
Fine local grid point selections

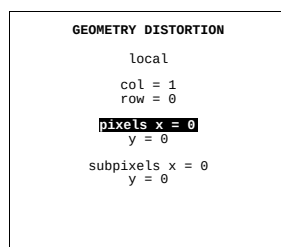
### 7.5.7.5.9 Local adjustment

#### How to adjust the Local grid points ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *pixel x = 0* in the *Geometry Distortion* menu. (menu 7-88)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to coarse shift the selected grid point in a horizontal way.

This will result in a fine adjustment within the selected local zone (Follow this procedure in a similar way to apply a fine adjustment on any desired local zone). (image 7-40)

3. Use the subpixel adjustments to fine shift the selected grid point.
4. When finishing the Local grid point adjustment press **EXIT** to return to the *Guided Geometry Map*.
5. Press **EXIT** to return to the *Edit* menu.



Menu 7-88

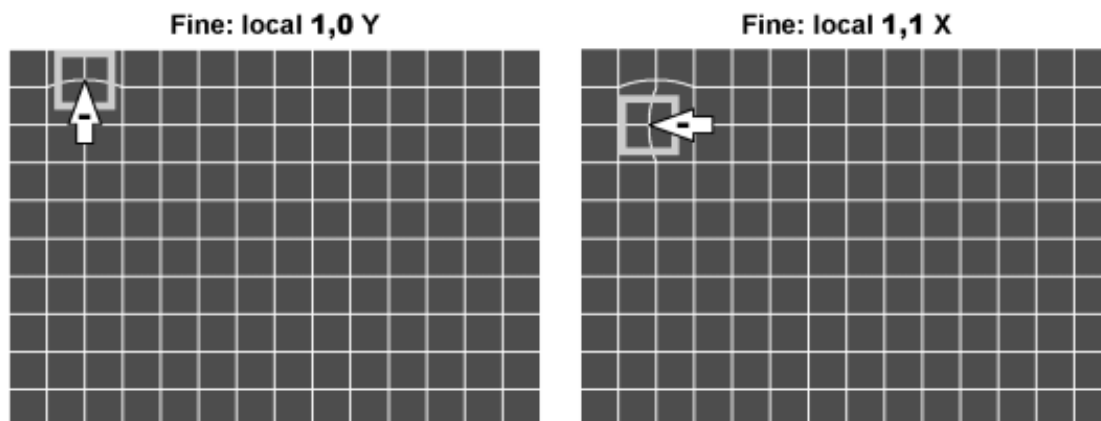


Image 7-40  
Fine local adjustments

### 7.5.7.6 Shift

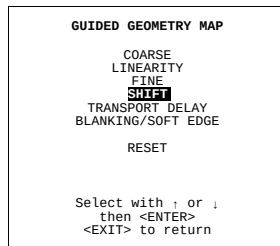
#### What can be done with the Shift adjustment ?

With Shift adjustment it is possible to shift the whole image.

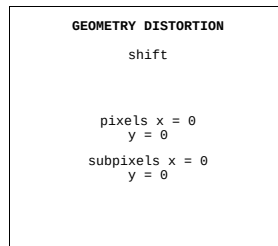
#### How to Start up Shift adjustment ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Shift* in the *Edit* menu. (menu 7-89)
2. Press **ENTER** to select.

The *Geometry Distortion* menu will be displayed. (menu 7-90)



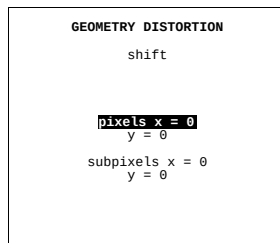
Menu 7-89



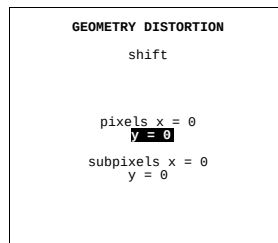
Menu 7-90

#### How to use the Shift adjustment ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select *Pixel x = 0* in the *Geometry Distortion* menu. (menu 7-91)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to shift the whole image in a horizontal way.
3. Push the cursor key  $\uparrow$  or  $\downarrow$  to *Pixel y = 0* in the *Geometry Distortion* menu. (menu 7-92)
4. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to shift the whole image in a vertical way.
5. Use the subpixel selections to fine shift the whole image.
6. Press **EXIT** to return to the *Guided Geometry Map* menu.



Menu 7-91



Menu 7-92

### 7.5.7.7 Transport Delay

#### What can be done with the Transport Delay

The first image data the projector receives from the Image Generator is the start of the first active line. However when a top side bow pre-distortion is used, the first image data the projector needs is the image information that is halfway that first active line, to gather all this information before projecting it on the screen, an adjustable Transport Delay is applied on the received image data.

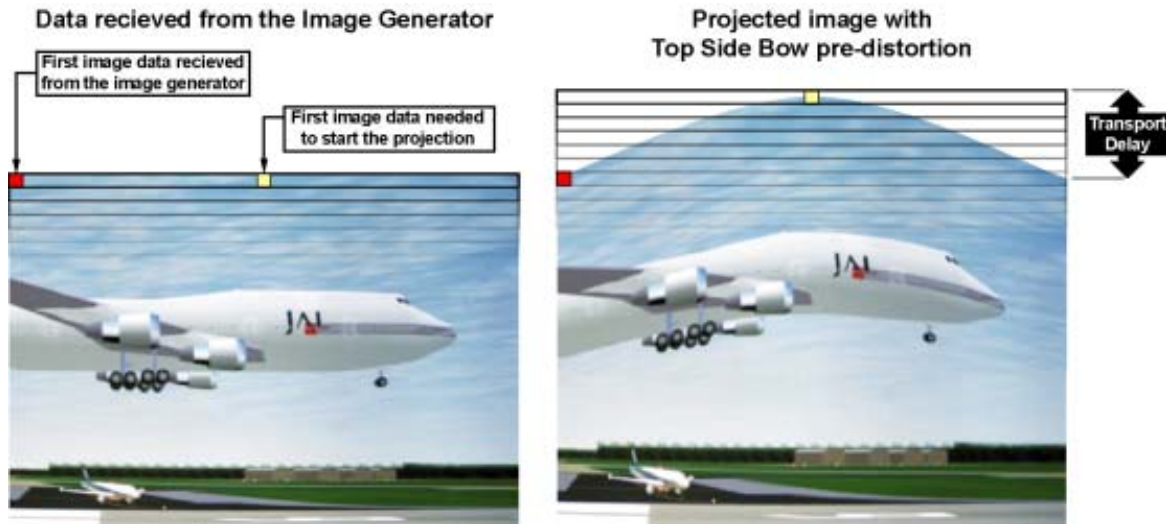
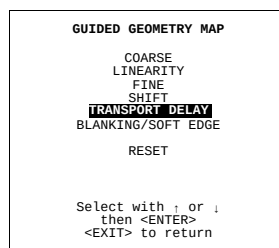


Image 7-41  
Transport Delay basic principle

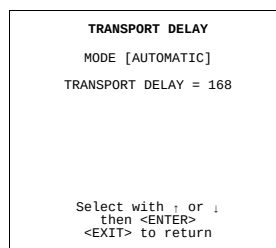
### How to Start up the Transport Delay ?

1. Push the cursor key ↑ or ↓ to highlight *Transport Delay* in the *Edit* menu. (menu 7-93)
2. Press **ENTER** to select.

The *Transport Delay* menu will be displayed. (menu 7-94)



Menu 7-93



Menu 7-94



**In a set up with 1 projector skip the following adjustment procedure and always leave the Transport Delay in the default automatic mode.**

### How to adjust the Transport Delay ?

The following procedure is described for a system with 3 projectors, apply the same guidelines for a multi-projector set up.

1. Make sure the 3 projectors are set to the default [AUTOMATIC] Transport Delay mode. (menu 7-95)

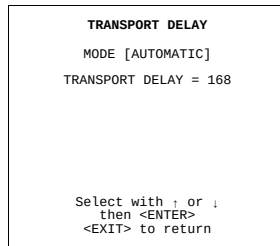
Each projector will automatically correct the Transport Delay to a certain value, e.g.:

| Projector # | Automatic Transport Delay |
|-------------|---------------------------|
| Projector 1 | 200                       |
| Projector 2 | 250                       |
| Projector 3 | 190                       |

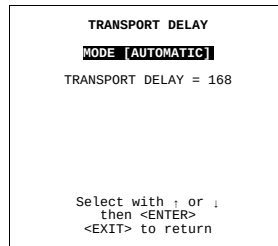
2. Leave the projector with the maximum value on [AUTOMATIC], in this case projector 2 with an Automatic Transport Delay of 250.
3. On Projector 1, push the cursor key to highlight *Mode* in the *Transport Delay* menu. (menu 7-96)
4. Press **ENTER** to toggle from [AUTOMATIC] to [MANUAL]. (menu 7-97)
5. Push the cursor key ↑ or ↓ to highlight *Transport Delay*. (menu 7-98)
6. Push the → cursor key to set the Transport Delay to the maximum value in the set up, in this case set the Transport Delay manually to 250.

## 7. Random Access

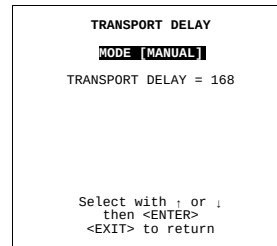
- Repeat step 3 to 6 for projector 3.
- Press **EXIT** to return to the *Guided Geometry Map* menu.



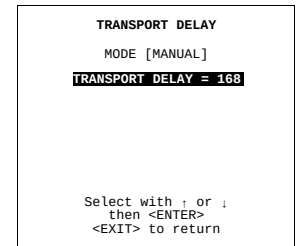
Menu 7-95



Menu 7-96



Menu 7-97



Menu 7-98

### 7.5.7.8 Blanking

#### Overview

- Blanking Start up
- Blanking Active On
- Blanking Shape Start up
- Blanking Shape selections
- Blanking adjustment

#### 7.5.7.8.1 Blanking Start up

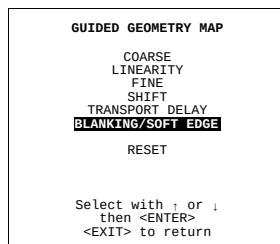
##### What can be done with Blanking ?

Blanking adjustments affect only the edges of the projected image and are used to frame the projected image on the screen and to hide unwanted image information (or noise).

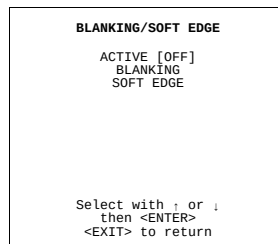
##### How to Start up Blanking ?

- Push the cursor key ↑ or ↓ to highlight *Blanking/Soft Edge* within the *Guided Geometry map* menu. (menu 7-99)
- Press **ENTER** to select.

The *Blanking/Soft Edge* menu will be displayed. (menu 7-100)



Menu 7-99



Menu 7-100

#### 7.5.7.8.2 Blanking Active On

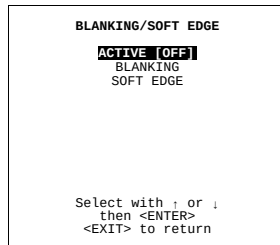
##### How to switch Blanking Active On ?

- Push the cursor key ↑ or ↓ to highlight *Active* in the *Blanking/Soft Edge* menu. (menu 7-101)
- Press **ENTER** to switch *Active* [OFF] to [ON].

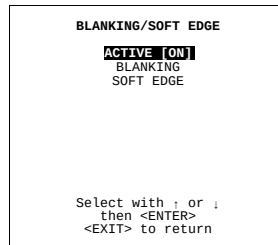
See menu 7-102.

In the default setting Active is set to [OFF].

|       |                       |
|-------|-----------------------|
| [OFF] | Blanking is disabled. |
| [ON]  | Blanking is enabled.  |



Menu 7-101



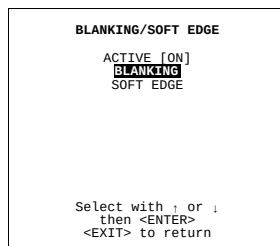
Menu 7-102

### 7.5.7.8.3 Blanking Shape Start up

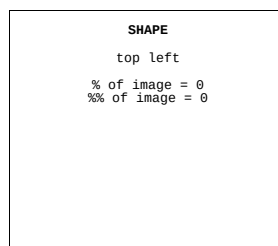
#### How to Start Up the Blanking Shape menu ?

1. Push the cursor key ↑ or ↓ to highlight *Blanking* in the *Blanking/Soft Edge* menu. (menu 7-103)
2. Press **ENTER** to select.

The *Shape* menu will be displayed. (menu 7-104)



Menu 7-103

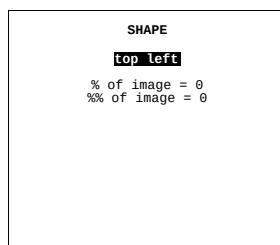


Menu 7-104

### 7.5.7.8.4 Blanking Shape selections

#### How to use the Blanking Shape selection ?

1. Push the cursor key ↑ or ↓ to highlight the first item in the *Shape* menu. (menu 7-105)
2. Press **ENTER** to scroll through the available coarse shape selections: top, bottom, left and right. (image 7-42)
3. Push the cursor key ← or → to scroll through the available fine shape selections. image 7-42



Menu 7-105

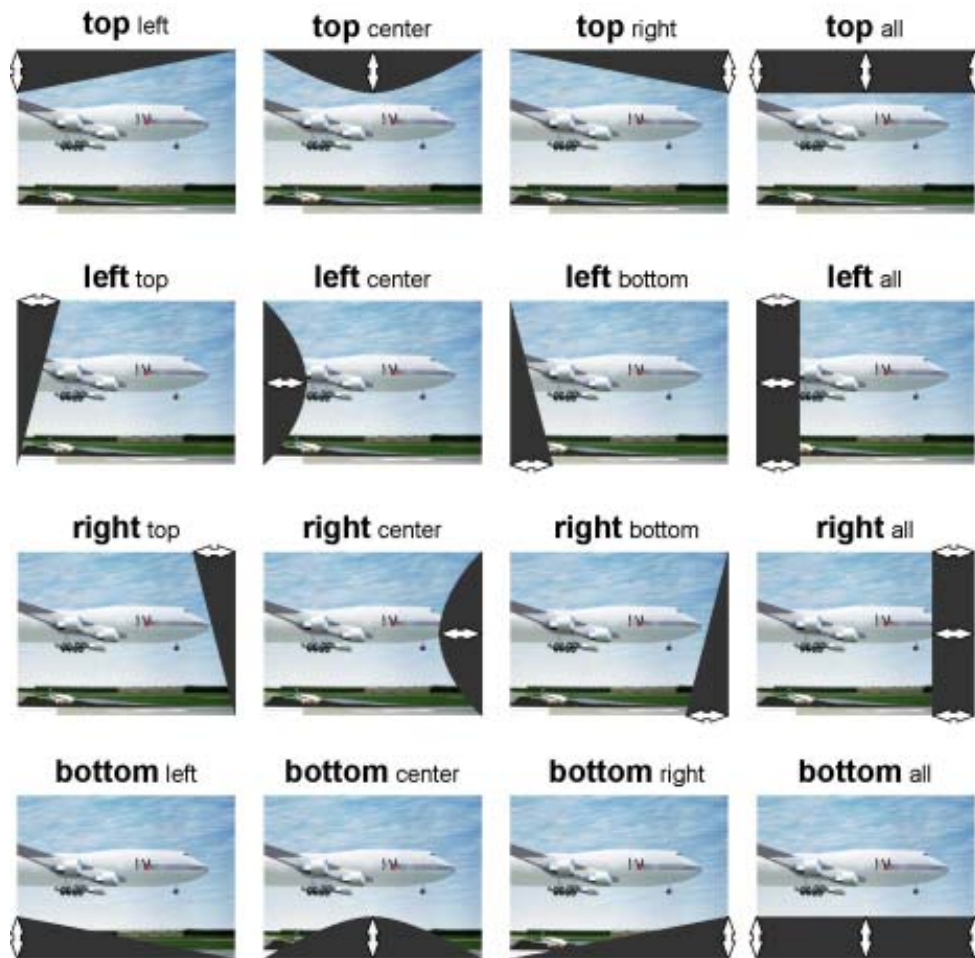


Image 7-42  
Shape selections

#### 7.5.7.8.5 Blanking adjustment

**What is % of image and %% of image adjustment ?**

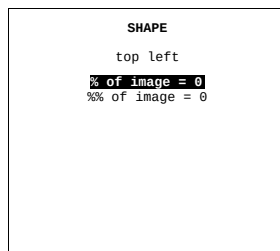
|             |                                                                                                  |
|-------------|--------------------------------------------------------------------------------------------------|
| % of image  | Coarse adjustment, this will shift the blending zone in steps of 1/100 of the total image shape. |
| %% of image | Fine adjustment, this will shift the blending zone in steps of 1/10000 of the total image shape. |

**How to adjust the Blanking Shape ?**

We assume *top left* is selected.

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to select % of image. (menu 7-106)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to black out the left top side of the image (Follow this procedure in a similar way to apply a desired blanking adjustment) image 7-42.
3. Use the %% of image adjustments to fine shift the selected grid point.
4. When finished press **EXIT** to return to the *Blanking/Soft Edge* menu.
5. Press **EXIT** to return to the *Guided Geometry Map* menu.

6. Press **EXIT** to return to the *Edit* menu.



Menu 7-106

### 7.5.7.9 Electronic Soft Edge



Whenever Soft Edge is mentioned in this chapter this always refer to Electronic Soft Edge.

#### Overview

- Introduction to Soft Edge
- Preparations
- Soft Edge Start up
- Switching on the Soft Edge
- Soft Edge Shape Start up
- Soft Edge Shape selections
- Basic Soft Edge Shape Set up
- Soft Edge Width Start up
- Soft Edge Width selections
- Basic Soft Edge Width Set up

#### 7.5.7.9.1 Introduction to Soft Edge

##### Why Soft Edge ?

When working in a multichannel setup the WARP 6™ and its extensive Soft Edge possibilities enable an image blending that gives the appearance of a single view, thus achieving realistic immersion for the majority of simulation and virtual reality applications.



Image 7-43  
WhySoft Edge ?

##### What is the Basic Principal of Soft Edge ?

The principle of edge blending is archived by linear modulation of the light output in the overlap zone so that the light output in that zone equals the light output of the rest of the image.

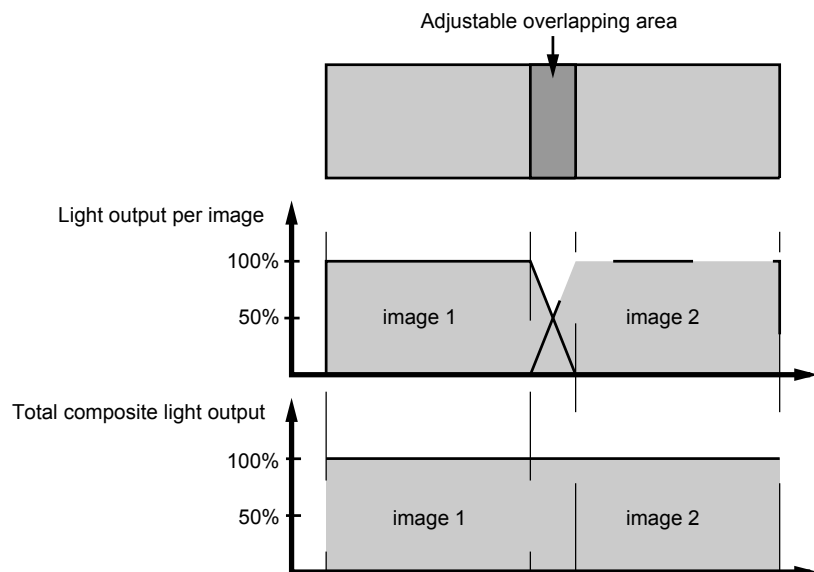


Image 7-44  
Soft Edge Basic Principle

### 7.5.7.9.2 Preparations

#### Soft Edge Preparations

To ensure proper soft edge adjustment, be sure that the following adjustments are done perfectly on all projectors:

- Convergence (Electronic Convergence).
- Geometry.
- Color Matching (Color Temperature, Input Balance, Gamma).



When projecting on a cylindrical screen, the adjustments mentioned above can be done by using the projector adjustments in combination with Polaris.

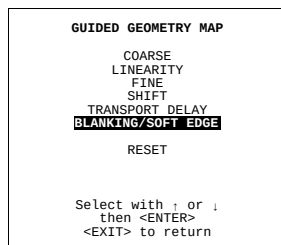
Polaris is a Test Pattern Generator software that can generate a user-defined test pattern that is used to align projection systems. It also has the ability to generate predefined patterns for standardized projection systems. The software is developed to run on IRIX (Order numbers for Polaris: R9898300 for a 6 months license, R9893301 for a full license).

### 7.5.7.9.3 Soft Edge Start up

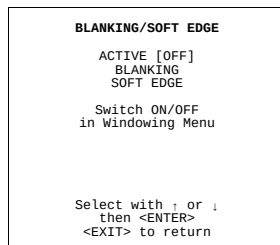
#### How to Start up Soft Edge ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Blanking/Soft Edge* menu. (menu 7-107)
2. Press **ENTER** to select.

The *Blanking/Soft Edge* menu will be displayed. (menu 7-108)



Menu 7-107



Menu 7-108

#### 7.5.7.9.4 Switching on the Soft Edge

##### How to switch on the Soft Edge?

The Soft Edge is switched On/Off inside the Windowing menu.

The Active [On] or [Off] menu item is grayed out and will only show the current soft edge status.

|       |                       |
|-------|-----------------------|
| [OFF] | Soft Edge is disabled |
| [ON]  | Soft Edge is enabled  |

#### 7.5.7.9.5 Soft Edge Shape Start up

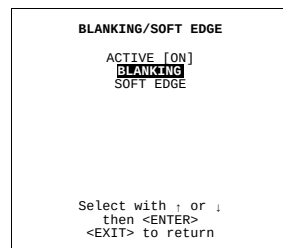
##### What can be done with the Soft Edge Shape menu ?

Before creating a soft edge, an overlap zone is created, the shape of this overlap zone is fully adjustable, within this menu the shape of the blending zone is aligned with the shape of the overlap zone.

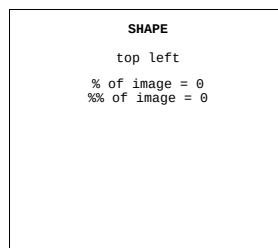
##### How to Start Up the Soft Edge Shape menu ?

1. Push the cursor key ↑ or ↓ to highlight *Shape* in the *Blanking/Soft Edge* menu. (menu 7-109)
2. Press **ENTER** to select.

The *Shape* menu will be displayed. (menu 7-110)



Menu 7-109

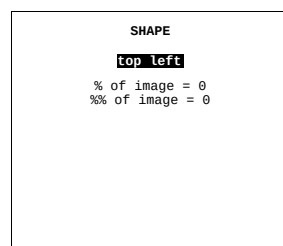


Menu 7-110

#### 7.5.7.9.6 Soft Edge Shape selections

##### How to use the Soft Edge Shape selection ?

1. Push the cursor key ↑ or ↓ to highlight the first item in the *Shape* menu. (menu 7-111)
2. Press **ENTER** to scroll through the available coarse shape selections: top, bottom, left and right. (image 7-45)
3. Push the cursor key ← or → to scroll through the available fine shape selections. (image 7-45)



Menu 7-111

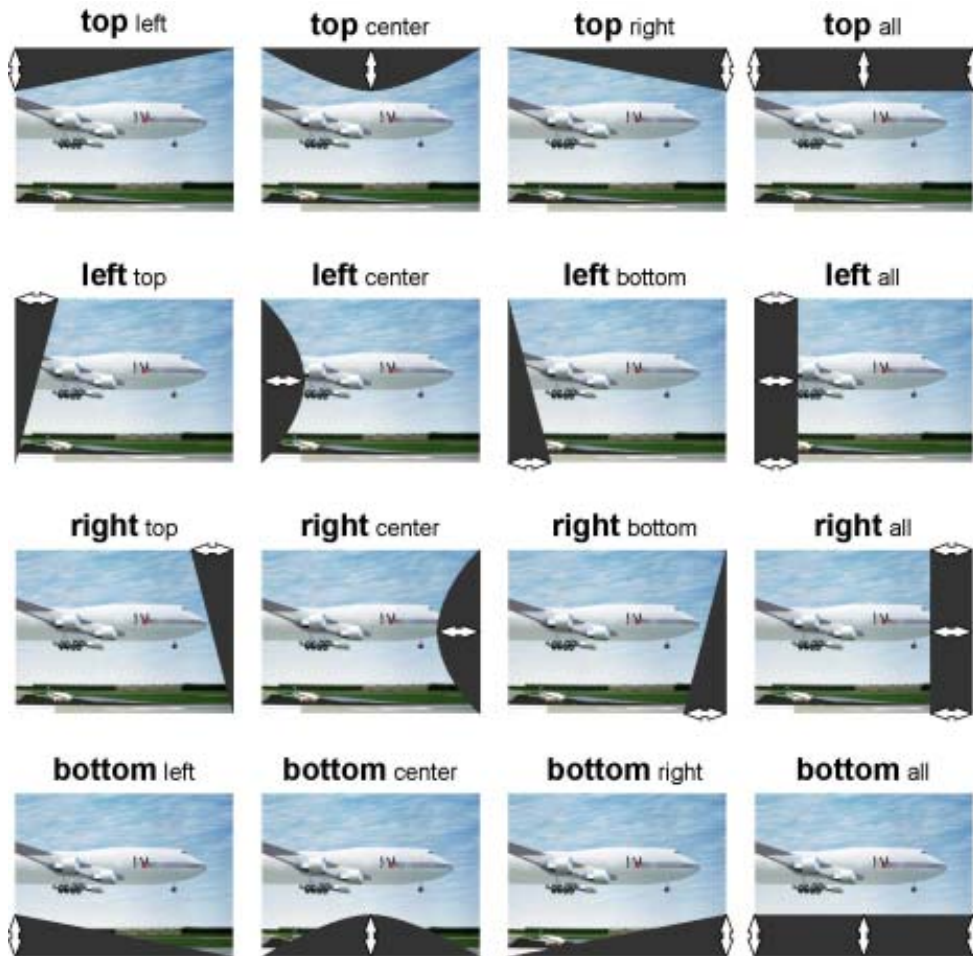


Image 7-45  
Shape selections

#### 7.5.7.9.7 Basic Soft Edge Shape Set up



The following procedures will adjust the Shape of a basic Electronic Soft Edge set up with 2 projectors and a 12.5 % overlap zone, apply the same procedures for every Electronic Soft Edge you want to create in a multi-projector system.

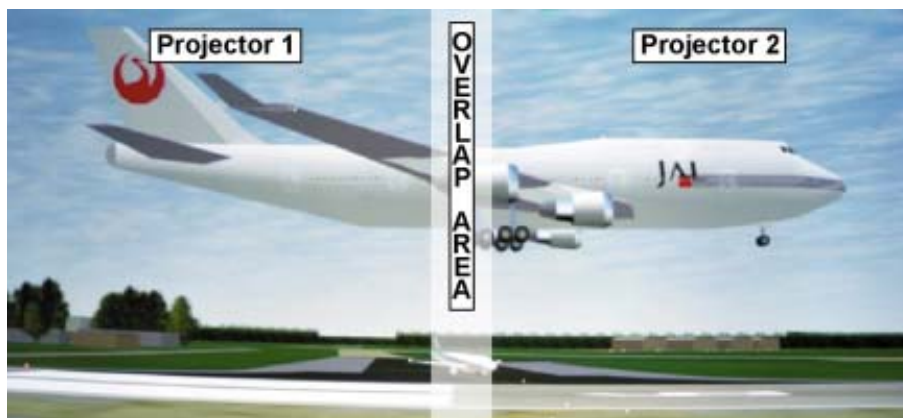


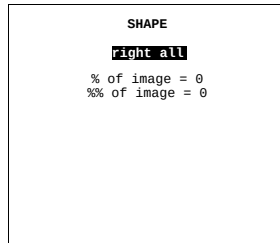
Image 7-46  
Basic Electronic Soft Edge set up



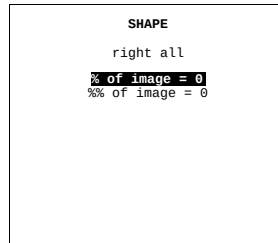
Be sure the Soft Edge Active mode is set to [ON] for both projectors.

### Setting up the Shape for Projector 1

1. Use the combination of **ENTER** and the cursor key ← or → to select *right all*. (menu 7-112)
2. Push the cursor key ↑ or ↓ to select % of image. (menu 7-113)
3. Push the cursor key ← or → to coincide the right side of the image of Projector 1 with the center of the overlap area. (image 7-47)
4. Use the subpixel selections for fine adjustments.



Menu 7-112



Menu 7-113

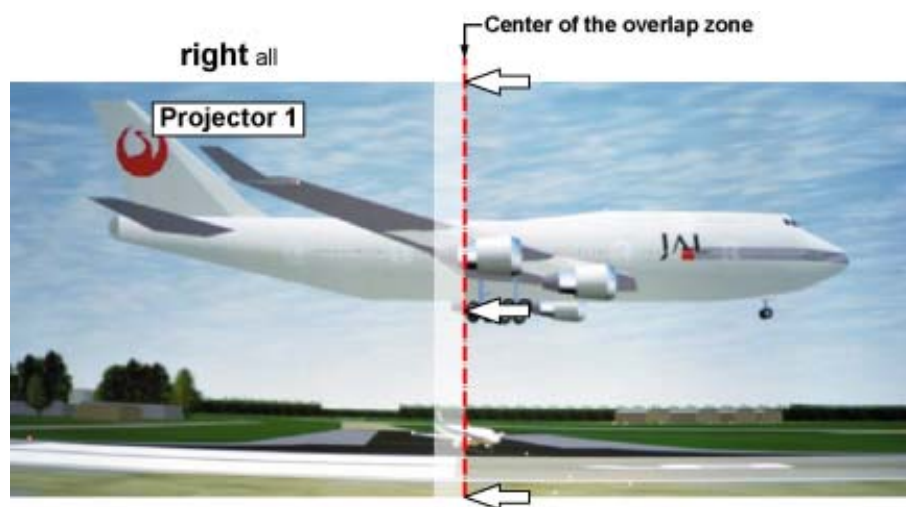
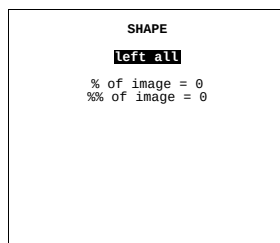


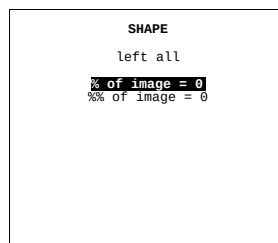
Image 7-47  
Basic Shape set up for Projector 1

### Setting up the Shape for Projector 2

1. Use the combination of **ENTER** and the cursor key ← or → to select *left all*. (menu 7-114)
2. Push the cursor key ↑ or ↓ to select % of image. (menu 7-115)
3. Push the cursor key ← or → to coincide the left side of the image of Projector 2 with the center of the overlap area. (image 7-48)
4. Use the subpixel selections for fine adjustments.



Menu 7-114



Menu 7-115

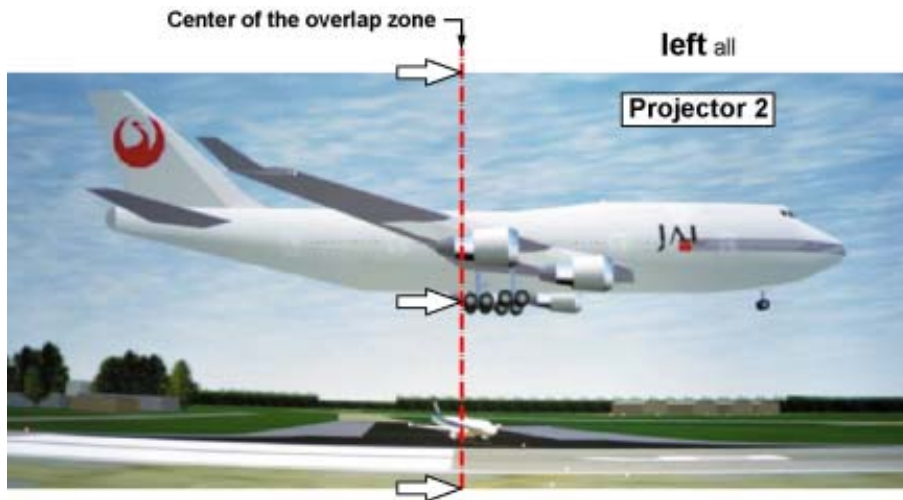


Image 7-48  
Basic Shape set up for Projector 2

#### 7.5.7.9.8 Soft Edge Width Start up



When Soft Edge is not installed on the projector or when the Soft Edge Active mode is set to [OFF] this menu item will be grayed out.

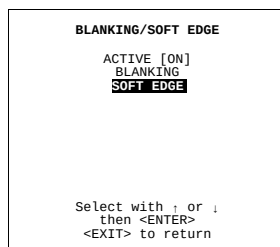
#### What can be done with the Soft Edge Width menu ?

Within this menu the width of the blending zone is set up.

#### How to Start up the Soft Edge Width menu ?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Soft Edge*. (menu 7-116)
2. Press **ENTER** to select.

The *Soft Edge Width* barscale, displaying the width in % (Range from 00.0 to 25.5 %), will be displayed. (image 7-49)



Menu 7-116

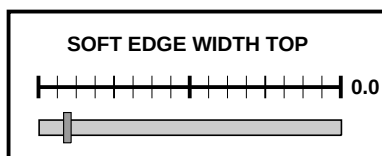


Image 7-49  
The Soft Edge Width barscale

#### 7.5.7.9.9 Soft Edge Width selections

#### How to use the Soft Edge Width selection ?

1. Press **ENTER** to scroll through all available Soft Edge Width selections: top, bottom, left and right. (image 7-50)

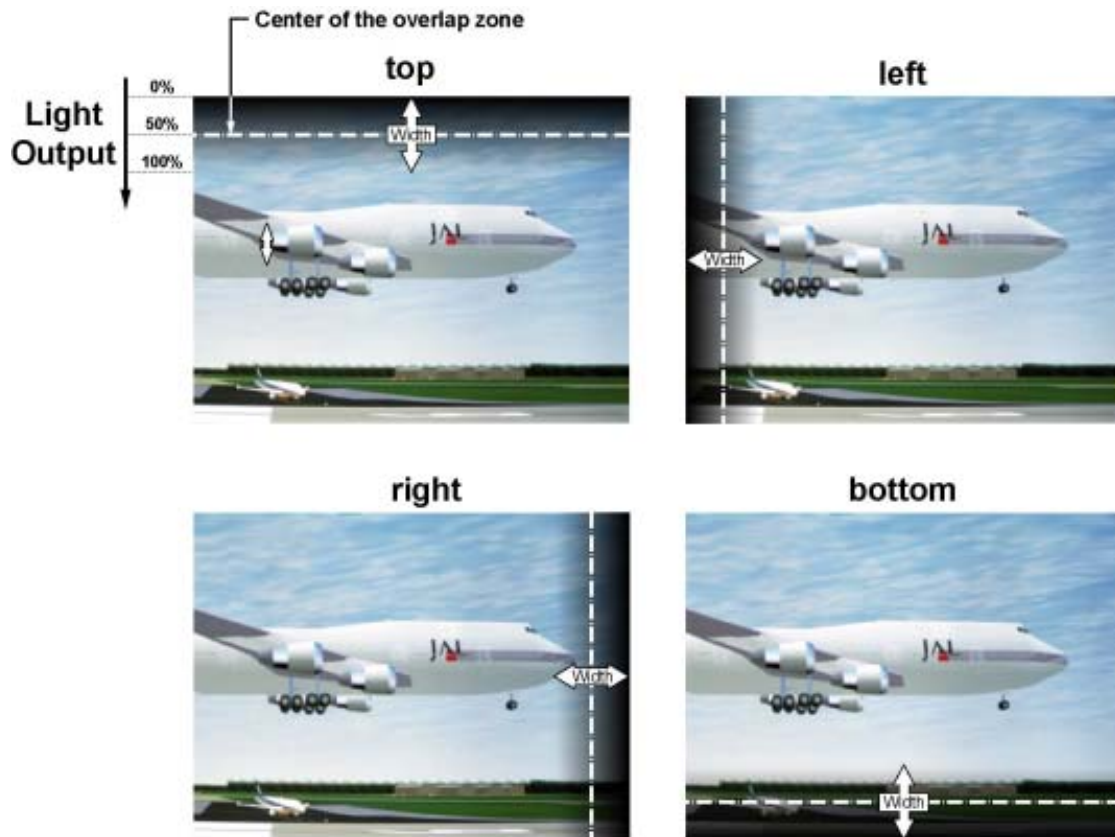


Image 7-50  
Soft Edge Width selections

#### 7.5.7.9.10 Basic Soft Edge Width Set up

##### Setting up the Width for Projector 1 ?

1. Press **ENTER** until *Right* is selected. (image 7-51)
2. Push the cursor key  $\leftarrow$  or  $\rightarrow$  to adjust the *right width* until it matches or exceeds the width of the overlap zone. (image 7-52)
3. Press **EXIT** to return to the *Blanking/Soft Edge* menu.
4. Press **EXIT** to return to the *Guided Geometry Map* menu.
5. Press **EXIT** to return to the *Edit* menu.

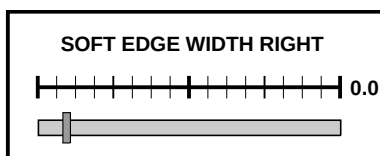


Image 7-51

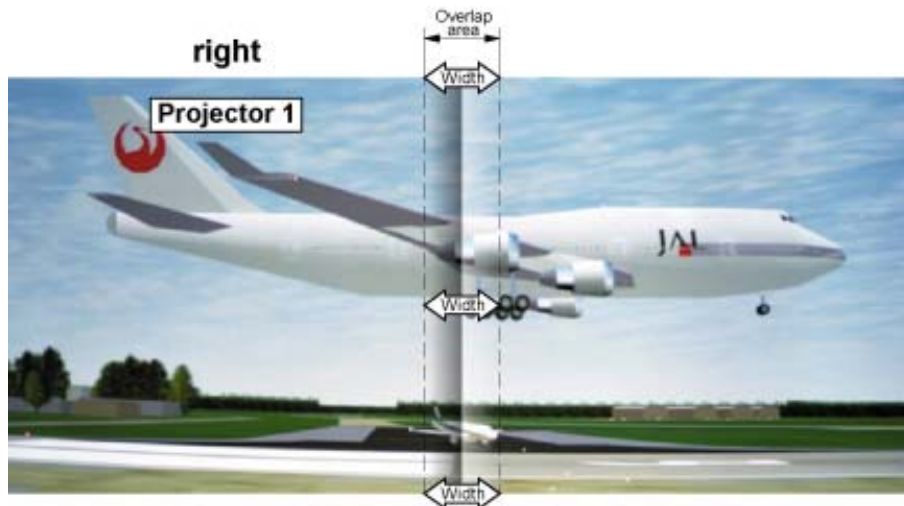


Image 7-52  
Basic Width set up for Projector 1

### Setting up the Width for Projector 2 ?

1. Press **ENTER** until *Left* is selected. (image 7-53)
2. Push the cursor key ← or → to adjust the *left width* until it matches the right width of projector 1. (image 7-54)
3. Press **EXIT** to return to the *Blanking/Soft Edge* menu.
4. Press **EXIT** to return to the *Guided Geometry Map* menu.
5. Press **EXIT** to return to the *Edit* menu.

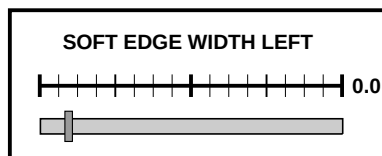


Image 7-53

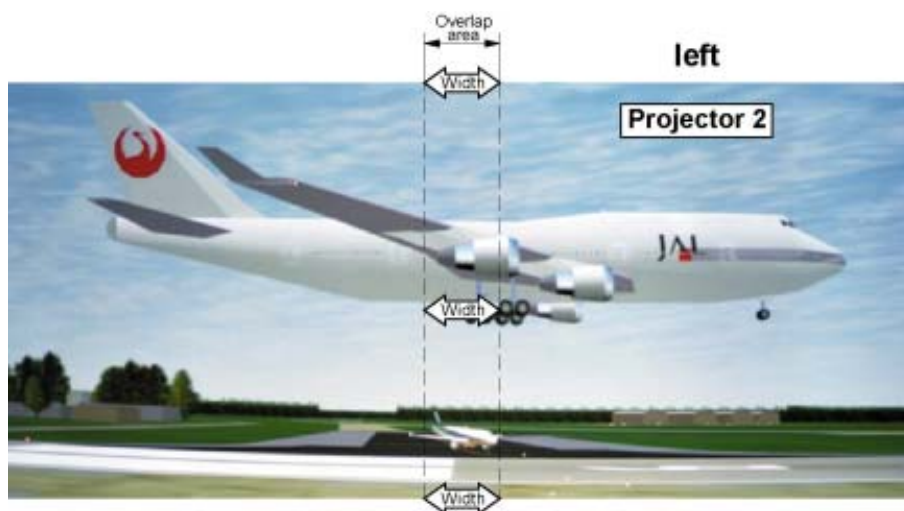


Image 7-54  
Basic Width set up for Projector 2

### 7.5.7.10 Reset

#### Overview

- Start up
- Coarse Reset
- Linearity Reset
- Reset Fine
- Reset Blanking/Soft Edge
- Reset All

#### What can be done with Reset ?

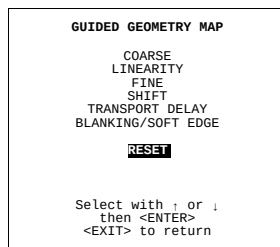
With the Reset menu item, a selection, or all Geometry and Soft Edge adjustment values, can be reset to their default values.

#### 7.5.7.10.1 Start up

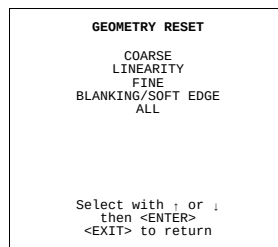
##### How to Start up Reset ?

1. Push the cursor key ↑ or ↓ to highlight *Reset* in the *Edit* menu. (menu 7-117)
2. Press **ENTER** to select.

The *Geometry Reset* menu will be displayed. (menu 7-118)



Menu 7-117



Menu 7-118

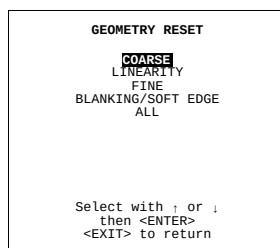
#### 7.5.7.10.2 Coarse Reset

##### How to reset the Coarse adjustments ?

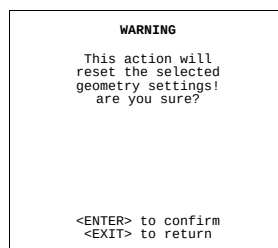
1. Push the cursor key ↑ or ↓ to highlight *Coarse* within the *Geometry Reset* menu. (menu 7-119)
2. Press **ENTER** to select.

A warning will be displayed . (menu 7-120)

3. Press **ENTER** to reset the Coarse adjustments  
Or,  
Press **EXIT** to return to the Geometry Reset menu.



Menu 7-119



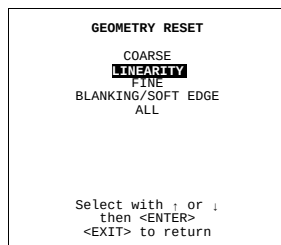
Menu 7-120

#### 7.5.7.10.3 Linearity Reset

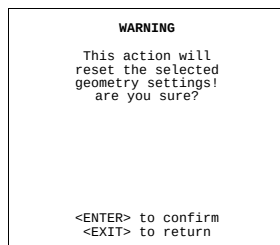
##### How to reset the Linearity adjustments ?

1. Push the cursor key ↑ or ↓ to highlight *Linearity* within the *Geometry Reset* menu. (menu 7-121)

2. Press **ENTER** to select.  
A warning will be displayed . (menu 7-122)
3. Press **ENTER** to reset the Linearity adjustments  
Or,  
Press **EXIT** to return to the Geometry Reset menu.



Menu 7-121

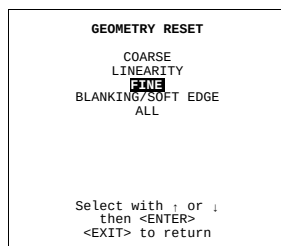


Menu 7-122

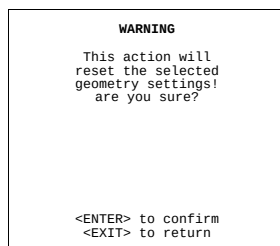
### 7.5.7.10.4 Reset Fine

#### How to reset the Fine adjustments ?

1. Push the cursor key ↑ or ↓ to highlight *Fine* within the *Geometry Reset* menu. (menu 7-123)
2. Press **ENTER** to select.  
A warning will be displayed . (menu 7-124)
3. Press **ENTER** to reset the Fine adjustments  
Or,  
Press **EXIT** to return to the Geometry Reset menu.



Menu 7-123



Menu 7-124

### 7.5.7.10.5 Reset Blanking/Soft Edge

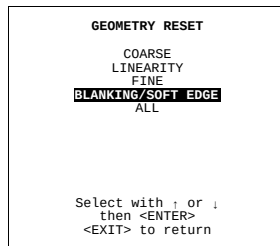
#### How to reset the Blanking/Soft Edge adjustments ?

1. Push the cursor key ↑ or ↓ to highlight *Blanking/Soft Edge* within the *Geometry Reset* menu. (menu 7-125)
2. Press **ENTER** to select.  
The *Soft Edge Reset* menu will be displayed. (menu 7-126)
3. Push the cursor key ↑ or ↓ to highlight *Soft Edge* or *All* in the Soft Edge Reset menu.

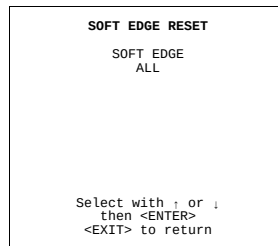
|           |                                                                        |
|-----------|------------------------------------------------------------------------|
| Soft Edge | Only the Soft Edge Width values will be reset to their default values. |
| All       | All Blanking/Soft Edge values will be reset to their default values.   |

4. Press **ENTER** to select the desired Blanking/Soft Edge Reset value.  
A warning will be displayed . (menu 7-127)
5. Press **ENTER** to reset the selected Blanking/Soft Edge adjustments

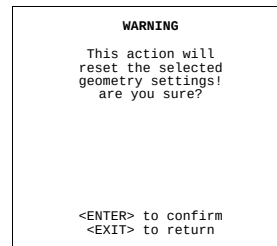
Or,  
Press **EXIT** to return to the Geometry Reset menu.



Menu 7-125



Menu 7-126

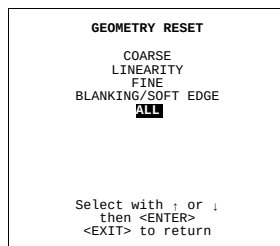


Menu 7-127

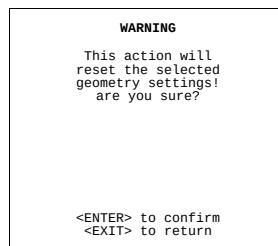
### 7.5.7.10.6 Reset All

#### How to reset the All geometry adjustments ?

1. Push the cursor key ↑ or ↓ to highlight *All* within the *Geometry Reset* menu. (menu 7-128)
2. Press **ENTER** to select.  
A warning will be displayed . (menu 7-129)
3. Press **ENTER** to reset the All geometry adjustments  
Or,  
Press **EXIT** to return to the Geometry Reset menu.



Menu 7-128



Menu 7-129

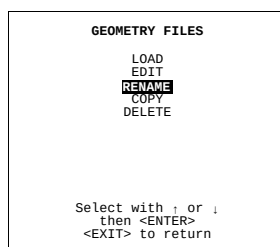
## 7.5.8 Rename

### Start Up

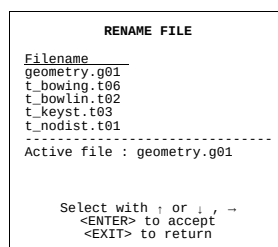
To change the name of a selected file:

1. Push the cursor key ↑ or ↓ to highlight *Rename*. (menu 7-130)
2. Press **ENTER**.  
The Rename selection menu will be displayed. (menu 7-131)
3. Push the cursor key ↑ or ↓ to select a file name.
4. Press **ENTER** to select.

The Rename file menu will be displayed with the selected file name already filled in, leave in the 'From file name :' area and in the 'To file name :' area. The first character in the 'To file name :' area is highlighted.



Menu 7-130



Menu 7-131

### Changing the characters

1. Push the cursor keys ← or → to select the desired character. (menu 7-132)  
Or,  
Change that character by pushing the cursor keys ↑ or ↓. Numeric characters can be entered directly with numeric keys on the RCU.  
Or,  
Press **ENTER** to confirm.  
The renamed file is entered in the list of files.
2. Press **EXIT** to return to the Rename menu selection.  
No changes are made.

```

      RENAME FILE

      From file name:
      geometry.g01
      To file name :
      demo.g01

      Select with - or -
      Reprogram with , or ;
      <ENTER> to confirm
      <EXIT> to return

```

Menu 7-132

## 7.5.9 Copy

### Start Up

To copy the name of a selected file :

1. Push the cursor key ↑ or ↓ to highlight **Copy**. (menu 7-133)
2. Press **ENTER**.

The Copy selection menu will be displayed. (menu 7-134)

3. Push the cursor key ↑ or ↓ to select a file name.
4. Press **ENTER** to select.

The Copy file menu will be displayed with the selected file name already filled in, leave in the 'From file name :' area and in the 'To file name :' area. The first character in the 'To file name :' area is highlighted.

```

      GEOMETRY FILES

      LOAD
      EDIT
      RENAME
      COPY
      DELETE

      Select with , or ;
      then <ENTER>
      <EXIT> to return

```

Menu 7-133

```

      COPY FILE

      Filename
      geometry.g01
      t_bowling.t06
      t_bowling.t02
      t_keyst.t03
      t_nodist.t01
      -----
      Active file : geometry.g01

      Select with , or ; , -
      <ENTER> to accept
      <EXIT> to return

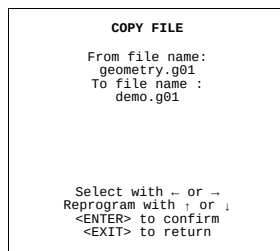
```

Menu 7-134

### Changing the characters

1. Push the cursor key ← or → to select the desired character. (menu 7-135)  
Or,  
Change that character by pushing the cursor keys ↑ or ↓. Numeric characters can be entered directly with numeric keys on the RCU.  
Or,  
Press **ENTER** to confirm.  
The copy file is entered in the list of files.
2. Press **EXIT** to return to the Copy menu selection.

No changes are made.



Menu 7-135

## 7.5.10 Delete

### How to delete a Geometry file?

To delete a selected file out of the list of files :

1. Push the cursor key ↑ or ↓ to highlight *Delete*. (menu 7-136)
2. Press **ENTER**.

The delete selection menu will be displayed. (menu 7-137)

3. Push the cursor key ↑ or ↓ to select a file name.

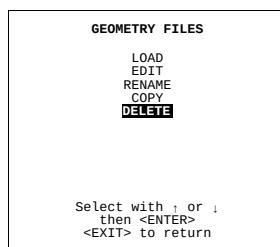
4. Press **ENTER** to select.

If [all] is selected, your password has to be entered before all files will be deleted.

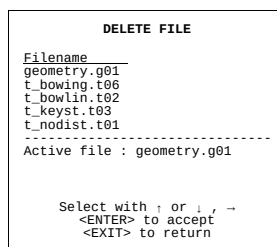
A confirmation menu "Delete file name ?" is displayed. (menu 7-138)

5. Press **ENTER** to delete the file, press **EXIT** if you want to keep it.

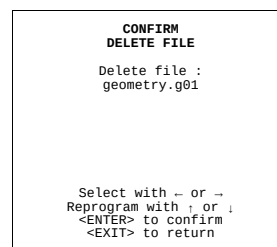
**Note:** The active file cannot be deleted.



Menu 7-136



Menu 7-137



Menu 7-138

## 7.6 Stereo Options

### Overview

- Starting Up Stereo Options
- Stereo Phase
- Invert Stereo
- Master Channel
- Stereo Mode
- Dark Time
- Forced Asynchronous
- Infitec+ (Optional)

### 7.6.1 Starting Up Stereo Options

#### Only available in Stereo Mode

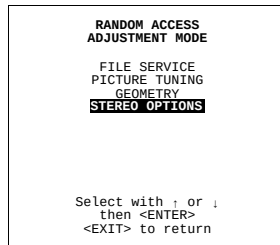
The *Stereo Options* menu is only available when the projector is running in Stereo Mode = when a Stereo Source is provided by the IG.

When running in Mono Mode this item will be grayed out.

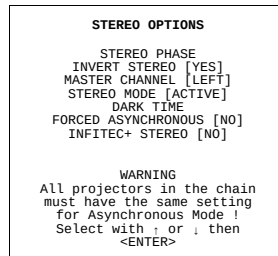
### How to Start Up Stereo Options?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Stereo Options*. (menu 7-139)
2. Press **ENTER** to select.

The *Stereo Options* menu will be displayed. (menu 7-140)



Menu 7-139



Menu 7-140

### 7.6.2 Stereo Phase



For Active Infitec+ , *Phase* can also be adjusted for optimal stereo separation

#### What can be done?

With Stereo Phase it is possible to apply an adjustable time delay on the stereo emitter signal.

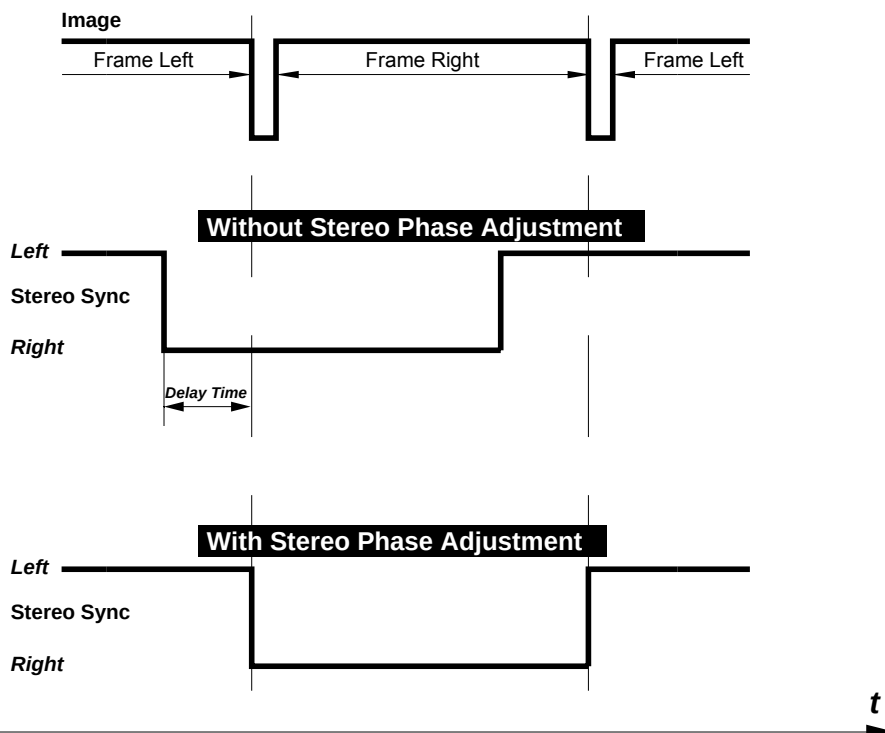


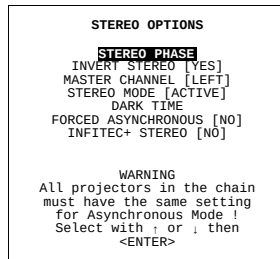
Image 7-55  
Stereo Phase Adjustment

#### How to adjust Stereo Phase?

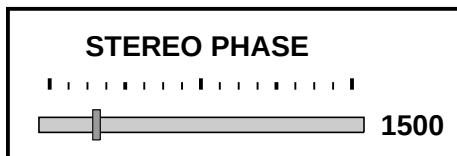
1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Stereo Phase*. (menu 7-141)
2. Press **ENTER** to select.

The Stereo Phase bar scale, displaying the Stereo Phase Adjustment Steps (1 Step = 400 nanoseconds, Range from 0 to 20.000), will be displayed. (image 7-56)

- Push the cursor key ← or → for a fine adjustment of 1 step, or push the ↑ or ↓ keys for a coarse adjustment of 100 steps.  
**Note:** Adjustment is possible until a full frame delay is reached.
- Press **EXIT** to return to the Stereo Options menu.



Menu 7-141

Image 7-56  
The Stereo Phase bar scale

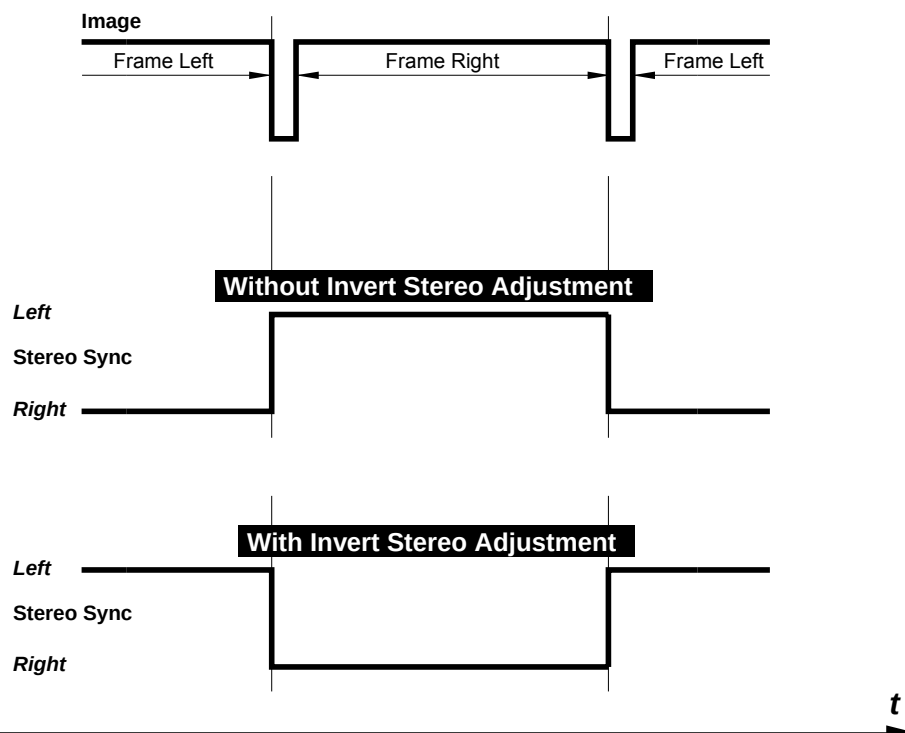
### 7.6.3 Invert Stereo

#### What can be done?

With *Invert Stereo* we can invert the stereo emitter signal (Left eye opens when a right image is supplied to the projector)

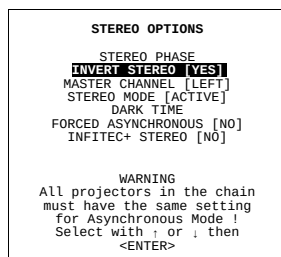


We advise to set *Invert Stereo* ON, one frame delay is inherent to DLP technology.

Image 7-57  
Invert Stereo Adjustment

### How to activate Invert Stereo?

1. Push the cursor key ↑ or ↓ to highlight *Invert Stereo*. (menu 7-142)
2. Press **ENTER** to toggle between [YES] or [NO].
3. Press **EXIT** to return to the *Stereo Options* menu.



Menu 7-142

### 7.6.4 Master Channel

#### What can be done?

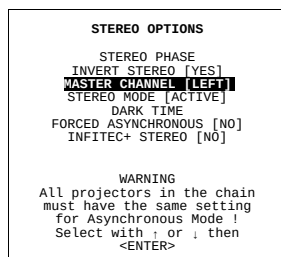
The Stereo IG will always provide a left + right image to the projector.

It is possible to force the projector into mono mode, by setting the Stereo Mode to Passive, only the left or the right image is displayed,

Use the *Master Channel* menu to select either the *Left* or the *Right* image, this Master Channel will be displayed when the Stereo Mode is set to Passive.

#### How to Select Master Channel?

1. Push the cursor key ↑ or ↓ to highlight *Master Channel*. (menu 7-143)
2. Press **ENTER** to toggle between [LEFT] or [RIGHT].
3. Press **EXIT** to return to the *Stereo Options* menu.



Menu 7-143

### 7.6.5 Stereo Mode

#### What can be done?

*Stereo Mode* is default set to *Active*, a Stereo Image is projected when provided by the IG.

However it is possible to display only the left or right image of the Stereo Image Pair, this is done by setting the *Stereo Mode* to *Passive*.

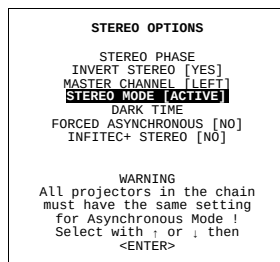
Either the left or right image is projected, according to the Master Channel Selection.

#### How to Set Up Stereo Mode?

1. Push the cursor key ↑ or ↓ to highlight *Master Channel*. (menu 7-144)
2. Press **ENTER** to toggle between [ACTIVE] or [PASSIVE].

|         |                                                                                                                                                                      |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTIVE  | The Projector will run in the default Stereo Mode, a stereo image is projected.                                                                                      |
| PASSIVE | The Projector will only display the left or right image of the Stereo Image, according to the Master Channel Selection, either the left or right image is projected. |

3. Press **EXIT** to return to the *Stereo Options* menu.



Menu 7-144

### 7.6.6 Dark Time



For Active Infitec+ , *Dark Time* can also be adjusted for optimal stereo separation

#### What can be done?

The principle of a pair of Stereo Glasses is quite simple:

1. When the left image is projected, the left shutter is open, allowing the left eye to see the left image. The shutter for the right eye is closed.
2. During the blanking period, before projecting the right image, the left shutter is closed and the right shutter will open.
3. The right image is projected, the right shutter is open, allowing the right eye to see the right image.

The ideal situation is when the opening/closing times of these shutters are in sync with the blanking time of DLP mirrors.

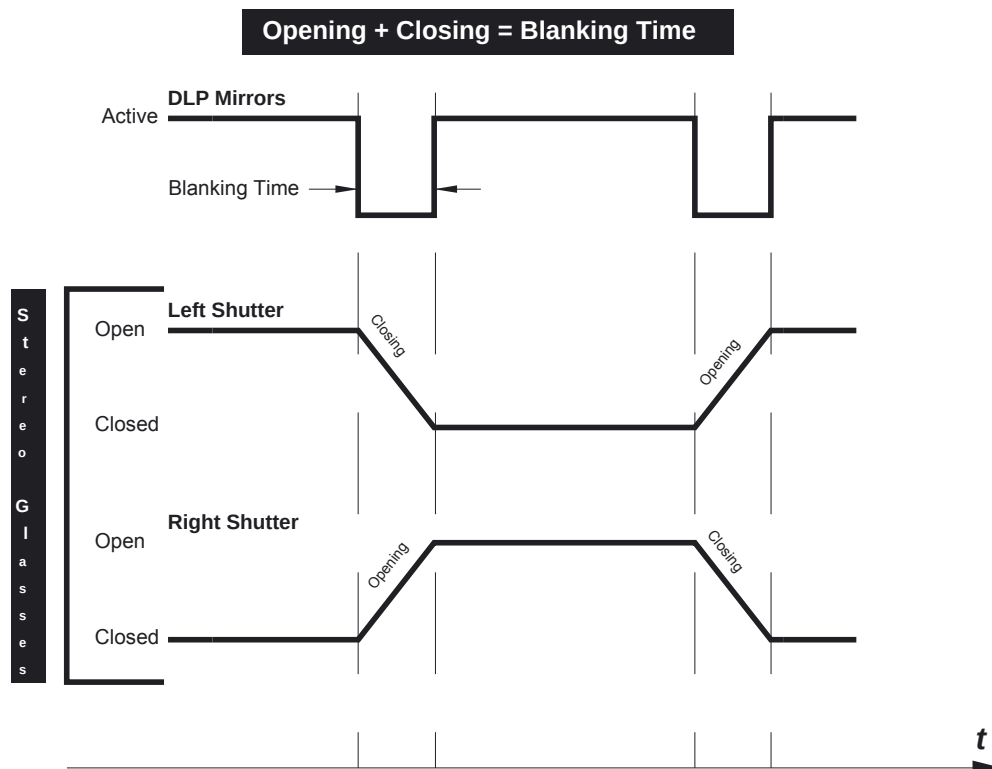


Image 7-58  
Opening/closing times of the shutters in sync with the blanking time

Closing these shutters too late and/or opening too early will cause Cross-Talk.

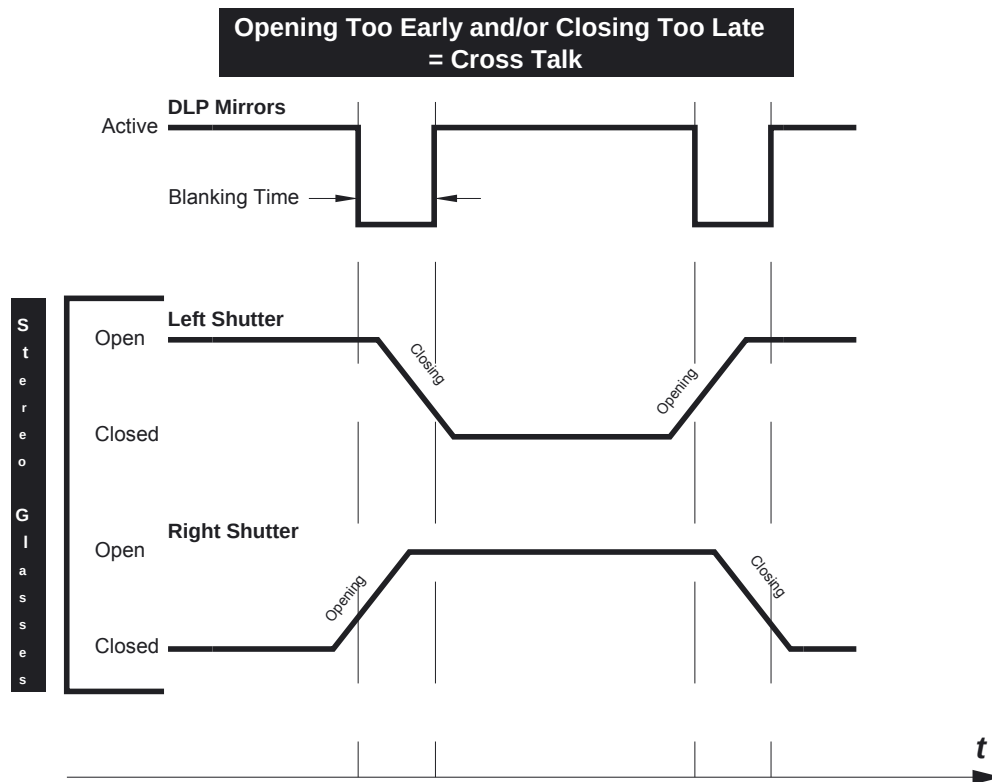


Image 7-59  
Shutters closing too late and/or opening too early cause Cross-Talk

Closing these shutters too quickly and/or opening too slowly will cause Color Artifacts.

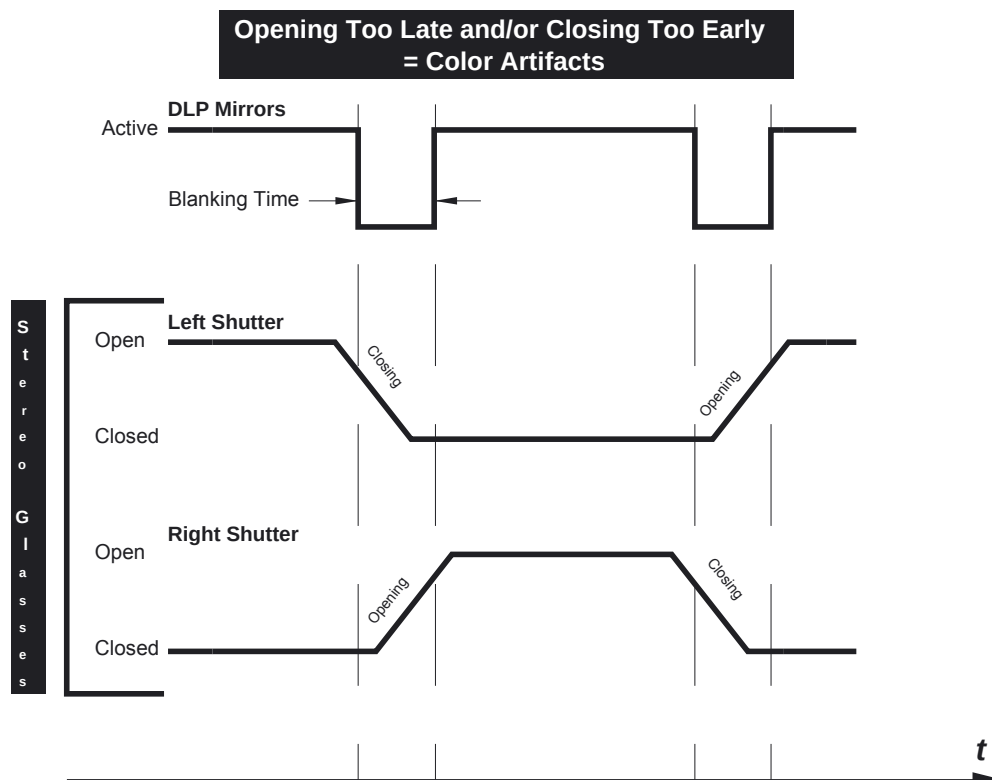


Image 7-60  
Shutters closing too early and/or opening too late cause Color Artifacts

Adjusting the Dark Time will allow an easy synchronization of the Blanking Period of the DLP mirrors with the opening/closing time of the shutters in the Stereo Glasses.

### How to Adjust Dark Time?

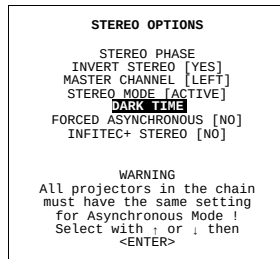
1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Dark Time*. (menu 7-145)

2. Press **ENTER** to select.

The Dark Time bar scale, displaying the width in % (Range from 0 to 100 %), will be displayed. (image 7-61)

3. Change the Dark Time Value by pushing the cursor key ← or → until the desired value is reached.  
**Note:** By default Dark Time is set to maximum (100%).

4. Press **EXIT** to return to the Stereo Options menu.



Menu 7-145



Image 7-61  
The Dark Time bar scale

### 7.6.7 Forced Asynchronous

#### What is Synchronous Mode?

When the IG provides a signal within the range from 96Hz to 108Hz, the projector will run Synchronous with the IG, this will give the best result when projecting moving images.

#### What is Asynchronous Mode?

If the IG provides a signal that is not in the Synchronous Range (=96Hz to 108Hz), the projector will automatically run in Asynchronous Mode, the image will be displayed by the projector at 120Hz.



**If the input is a Stereo Source and the frequency is in a range from 48Hz to 60 Hz, the image will be displayed by the projector at 120Hz.**

#### What is Forced Asynchronous Mode (What can be done)?

When projecting a non-moving image (e.g. CAD design) with an IG providing a signal within the range from 96Hz to 108Hz, the best result is achieved by projecting the non-moving image in the Asynchronous Mode.

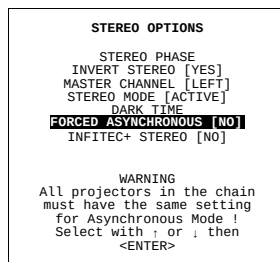
By using the Forced Asynchronous menu, the projector is forced into the Asynchronous Mode, giving the best result when projecting a non-moving image.

#### How to Activate Forced Asynchronous?

1. Push the cursor key ↑ or ↓ to highlight *Forced Asynchronous*. (menu 7-146)
2. Press **ENTER** to toggle between [Yes] or [No].

|     |                                                                                                                                                                                 |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Yes | The Projector will always run in Asynchronous Mode, projecting the image at 120Hz.                                                                                              |
| No  | When the IG provides a signal within the range from 96Hz to 108Hz, the projector will run Synchronous with the IG, if not the Projector will run in Asynchronous Mode (=120Hz). |

- Press **EXIT** to return to the *Stereo Options* menu.



Menu 7-146

### 7.6.8 Infitec+ (Optional)

#### Barco Infitec+

Barco Infitec+ is the latest stereo technology, it uses high-quality color filtering technology.

Barco Infitec+ delivers superior stereo separation without ghosting, with full freedom of motion, independent of head tilt.

The Galaxy SXGA+ can be delivered with the **Passive Infitec+** or the **Active Infitec+** option.

#### Active Infitec+ (Optional)

The optional Active Infitec+ built-in technology allows to produce excellent stereoscopic images with a single Galaxy+ projector.

As the incorporated Active Infitec+ capability can be switched 'On' and 'Off', this solution offers a high level of multi-functionality.

It can be used for applications where active stereo (without Infitec+) is preferred, or with the Active Infitec+ disabled, even to project high brightness images in mono mode.

#### Passive Infitec+ (Optional)

The optional Passive Infitec+ built-in technology allows to produce excellent stereoscopic images with 2 Galaxy+ projector.

As the incorporated Passive Infitec+ capability can be switched 'On' and 'Off', this solution offers a high level of multi-functionality.

It can be used for applications where active stereo (without Infitec+) is preferred, or with the Passive Infitec+ disabled, even to project high brightness images in mono mode.



Depending on the option installed, the menu item *INFITEC+ STEREO* will enable/disable the **Passive Infitec+** or the **Active Infitec+**.

#### What is done?

This menu is used to enable or disable the Infitec+.

The Infitec+ setting is saved with the selected source file.

#### How to Activate Infitec+?

- Push the cursor key ↑ or ↓ to highlight *Infitec+ Stereo*. (menu 7-147)
- Press **ENTER** to toggle between [Yes] or [No].

|     |                                     |
|-----|-------------------------------------|
| Yes | Active/Passive Infitec+ is enabled  |
| No  | Active/passive Infitec+ is disabled |

The following message will be displayed for approximately 30 seconds:

- When switching the Infitec+ 'On' or 'Off'.
- When selecting a source file with the Infitec+ enabled.
- When starting up, or shutting down, a projector with a source file with the Infitec+ enabled. (menu 7-148)

3. Press **EXIT** to return to the *Stereo Options* menu.

```
STEREO OPTIONS

STEREO PHASE
INVERT STEREO [YES]
MASTER CHANNEL [LEFT]
STEREO MODE [ACTIVE]
DARK TIME
FORCED ASYNCHRONOUS [NO]
INFITEC+ STEREO [NO]

WARNING
All projectors in the chain
must have the same setting
for Asynchronous Mode !
Select with ; or , then
<ENTER>
```

Menu 7-147

```
MESSAGE

Please wait
moving wheel for
INFITEC+

<EXIT> to return
```

Menu 7-148



## 8. INSTALLATION MODE

### Overview

- Installation Mode Overview
- Starting Up Installation
- Input Slots
- No Signal
- Lens Adjustment
- Changing the Menu Position
- 800–Peripheral
- Configuration
- OSD Color
- Internal Patterns

### 8.1 Installation Mode Overview

---

#### Installation Mode Overview

- Input Slots
- No Signal
  - Color [Blue/Black]
  - Shutdown [On/Off]
  - Shutdown Time
- Lens
  - Zoom/Focus
  - Shift
- Menu Position [Center/Edges]
- 800 Peripheral
  - Output Module [Standard/5 Cable]
  - Infrared [PPM/RC5]
- Configuration
  - Front /Table
  - Front / Ceiling
  - Rear / Table
  - Rear / Ceiling
- OSD Color
  - Red
  - Green
  - Yellow
- Internal Patterns
  - Outline
  - Hatch
  - Color Bars
  - Multiburst
  - Checker Board
  - Purity
  - Page Char
  - Alpha-Numeric Chars
  - Character Sets

### 8.2 Starting Up Installation

---

#### How to Start Up Installation?

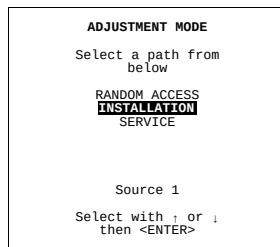
1. Press **ADJUST** or **ENTER** key to start up the *Adjustment Mode*.

## 8. Installation Mode

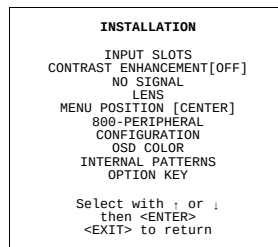
The *Adjustment Mode* menu will be displayed.

2. Push the cursor key ↑ or ↓ to highlight *Installation*. (menu 8-1)
3. Press **ENTER** to select.

The *Installation* menu will be displayed. (menu 8-2)



Menu 8-1



Menu 8-2

### Overview of the different settings of the Installation menu

- Input slots: to set up the input priority
- No signal: selection of a black or blue background color
- Lens: to adjust the zoom/focus and the horizontal/vertical shift of the lens
- Menu Position: to position the menu (picture settings: contrast, ...) in the center or at the edge of the screen
- 800 Peripheral: to select the type of output module and communication code used in the RCVDS 05
- Configuration: to set the projector configuration settings
- OSD color: to change the color of the highlighted item
- Internal Patterns: selection of different patterns

## 8.3 Input Slots

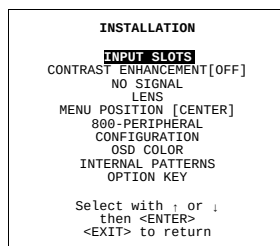
### What can be done?

The input configuration of the variable inputs is shown in the *Input slots* menu.

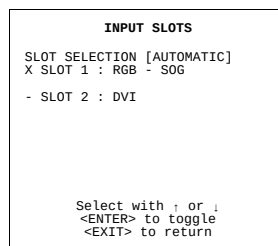
### How to change the Input Slots Settings?

1. Push the cursor key ↑ or ↓ to highlight *Input Slots*. (menu 8-3)
2. Press **ENTER** to select.

The *Input Slots* menu will be displayed. (menu 8-4)



Menu 8-3



Menu 8-4



The indication in front of the digit means:

X : Valid Signal connected to the input.

- : No Valid Signal connected to the input.

### How to change the Slot Selection?

1. Push the cursor key ↑ or ↓ to highlight *Slot Selection*.

2. Press **ENTER** to toggle between [AUTOMATIC] or [MANUAL].

**Note:** The default setting for the Slot Selector is [AUTOMATIC].

|             |                                                                                                                                                                                                             |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [AUTOMATIC] | The projector will scan the inputs one by one, if one source is found, this source will be projected, if different sources are found the priority is as follow (Input 1: 5 Cable Input, Input 2: Computer). |
| [MANUAL]    | The user will select the desired input.                                                                                                                                                                     |

### Possible results for the fixed inputs (1&2)

| Source     | Indication                                                                                                      |
|------------|-----------------------------------------------------------------------------------------------------------------|
| RGB analog | RGB-SS [CS OR HS&VS] : Separate Sync is Composite Sync or Horizontal & Vertical Sync<br>RGB-SOG : Sync On Green |
| DVI        | DVI                                                                                                             |

### What if a switcher is connected to the projector?

If a RCVDS (switched on) or VS05 is connected to the projector, it will be also indicated on the menu by adding +800 peripheral.

If no 800 peripheral indication is made on the menu, there are still two possibilities, no RCVDS or VS05 connected or RCVDS is switched off.

When a 800 peripheral is connected to the projector, the input slots are not accessible with the cursor key to toggle their function.

## 8.4 No Signal

### Overview

- Starting Up No Signal
- Changing the Background Color
- Changing the Shutdown Setting
- Changing the Shutdown Time Setting

### 8.4.1 Starting Up No Signal

#### How to Start Up No Signal?

1. Push the cursor key ↑ or ↓ to highlight *No Signal*. (menu 8-5)
2. Press **ENTER** to select.

The *No Signal* menu will be displayed. (menu 8-6)

|                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INSTALLATION</b><br>INPUT SLOTS<br>CONTRAST ENHANCEMENT[OFF]<br><b>NO SIGNAL</b><br>LENS<br>MENU POSITION [CENTER]<br>800-PERIPHERAL<br>CONFIGURATION<br>OSD COLOR<br>INTERNAL PATTERNS<br>OPTION KEY<br><br>Select with ↑ or ↓<br>then <ENTER><br><EXIT> to return |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Menu 8-5

|                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>NO SIGNAL</b><br>COLOR [BLUE]<br>SHUTDOWN [OFF]<br>SHUTDOWN TIME 0 MIN<br><br>Select with ↑ or ↓<br>then <ENTER><br><EXIT> to return |
|-----------------------------------------------------------------------------------------------------------------------------------------|

Menu 8-6

### 8.4.2 Changing the Background Color

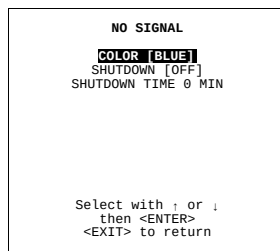
#### What can be done?

When no source signal is present a Blue or Black background color will be displayed.

#### How to Change the Background Color?

1. Push the cursor key ↑ or ↓ to highlight *Color*. (menu 8-7)

2. Press **ENTER** to toggle between the [Blue] or [Black] Background Color Setting.



Menu 8-7

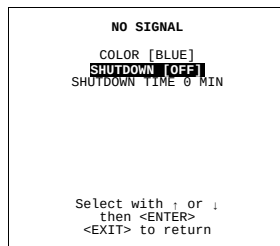
### 8.4.3 Changing the Shutdown Setting

#### What can be done?

Activating the Shutdown Setting will shut down the projector according to the Shutdown Time Setting.

#### How to change the Shutdown Setting?

1. Push the cursor key ↑ or ↓ to highlight *Shutdown*. (menu 8-8)
2. Press **ENTER** to toggle the Shutdown Setting [OFF] or [ON].



Menu 8-8

### 8.4.4 Changing the Shutdown Time Setting



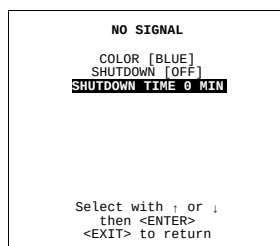
In case Shutdown is set to [OFF] this item will be grayed out.

#### What can be done?

This Shutdown Time can be set between 5 min. and 60 min.

#### How to Change the Shutdown Time Setting?

1. Push the cursor key ↑ or ↓ to highlight *Shutdown Time*. (menu 8-9)
2. Push the cursor key ↑ or ↓ to change the digits.  
Or,  
Enter the digits directly with the digit keys on the RCU.



Menu 8-9

## 8.5 Lens Adjustment

### Overview

- Starting Up Lens Adjustment
- Lens Zoom/Focus Adjustment
- Lens Shift Adjustment

### 8.5.1 Starting Up Lens Adjustment

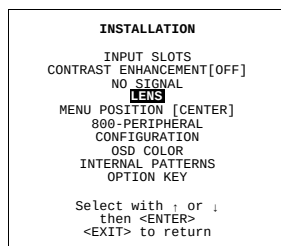
#### What can be done?

This will adjust the zoom, focus, horizontal shift and vertical shift settings of the lens.

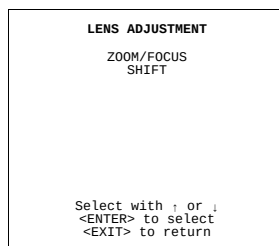
#### How to Start Up Lens Adjustment?

1. Push the cursor key ↑ or ↓ to highlight *Lens*. (menu 8-10)
2. Press **ENTER** to select.

The *Lens Adjustment* menu will be displayed. (menu 8-11)



Menu 8-10



Menu 8-11

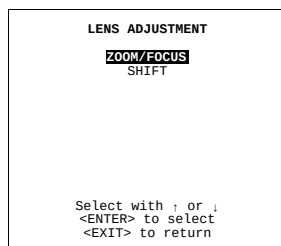
### 8.5.2 Lens Zoom/Focus Adjustment

#### How to adjust Zoom/Focus?

1. Push the cursor key ↑ or ↓ to highlight *Zoom/Focus*. (menu 8-12)
2. Press **ENTER** to select.

The *Zoom/Focus Adjustment* menu will be displayed. (image 8-1)

3. Push the cursor key ↑ or ↓ to zoom and ← or → to focus the image.
4. Press **EXIT** to return to the *Lens Adjustment* menu.



Menu 8-12

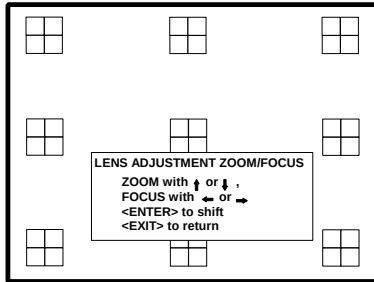
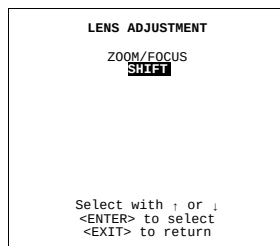


Image 8-1  
Zoom/Focus adjustment menu

### 8.5.3 Lens Shift Adjustment

#### How to adjust the Horizontal/Vertical Shift?

1. Push the cursor key ↑ or ↓ to highlight *Shift*. (menu 8-13)
2. Press **ENTER** to select.  
The *Shift Adjustment* menu will be displayed. (image 8-2)
3. Push the cursor key ↑ or ↓ to shift the image up or down and ← or → to shift the image left or right.
4. Press **EXIT** to return to the *Lens Adjustment* menu.
5. Press **EXIT** to return to the *Installation* menu.



Menu 8-13

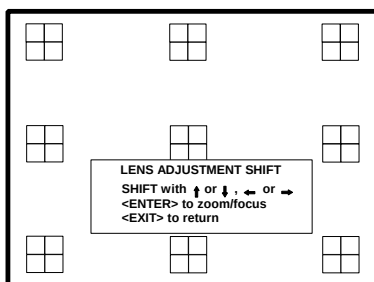


Image 8-2

## 8.6 Changing the Menu Position

---

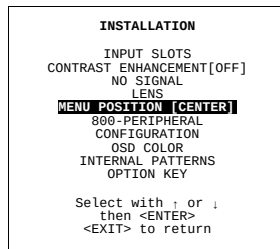
#### What can be done?

The Menu can be displayed in the bottom right corner or the center of the displayed image.

#### How to change the Menu Position?

1. Push the cursor key ↑ or ↓ to highlight *Menu Position*. (menu 8-14)
2. Press **ENTER** to toggle between [CENTER] or [EDGES].

|          |                                                               |
|----------|---------------------------------------------------------------|
| [EDGES]  | The Menu will always be displayed in the bottom right corner. |
| [CENTER] | The Menu will always be in the middle of the image.           |



Menu 8-14

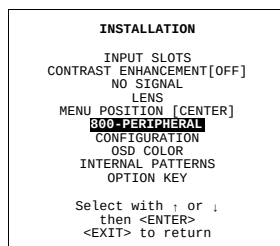
## 8.7 800-Peripheral

### 8.7.1 Starting Up 800-Peripheral

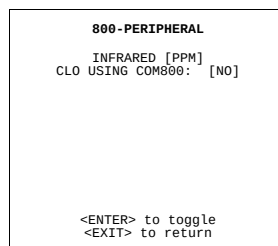
#### How to Start Up 800-Peripheral?

1. Push the cursor key ↑ or ↓ to highlight *800-Peripheral*. (menu 8-15)
2. Press **ENTER** to select.

The *800-Peripheral* menu will be displayed. (menu 8-16)



Menu 8-15



Menu 8-16

### 8.7.2 Defining the Communication Protocol of the RCVDS05

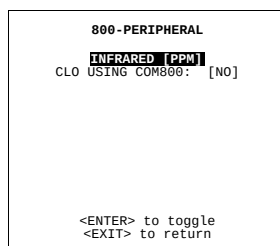
#### Which protocols are available ?

When a RCVDS05 is connected to the projector, the type of communication protocol used to communicate with the peripheral has to be defined in the 800 peripheral menu.

- PPM
- RC5

#### Defining the Communication Protocol

1. Push the cursor key ↑ or ↓ to highlight *Infrared*. (menu 8-17)
2. Press **ENTER** to toggle between [PPM] or [RC5].



Menu 8-17

### 8.7.3 COM800 Protocol

#### What can be done?

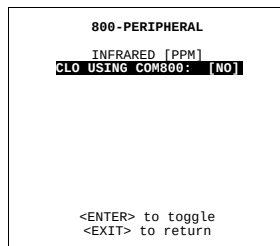
CLO and Dynacolor™ can be activated in a linked system setup using the RS232 Protocol + Ports, or by using the COM800 Protocol + Ports.



By using the COM800 Protocol + Ports, the RS232 Ports can be used for a RS232 linked setup, CLO and Dynacolor™ are received through the COM800 Ports, general RS232 commands are received through the RS232 Ports.

#### How to change the COM800 Protocol Activation?

1. Push the cursor key ↑ or ↓ to highlight CLO using COM800: [NO]. (menu 8-18)
2. Press **ENTER** to toggle between [NO] or [YES].



Menu 8-18

## 8.8 Configuration

#### What can be done?

The way of physical installation of the projector can be defined to the projector.

The following installation configurations are possible:

- Front / Table
- Front / Ceiling
- Rear / Table
- Rear / Table

#### How to set Configuration?

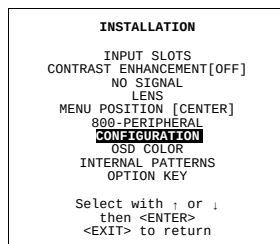
1. Push the cursor key ↑ or ↓ to highlight *Configuration*. (menu 8-19)
2. Press **ENTER** to select.

The configuration menu will be displayed. (menu 8-20)

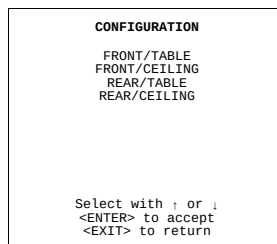
3. Push the cursor key ↑ or ↓ to highlight the desired configuration e.g. Front / Table.
4. Press **ENTER** to confirm.

The Projector will display the image according to the selected configuration.

5. Press **EXIT** to return to the *Installation* menu.



Menu 8-19



Menu 8-20

## 8.9 OSD Color



OSD = On Screen Display

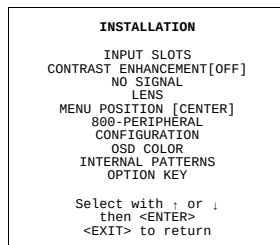
### What can be done?

The highlighted items in the menu can be displayed in:

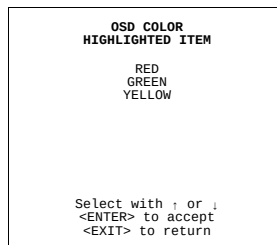
- Red
- Green
- Yellow

### How to change the OSD Color ?

1. Push the cursor key ↑ or ↓ to highlight *OSD Color*. (menu 8-21)
2. Press **ENTER** to select.  
The OSD color menu will be displayed. (menu 8-22)
3. Push the cursor keys to select the desired color.
4. Press **ENTER** to select.
5. Press **EXIT** to return to the *Installation Mode* menu.



Menu 8-21



Menu 8-22

## 8.10 Internal Patterns

### What can be done?

The projector is equipped with different internal patterns which can be used for measurement purposes.

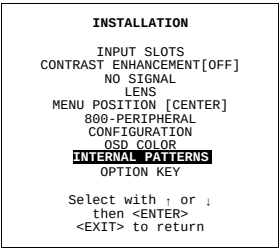
### Available patterns

- Outline
- Hatch
- Color bars
- Multiburst
- Checker board
- Purity
- Page Char
- Alpha numeric char
- Character Sets

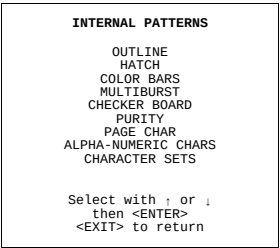
### How to select an Internal Patterns?

1. Push the cursor key ↑ or ↓ to highlight *Internal Patterns*. (menu 8-23)
2. Press **ENTER** to select.  
The internal patterns menu will be displayed. (menu 8-24)
3. Push the cursor key ↑ or ↓ to select the desired pattern.
4. Press **ENTER** to select.

The selected pattern will be displayed.



Menu 8-23



Menu 8-24

## 9. SERVICE MODE

### 9.1 Service Mode Overview

---

#### Service Mode Overview

- Identification
- Change Password
- Change Proj. Address
  - Projector Address
  - Common Address (RC5)
  - Common Address (PPM)
- Change Baudrate PC
- Lamp
  - Constant Light Output [Master/Slave]
  - Mode [Normal/Economic]
- Infitec-Wheel Index
- Infitec-Wheel Preset
- Barco Logo
  - Status [On/Off]
  - Background [On/Off]
  - Shift
  - Hot Key [Text/Off]
- Preset Input Balance Warp 1
- Preset Input Balance Warp 2
- Electronic Convergence
- Diagnosis
  - I<sup>2</sup>C
  - Formatter
  - SMPS
- DynaColor
  - Color Coordinates
  - Exec. Linked Dynacolor

### 9.2 Build-up

---

#### Build-up

The service menu is build-up in two parts which are connected together with the 'more' item. If the desired item is not in the list of the displayed menu, select 'more' with the cursor key and push ENTER to display the other items in the service menu.

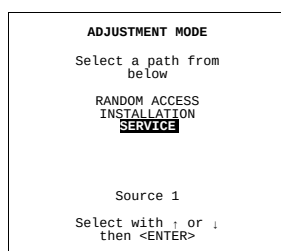
### 9.3 Starting Up Service

---

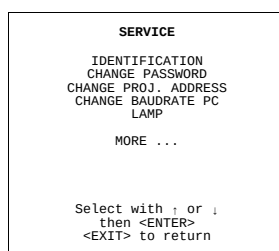
#### How to Start Up Service?

1. Press **ADJUST** or **ENTER** key to start up the *Adjustment Mode*.  
The *Adjustment Mode* menu will be displayed.
2. Push the cursor key ↑ or ↓ to highlight *Service*. (menu 9-1)
3. Press **ENTER** to select.

The *Service* menu will be displayed. (menu 9-2)



Menu 9-1



Menu 9-2



Some items in the *Service* menu are password protected (when the password function is active). Enter the password to continue. All other password protected items are now available if you stay in the adjustment mode.

## 9.4 Identification Screen

### What can be seen on the Identification Screen?

The title page screen shows the general information of the projector.

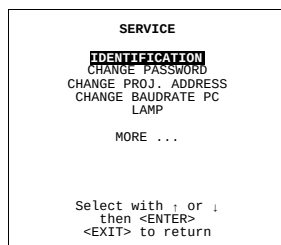
The following items will be displayed:

- Type of projector
- Proj. address
- Software version
- Configuration:
  - Front / Table
  - Front / Ceiling
  - Rear / Table
  - Rear / Ceiling
- Baudrate PC: transfer speed for communication with an IBM PC (or compatible) or MAC. The baudrate of the projector must be the same as the baudrate of the connected computer. When there is a difference, consult 'Change Baudrate PC' in this chapter.
- Text: Indicates if the on screen text information (picture setting textboxes: contrast,...) is enabled or not
- Projector Serial number: indicates the fabrication number of the projector. This number can be useful when calling for technical assistance.
- Projector Run Time: gives the total run time since the first start up. All projectors leave the factory with a run time of approximately 24 hours.

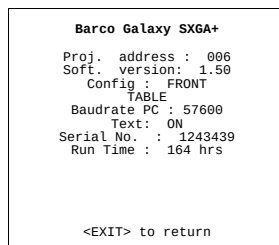
### How to display the Identification Screen?

1. Push the cursor key ↑ or ↓ to highlight *Identification*. (menu 9-3)
2. Press **ENTER** to select.

The Identification Screen will be displayed. (menu 9-4)



Menu 9-3



Menu 9-4

## 9.5 Change Password

### How to Change the Password?

1. Push the cursor key ↑ or ↓ to highlight *Change Password*. (menu 9-5)
2. Press **ENTER** to select.

The *Change Password* menu will be displayed. (menu 9-6)

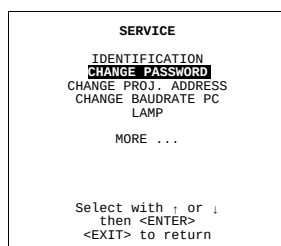
4 ' \_ ' characters are displayed. A new password can be entered with the digit keys of the RCU or local keypad. Every time a digit is entered, a 'X' appears on the screen. The confirm new password is still grayed out.

3. Do you want to activate the new password?  
If yes, Press **ENTER** to confirm the new password.

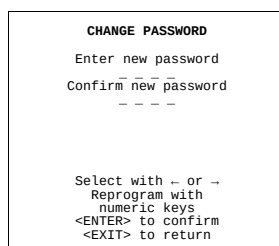
4 'x' characters are displayed in the confirm new password area. Key in your password again with the digit keys of the RCU or the local keypad.

If the confirm new password entry is the same as the entered new password, the password is changed.

If no, Press **EXIT** if no changes have to be made.



Menu 9-5



Menu 9-6

## 9.6 Change Projector Address

### What can done?

Within the Change Projector Address menu, following items can be changed:

- Projector Address
- Common Address



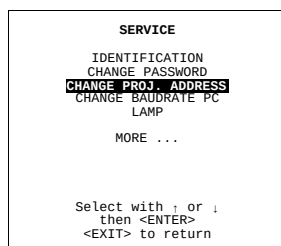
For more information on Common and Projector Address see 'Controlling the projector' in the chapter 'Getting Started'.

### 9.6.1 Starting Up Change Projector Address

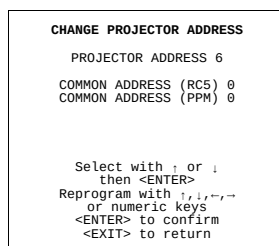
#### How to Start Up Change Projector Address?

1. Push the cursor key ↑ or ↓ to highlight *Change Proj Address*. (menu 9-7)
2. Press **ENTER** to select.

The *Change Projector Address* menu will be displayed. (menu 9-8)



Menu 9-7



Menu 9-8

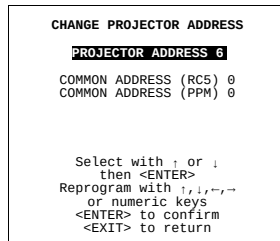
### 9.6.2 Changing the Projector Address

#### How to Change the Projector Address?

1. Push the cursor key ↑ or ↓ to highlight *Projector Address*. (menu 9-9)
2. Press **ENTER** to select.

The actual address is filled in.

The first digit is highlighted.



Menu 9-9

#### How to Enter the new Projector Address?

1. Enter the digits with the digit keys on the RCU or local keypad.  
Or,  
push the cursor keys ← or → to select a digit and change the value by pushing the cursor key ↑ or ↓ until the new value is reached.



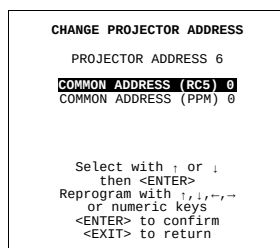
Continue with the other digits on the same way. The individual address must be between 0 and 255.

In a Linked CLO and/or Dynacolor™ setup a maximum of 14 projectors can be linked, all projectors must have a different projector address between 0 and 13.

### 9.6.3 Changing the Common Address

#### How to Change the Common Address?

1. Push the cursor key ↑ or ↓ to highlight the active *Common Address* e.g. (RC5). (menu 9-10)
2. Press **ENTER** to select.



Menu 9-10

#### Entering the new Common Address

1. Enter with the digit keys on the RCU or the local keypad  
Or,  
pushing the cursor key ↑ or ↓ until the new value is reached.



Only addresses between 0 and 1 are valid.

## 9.7 Change Baudrate PC

### What can be done?

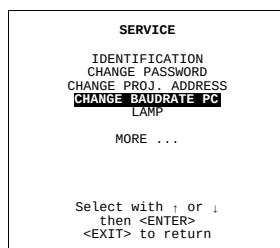
The baudrate of the projector must be the same as the baudrate of the connected computer. Use this menu to change the baudrate of the projector.

The following baud rates are available:

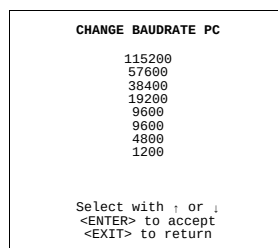
- 115200
- 57600
- 38400
- 19200
- 9600
- 4800
- 1200

### How to Change Baudrate PC?

1. Push the cursor key ↑ or ↓ to highlight *Change Baudrate PC*. (menu 9-11)
2. Press **ENTER** to select.  
The *Change Baudrate PC* menu will be displayed.  
The actual baudrate will be highlighted. (menu 9-12)
3. Push the cursor key ↑ or ↓ to highlight the desired Baudrate.
4. Press **ENTER** to accept the selected Baudrate.



Menu 9-11



Menu 9-12

## 9.8 Lamp Menu

### Overview

- Starting Up the Lamp Menu
- Constant Light Output (CLO)
- Linked CLO
- Lamp Mode
- Target CLO Lumens
- Lamp Runtime Warning

### 9.8.1 Starting Up the Lamp Menu

#### What can be done?

All information about the lamp is stored inside the lamp house and can be displayed via the projector software, no information can be changed.

Following Lamp Information can be consulted:

|                |                                               |
|----------------|-----------------------------------------------|
| Serial number  | Unique serial number of the lamp              |
| Article number | Article number of the lamp                    |
| Run time       | Total time the lamp is used in this projector |

|                    |                                                                                                                                                                |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remaining run time | Time left before the lamp must be replaced. Using the lamp longer than the maximum run time may damage the projector                                           |
| Number of strikes  | Total times the lamp is started up                                                                                                                             |
| Z-axis             | Indication to adjust the Z-axis of the lamp, for more information see 'Re-adjusting the lamp position in the lamp casing' in chapter 'Installation Guidelines' |

Table 9-1  
Lamp Information

Following Lamp Settings can be changed:

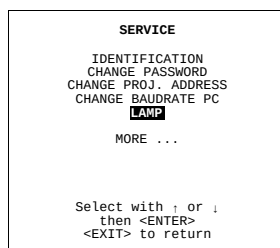
- Constant Light Output
- (Lamp) Mode

### How to Start Up the Lamp Menu?

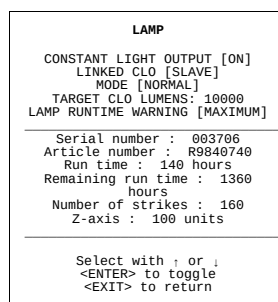
1. Push the cursor key ↑ or ↓ to highlight *Lamp*. (menu 9-13)

2. Press **ENTER** to select.

The Lamp Menu will be displayed. (menu 9-14)



Menu 9-13



Menu 9-14

## 9.8.2 Constant Light Output (CLO)

### What can be done?

Projectors in a multichannel setup may have different Lamp Runtimes, this will result in a difference in light output between the projectors.

Within this menu it is possible to track and maintain the brightness levels of the projectors, the projectors will deliver a Constant Light Output = CLO.

In a multichannel setup (max 14.) it is possible to link the CLO-values of all projectors, this is done by means of a master-slave projector setup. One projector will act as master, all slave-projectors will track and maintain the CLO setting of this master-projector.



**In a Linked CLO and/or Dynacolor™ setup a maximum of 14 projectors can be linked, all projectors must have a different projector address between 0 and 13 and all projectors must have the same baudrate.**

**The CLO setting of one projector must be in the master position, all others must be in the slave position.**

**In a setup with one single projector, CLO will not work at all, when this projector is set in the slave position.**

### How to Connect the Master-Slave Projectors?

1. Connect a RS232 Terminator (Order number **Z3498823**) to the 'RS232 In' Input of the first projector in the chain.
2. Connect the RS232 Output of the first projector in the chain to the RS232 Input of the next projector.
3. Continue this daisy chain connection to connect all projectors in the set up.

### How to Change the Constant Light Output Setting?

1. Push the cursor key ↑ or ↓ to highlight *Constant Light Output*. (menu 9-15)

2. Press **ENTER** to toggle CLO [On] or [Off].

```

LAMP
CONSTANT LIGHT OUTPUT [ON]
LINKED CLO [SLAVE]
MODE [NORMAL]
TARGET CLO LUMENS: 10000
LAMP RUNTIME WARNING [MAXIMUM]

Serial number : 003706
Article number : R9840740
Run time : 140 hours
Remaining run time : 1360
hours
Number of strikes : 160
Z-axis : 100 units

Select with ↑ or ↓
<ENTER> to toggle
<EXIT> to return

```

Menu 9-15

### 9.8.3 Linked CLO



Linked CLO will be grayed out when *Constant Light Output* is set to Off.

#### How to change the Linked CLO setting?

1. Push the cursor key ↑ or ↓ to highlight *Linked CLO*. (menu 9-16)
2. Press **ENTER** to toggle between the different Linked CLO settings.

Following CLO Settings are available:

|          |                                                                               |
|----------|-------------------------------------------------------------------------------|
| [MASTER] | Master projector to control the CLO in a chain of projectors                  |
| [SLAVE]  | Follows the master projector to adjust the CLO                                |
| [OFF]    | To use the CLO functionality in case of a single, stand alone projector setup |

Table 9-2  
CLO Settings

```

LAMP
CONSTANT LIGHT OUTPUT [ON]
LINKED CLO [SLAVE]
MODE [NORMAL]
TARGET CLO LUMENS: 10000
LAMP RUNTIME WARNING [MAXIMUM]

Serial number : 003706
Article number : R9840740
Run time : 140 hours
Remaining run time : 1360
hours
Number of strikes : 160
Z-axis : 100 units

Select with ↑ or ↓
<ENTER> to toggle
<EXIT> to return

```

Menu 9-16

### 9.8.4 Lamp Mode

#### What can be done?

The Lamp can be set to the normal or economic mode.



This menu item is grayed out on the R9040355 (Galaxy 4 Long Life +).

#### How to change the Lamp Mode Setting?

1. Push the cursor key ↑ or ↓ to highlight *Mode*. (menu 9-17)
2. Press **ENTER** to toggle between the different Mode settings.

## 9. Service Mode

Following Mode Settings are available:

|            |                      |
|------------|----------------------|
| [NORMAL]   | Normal Light Output  |
| [ECONOMIC] | Reduced Light Output |

Table 9-3  
(Lamp) Mode Settings

|                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAMP</b><br>CONSTANT LIGHT OUTPUT [ON]<br>LINKED CLO [SLAVE]<br><b>MODE [NORMAL]</b><br>TARGET CLO LUMENS: 10000<br>LAMP RUNTIME WARNING [MAXIMUM]<br>Serial number : 003706<br>Article number : R9840740<br>Run time : 140 hours<br>Remaining run time : 1360<br>hours<br>Number of strikes : 160<br>Z-axis : 100 units<br>Select with ↑ or ↓<br><ENTER> to toggle<br><EXIT> to return |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Menu 9-17

### 9.8.5 Target CLO Lumens

#### How to change the Target CLO Lumens Setting?

1. Push the cursor key ↑ or ↓ to highlight *Target CLO Lumens*. (menu 9-18)
2. Press **ENTER** to activate the digits.
3. Use the numeric keys and/or cursor keys to set Target CLO Lumens to the desired value.  
**Note:** It is not possible to set the Target CLO Lumens to a value, higher than the maximum default value.

These are the maximum default Target CLO Lumens values for the Galaxy SXGA+ series.

| Galaxy SXGA+ Projector                         | Productnumber | Maximum default Target CLO Lumens value |
|------------------------------------------------|---------------|-----------------------------------------|
| Galaxy 6 Classic+ (Classic)                    | R9040360      | 6000 lumens                             |
| Galaxy 6 Classic+ in Contrast Enhancement mode | R9040360      | 4700 lumens                             |
| Galaxy 12 HB+ (High Brightness)                | R9040370      | 9500 lumens                             |
| Galaxy 12 HB+ in Contrast Enhancement mode     | R9040370      | 7500 lumens                             |

4. Press **ENTER** to confirm.

|                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAMP</b><br>CONSTANT LIGHT OUTPUT [ON]<br>LINKED CLO [SLAVE]<br>MODE [NORMAL]<br><b>TARGET CLO LUMENS: 10000</b><br>LAMP RUNTIME WARNING [MAXIMUM]<br>Serial number : 003706<br>Article number : R9840740<br>Run time : 140 hours<br>Remaining run time : 1360<br>hours<br>Number of strikes : 160<br>Z-axis : 100 units<br>Select with ↑ or ↓<br><ENTER> to toggle<br><EXIT> to return |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Menu 9-18

## 9.8.6 Lamp Runtime Warning

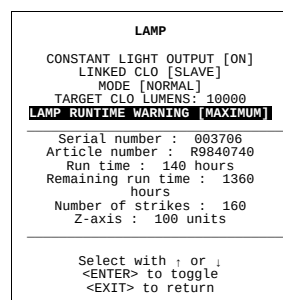
### What can be done?

The Lamp Runtime Warning of the projector can work in one of the following modes:

|         |                                                                                                                |
|---------|----------------------------------------------------------------------------------------------------------------|
| Maximum | The Lamp Runtime is displayed when the lamp is operated longer than 1000 or 1500 (depending on the lamp type). |
| Typical | The Lamp Runtime is displayed when the lamp is operated longer than 800 or 1200 (depending on the lamp type).  |

### Lamp Runtime Warning

1. Push the cursor key ↑ or ↓ to highlight *Target CLO Lumens*. (menu 9-19)
2. Press **ENTER** to toggle between Maximum or Typical mode.
3. Press **EXIT** to return to the *Service* menu.



Menu 9-19

## 9.9 Infitec-Wheel Index



**CAUTION:** Changing these settings may seriously affect the performance of the projector.



**CAUTION:** This adjustment can only be done by a Barco qualified service technician.

### Infitec-Wheel Index

Do not change the Infitec-Wheel Index, always use the Stereo Phase adjustment to adjust the projector for a perfect Stereo Image ().

## 9.10 Infitec-Wheel Preset

### Infitec-Wheel Preset

This menu item will reset the Infitec-Wheel Index to the factory preset.

## 9.11 Barco Logo

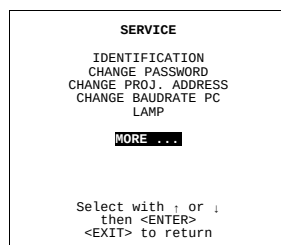
### 9.11.1 Starting Up Logo

#### What can be done?

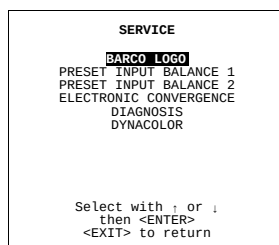
The Barco can be added to the projected image, in overlay or on a background, on any place on the screen.

## How to Start Up theBarco Logo?

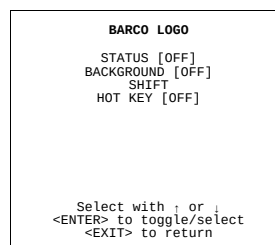
1. Push the cursor key ↑ or ↓ to highlight *More*. (menu 9-20)
2. Press **ENTER** to select.  
The other items in the *Service* menu will be displayed.
3. Push the cursor key ↑ or ↓ to highlight *Barco Logo*. (menu 9-21)
4. Press **ENTER** to select.  
The *Barco Logo* menu will be displayed. (menu 9-22)



Menu 9-20



Menu 9-21



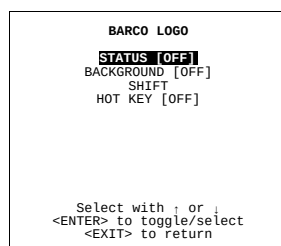
Menu 9-22

## 9.11.2 Barco Logo Status

### How the Change the Barco Logo Status Setting?

1. Push the cursor key ↑ or ↓ to highlight *Status*. (menu 9-23)
2. Press **ENTER** to toggle Status [ON] or [OFF].

|       |                                                |
|-------|------------------------------------------------|
| [ON]  | Barco Logo will be displayed on the screen     |
| [OFF] | Barco Logo will NOT be displayed on the screen |



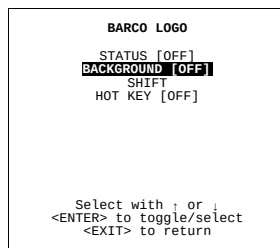
Menu 9-23

## 9.11.3 Barco Logo Background

### How the Change the Barco Logo Background Setting?

1. Push the cursor key ↑ or ↓ to highlight *Background*. (menu 9-24)
2. Press **ENTER** to toggle Background [ON] or [OFF].

|       |                                                     |
|-------|-----------------------------------------------------|
| [ON]  | Barco logo will be displayed on a black background  |
| [OFF] | Barco logo will be displayed without any background |

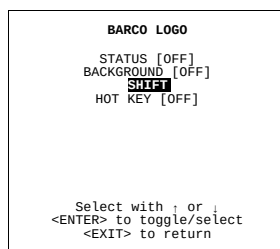


Menu 9-24

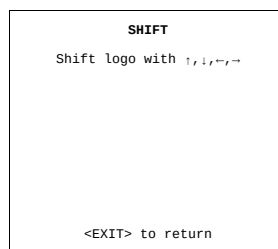
### 9.11.4 Shift Barco Logo

#### How the Adjust the Barco Logo Position?

1. Push the cursor key ↑ or ↓ to highlight *Shift*. (menu 9-25)
2. Press **ENTER** to select.  
The Shift Adjustment menu will be displayed. (menu 9-26)
3. Use the cursor keys to shift the Barco Logo to the desired position on the screen.
4. Press **EXIT** to return to the *Barco Logo* menu.



Menu 9-25



Menu 9-26

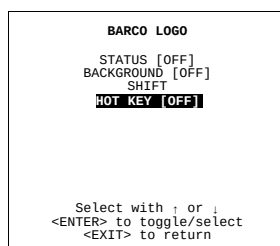
### 9.11.5 Hot Key

#### How to Change the Hot Key Setting?

1. Push the cursor key ↑ or ↓ to highlight *Hot Key*. (menu 9-27)
2. Press **ENTER** to toggle the Hot Key Setting [ON] or [OFF].

|       |                                                                                                                                           |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------|
| [ON]  | The <b>TEXT</b> key on the RCU is used to display or to remove the Barco Logo with one single push on this key (only in operational mode) |
| [OFF] | No key on the RCU is used to display the Barco Logo                                                                                       |

3. Press **EXIT** to return to the *Service* menu.



Menu 9-27

## 9.12 Preset Input Balance 1



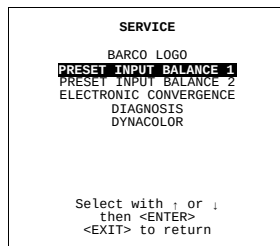
**CAUTION:** Changing these settings may seriously affect the performance of the projector.

### How to Start Up Preset Input Balance?

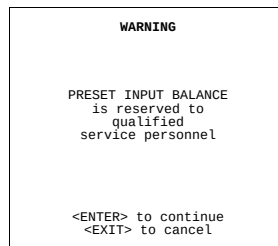
1. Push the cursor key ↑ or ↓ to highlight *Preset Input Balance 1*. (menu 9-28)
2. Press **ENTER** to select.

The following warning will be displayed: (menu 9-29)

Preset input balance is reserved to qualified service personnel. If you are not qualified, press **EXIT** to return to the *Service* menu.



Menu 9-28



Menu 9-29

## 9.13 Preset Input Balance 2



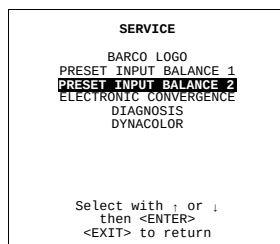
**CAUTION:** Changing these settings may seriously affect the performance of the projector.

### How to Start Up Preset Input Balance 2?

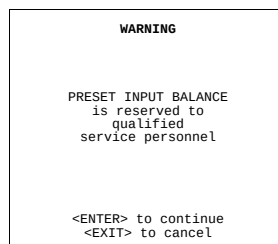
1. Push the cursor key ↑ or ↓ to highlight *Preset Input Balance 2*. (menu 9-30)
2. Press **ENTER** to select.

The following warning will be displayed: (menu 9-31)

Preset input balance is reserved to qualified service personnel. If you are not qualified, press **EXIT** to return to the *Service* menu.



Menu 9-30



Menu 9-31

## 9.14 Electronic Convergence



**CAUTION:** Changing these settings may seriously affect the performance of the projector.



**CAUTION:** This adjustment is best done by a qualified service technician.

### What can be done?

The convergence of the projected image can be adjusted in this menu.

Following Convergence Adjustment Patterns are available:

- Green
- Blue On Green
- Red On Green
- Blue On Red
- Hatch

### How to adjust the Electronic Convergence?

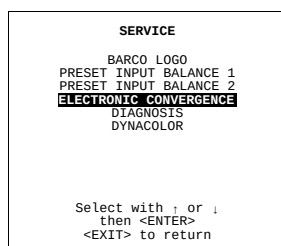
1. Push the cursor key ↑ or ↓ to highlight *Electronic Convergence*. (menu 9-32)
2. Press **ENTER** to select.

The *Convergence* menu will be displayed.

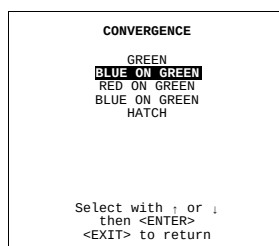
3. Push the cursor key ↑ or ↓ to select the desired Convergence Adjustment Patterns, e.g. Blue on Green. (menu 9-33)

The selected Convergence Adjustment Patterns and Convergence Barscale will be displayed.

4. Use the cursor keys to adjust the Convergence of the projected image.
5. Press **EXIT** to return to the *Convergence* menu.
6. Press **EXIT** to return to *Service* menu.



Menu 9-32



Menu 9-33

## 9.15 Diagnosis

### Overview

- Starting Up Diagnosis
- I<sup>2</sup>C Diagnosis
- Formatter Diagnosis
- SMPS Diagnosis

#### 9.15.1 Starting Up Diagnosis

### What can be done?

Following items can be checked using the Diagnosis menu:

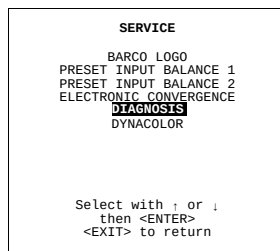
- I<sup>2</sup>C Bus
- Formatter Board
- Switch Mode Power Supply (SMPS) Board

### How to Start Up Diagnosis?

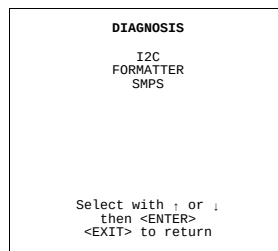
1. Push the cursor key ↑ or ↓ to highlight *Diagnosis*. (menu 9-34)
2. Press **ENTER** to select.

## 9. Service Mode

The *Diagnosis* menu will be displayed. (menu 9-35)



Menu 9-34



Menu 9-35

### 9.15.2 I<sup>2</sup>C Diagnosis

#### What can be done?

This info screen will give an overview of the Data, Command and Address status of the I<sup>2</sup>C controlled IC's (Green box = OK, Red Box = Error, the Box in the printed menu is shown as #).

Following IC's are shown in the I<sup>2</sup>C info screen.

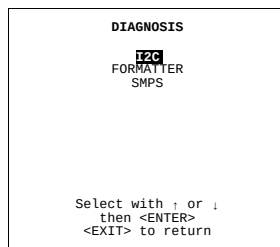
- Motor Driver
- Light Sensor
- Lamp Driver
- Power Supply
- Formatter
- LCD Driver
- Lamp Module

#### How to display the I<sup>2</sup>C Diagnosis screen?

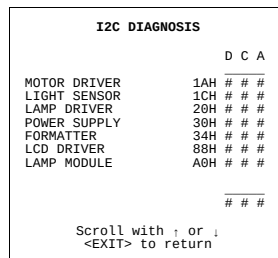
1. Push the cursor key ↑ or ↓ to highlight *I2C*. (menu 9-36)
2. Press **ENTER** to select.

The *I2C* Diagnosis screen will be displayed. (menu 9-37)

3. Press **EXIT** to return to the *Service Mode* menu.



Menu 9-36



Menu 9-37

### 9.15.3 Formatter Diagnosis

#### What can be done?

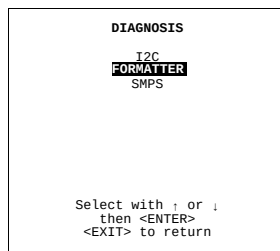
This info screen will give an overview of the status of the Formatter board.

#### How to display the Formatter Diagnosis screen?

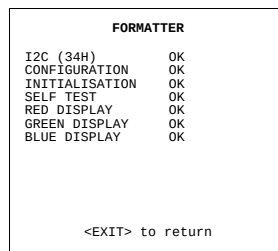
1. Push the cursor key ↑ or ↓ to highlight *Formatter*. (menu 9-38)
2. Press **ENTER** to select.

The *Formatter* Diagnosis screen will be displayed. (menu 9-39)

- Press **EXIT** to return to the *Service Mode* menu.



Menu 9-38



Menu 9-39

#### 9.15.4 SMPS Diagnosis

##### What can be done?

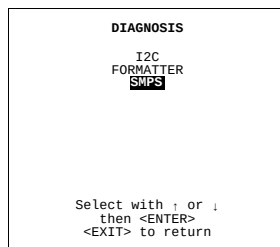
This info screen will give an overview of the status of the Switch Mode Power Supply (SMPS) board.

##### How to display the SMPS Diagnosis screen?

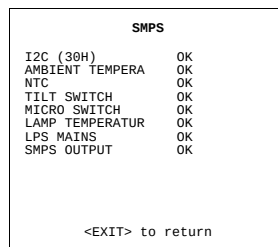
- Push the cursor key ↑ or ↓ to highlight *SMPS*. (menu 9-40)
- Press **ENTER** to select.

The *SMPS* Diagnosis screen will be displayed. (menu 9-41)

- Press **EXIT** to return to the *Service Mode* menu.



Menu 9-40



Menu 9-41

## 9.16 DynaColor™



This menu item is usefully when working with a multichannel setup.



It is advised to use Barco's xRACU control unit to manage the 'linked' DynaColor™ of multiple projectors in a multi-channel setup.



To connect the projectors follow the same guidelines as described in Constant Light Output.



In a Linked CLO and/or Dynacolor™ setup a maximum of 14 projectors can be linked, all projectors must have a different projector address between 0 and 13 and all projectors must have the same baudrate.

### 9.16.1 Standard DynaColor™

#### 9.16.1.1 Introduction to Standard DynaColor™



The Standard DynaColor™ menu items will be grayed out when Infact Stereo is set to 'On' in the Stereo Options menu.

---

#### Standard DynaColor™

DynaColor™ will eliminate channel-to-channel color variations.

How to define color?

The CIE chromaticity diagram is one way to plot the colors the human eye can see.

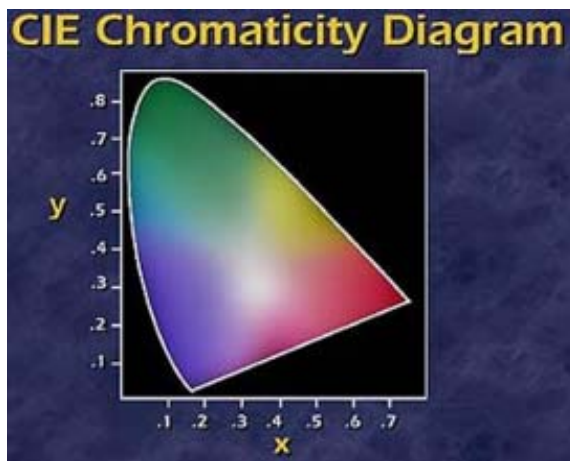


Image 9-1

A projector can only reproduce a certain color gamut within this diagram. This color gamut is defined by the triangle formed by the x, y coordinates of Red Green and Blue. These parameters are used by the DynaColor™ adjustment.

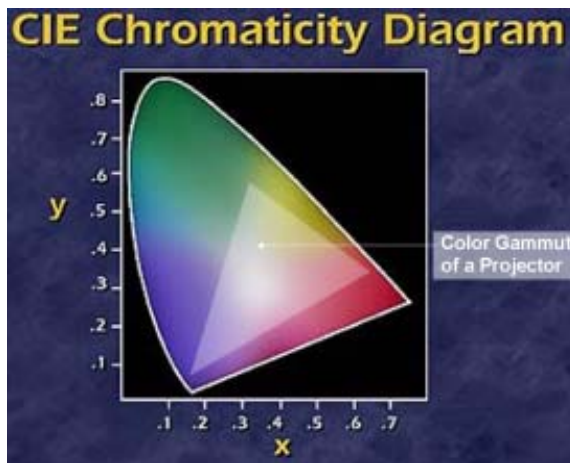


Image 9-2

Due to the tolerance on optical components the x, y values of this color gamut of each projector will differ.

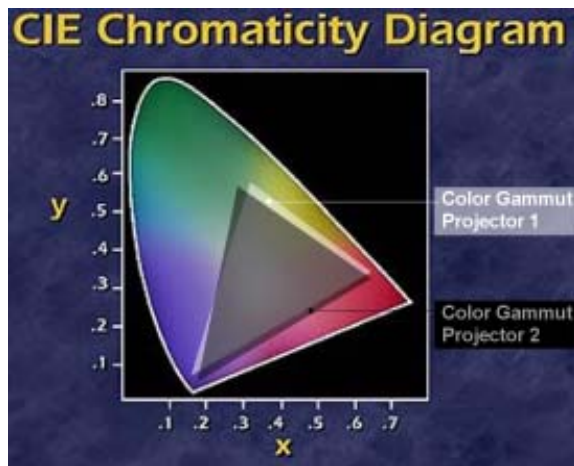


Image 9-3

When working with a multichannel setup, these color differences between different projectors can be smoothed out by matching the color gamuts of the different projectors to a Common Color Gamut.

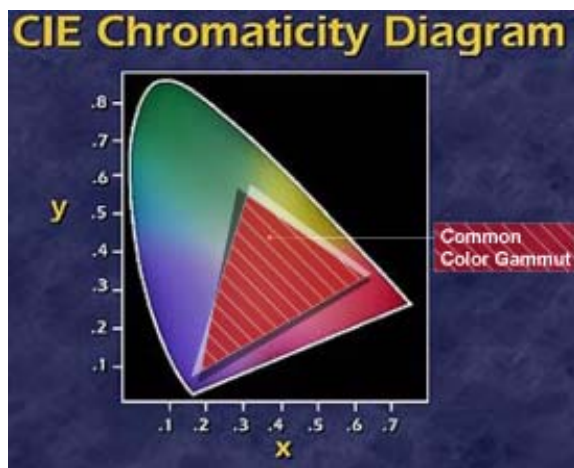


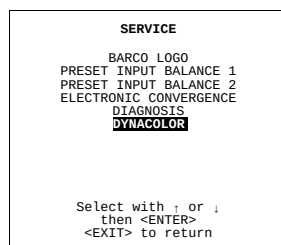
Image 9-4

### 9.16.1.2 Starting Up DynaColor™

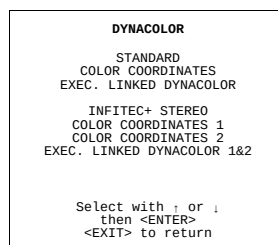
#### How to Start Up DynaColor™?

1. Push the cursor key  $\uparrow$  or  $\downarrow$  to highlight *Diagnosis*. (menu 9-42)
2. Press **ENTER** to select.

The *DynaColor* menu will be displayed. (menu 9-43)



Menu 9-42



Menu 9-43

## 9.16.1.3 Standard Color Coordinates

## Color Coordinates Interface

Following parameters are available in the DynaColor™ interface:

| Measured Values | These are the colors the projector displays when no color changes are made. |
|-----------------|-----------------------------------------------------------------------------|
| Red x, y        | Coordinates for the Red point                                               |
| Green x, y      | Coordinates for the Green point                                             |
| Blue x, y       | Coordinates for the Blue point                                              |
| White x, y      | Coordinates for the White point                                             |
| Red Y           | Red light output                                                            |
| Green Y         | Green light output                                                          |
| Blue Y          | Blue light output                                                           |
| White Y         | Maximum light output = 1                                                    |

| Desired Values | These are the colors you want the projector to display when the status is enabled |
|----------------|-----------------------------------------------------------------------------------|
| Red x, y       | Coordinates for the Red point                                                     |
| Green x, y     | Coordinates for the Green point                                                   |
| Blue x, y      | Coordinates for the Blue point                                                    |
| White x, y     | Coordinates for the White point                                                   |

| Status | Enables or disables DynaColor™ |
|--------|--------------------------------|
|--------|--------------------------------|

## How to use the Color Coordinates menu?

We assume we have a basic setup with 2 projectors, the Dynacolor™ adjustment is done by using only the Dynacolor™ menu:

1. Enable Dynacolor™ on both projectors.
2. Assume the first projector has the following measured values. (menu 9-44)
3. Assume the second projector has the following measured values. (menu 9-45)
4. We start by setting both projectors to the common red coordinate. (image 9-5)  
**Tip:** Draw a quick sketch of both gamuts as a graphical help.
5. Display the internal color bar pattern on both projectors.
6. In the desired values, adjust the red coordinate to a common value for both projectors. (image 9-6)  
**Tip:** The color bar of the adjusted coordinate will no longer be displayed in case the coordinate is not present within the gamut of the adjusted projector e.g. with the desired values for red set to x=660 and y= 318.
7. Select a coordinate that is present in the common gamut e.g. with the desired values for red set to x=633 and y= 328. (image 9-7)
8. Repeat step 5 to 6 for all coordinates on both projectors.

Both projectors will now operate within the same color gamut.

| DYNACOLOR                    |       |       |  |
|------------------------------|-------|-------|--|
| MEASURED                     |       |       |  |
| x                            | y     | Y     |  |
| R: 0.662                     | 0.323 | 0.087 |  |
| G: 0.306                     | 0.682 | 0.846 |  |
| B: 0.125                     | 0.069 | 0.067 |  |
| W: 0.287                     | 0.396 | 1     |  |
| DESIRED                      |       |       |  |
| x                            | y     |       |  |
| R: 0.719                     | 0.278 |       |  |
| G: 0.306                     | 0.682 |       |  |
| B: 0.125                     | 0.069 |       |  |
| W: 0.287                     | 0.396 |       |  |
| STATUS: [ACTIVE]             |       |       |  |
| <ENTER> to edit/confirm      |       |       |  |
| <EXIT> to return             |       |       |  |
| press <*> for factory preset |       |       |  |
| press <?> for purity pattern |       |       |  |

Menu 9-44

| DYNACOLOR                    |       |       |  |
|------------------------------|-------|-------|--|
| MEASURED                     |       |       |  |
| x                            | y     | Y     |  |
| R: 0.658                     | 0.305 | 0.093 |  |
| G: 0.342                     | 0.641 | 0.838 |  |
| B: 0.142                     | 0.080 | 0.069 |  |
| W: 0.254                     | 0.377 | 1     |  |
| DESIRED                      |       |       |  |
| x                            | y     |       |  |
| R: 0.699                     | 0.256 |       |  |
| G: 0.372                     | 0.641 |       |  |
| B: 0.153                     | 0.085 |       |  |
| W: 0.278                     | 0.369 |       |  |
| STATUS: [ACTIVE]             |       |       |  |
| <ENTER> to edit/confirm      |       |       |  |
| <EXIT> to return             |       |       |  |
| press <*> for factory preset |       |       |  |
| press <?> for purity pattern |       |       |  |

Menu 9-45

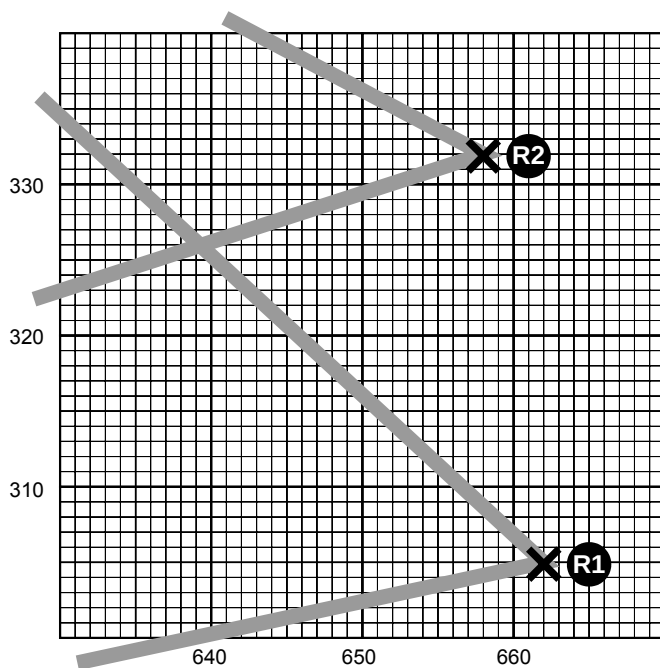


Image 9-5  
Red coordinates for both projectors

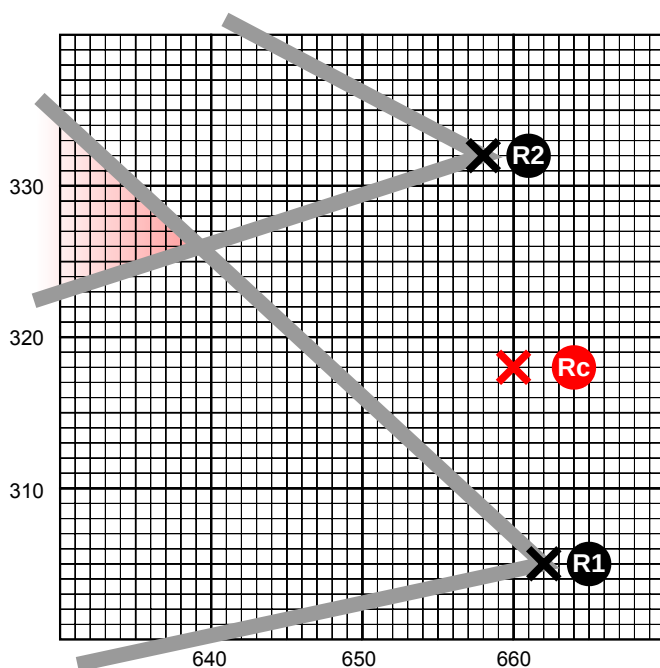


Image 9-6  
Coordinate is not present within the gamut of the adjusted projector

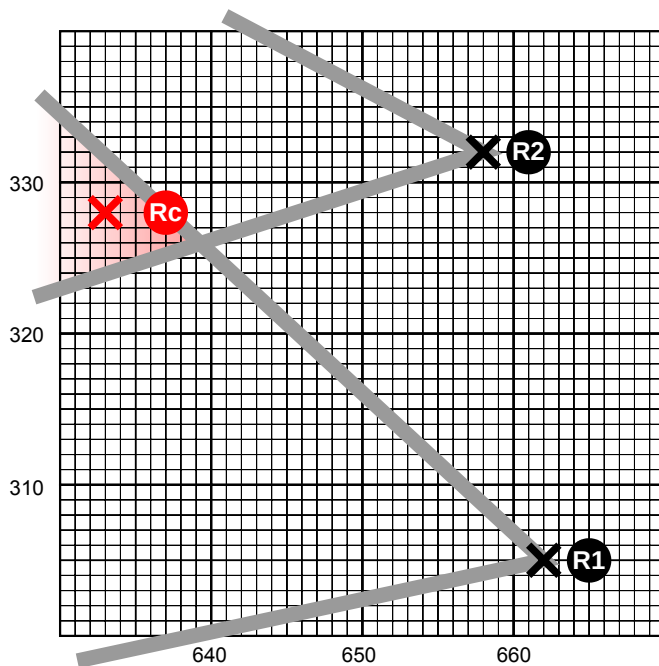


Image 9-7  
Select a coordinate that is present in the common gamut

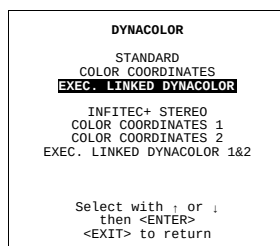
#### 9.16.1.4 Standard Linked DynaColor™

##### How to execute Standard Linked DynaColor™?

1. Push the cursor key ↑ or ↓ to highlight *Exec. Linked DynaColor*. (menu 9-46)
2. Press **ENTER** to execute.

This will execute the Linked Dynacolor™ command, all projectors in the linked setup will be set to their Common Color Gamut.

3. Press **EXIT** to return to *Service* menu.



Menu 9-46

#### 9.16.2 Active Infitec+ DynaColor™

##### 9.16.2.1 Introduction to Active Infitec+ DynaColor™



The Active Infitec+ menu items will only be available when Infact Stereo is set to 'On' in the Stereo Options menu.

##### Active Infitec+ DynaColor™

Infitec filtering causes a slight color difference between left and right eye channels (color gamut difference), especially visible in saturated colors.

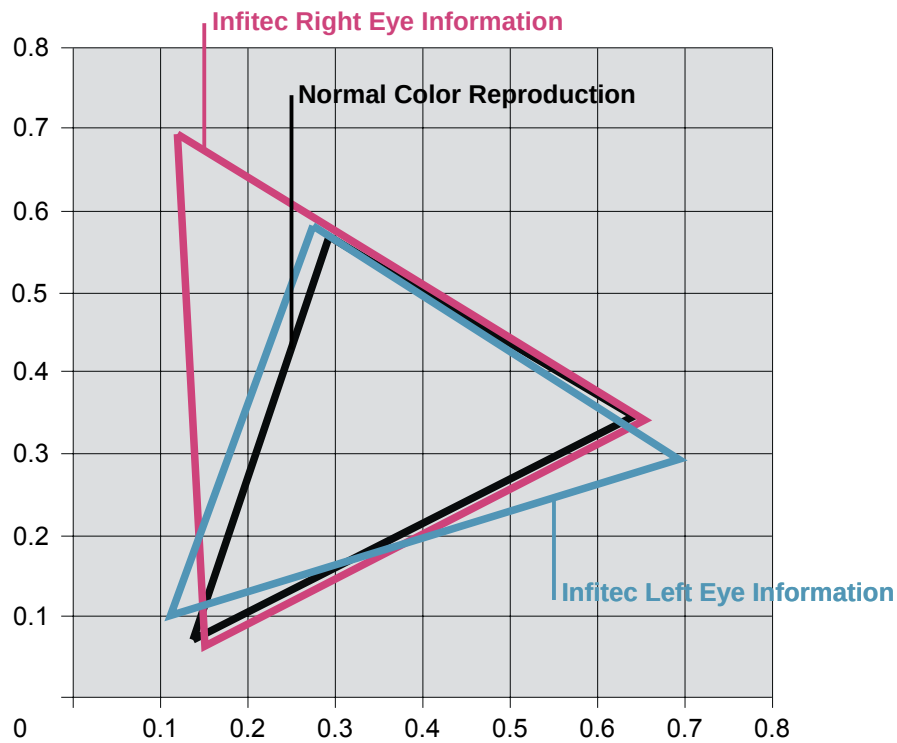


Image 9-8  
Infitec filtering causes a slight color difference between left and right eye channels.

DynaColor™ corrects this by creating identical color triangles for left and right eye, very close to the original color triangle.

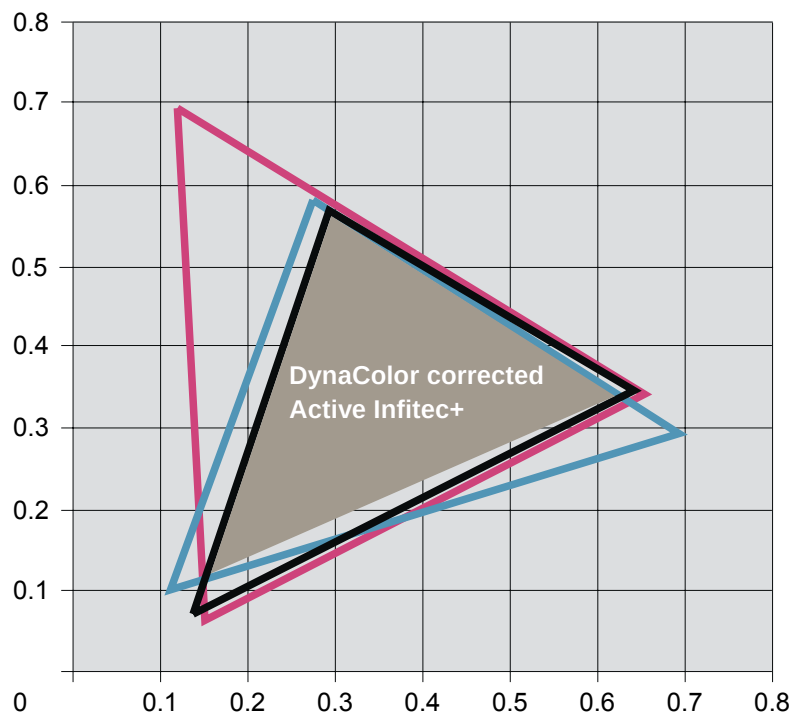


Image 9-9  
DynaColor corrected Active Infitec+

### 9.16.2.2 Active Infitec+ Color Coordinates

#### How to use the Color Coordinates menu?

Set the color coordinates for both 1 and 2 to their Common Color Gamut as described above in the Standard Dynacolor™ proceduresee chapter "9. Service Mode", "Standard Color Coordinates", page 156.

### The Gain functionality

The Gain menu item in the Dynacolor™ is used to eliminate 'color' brightness differences in multi-channel applications.

Assume we have a 2 channel setup with 2 projectors, we will use the Linked Active Infitec+ Dynacolor™ command to match the color triangles for the left and right eye of both projectors.

However there is still a possibility there is a slight difference in 'color' brightness between both projectors.

The Gain menu-item is used to eliminate this color' brightness problem.



The Gain settings are stored with the Color Coordinates settings after executing the Linked Active Infitec+ Dynacolor™ command, when performing a new Linked Active Infitec+ Dynacolor™ command, the Gain setting will need to be adjusted.

#### 9.16.2.3 Active Infitec+ Gain

##### What is Active Infitec+ Gain?

The Gain menu item in the Dynacolor™ is used to eliminate 'color' brightness differences in multi-channel applications.

Assume we have a 2 channel setup with 2 projectors, we will use the Linked Active Infitec+ Dynacolor™ command to match the color triangles for the left and right eye of both projectors.

However there is still a possibility there is a slight difference in 'color' brightness between both projectors.

The Gain menu-item is used to eliminate this 'color' brightness problem.



The Gain settings are stored with the Color Coordinates settings after executing the Linked Active Infitec+ Dynacolor™ command, when performing a new Linked Active Infitec+ Dynacolor™ command, the Gain setting will need to be adjusted.

##### How to use Active Infitec+ Gain?

1. Push the cursor key ↑ or ↓ to highlight *Color Coordinates 1*. (menu 9-47)
2. Press **ENTER** to continue.
3. Push the cursor key ↑ or ↓ to highlight *Gain*. (menu 9-48)
4. Press **ENTER** to continue.  
The Gain barscale will be displayed.
5. Change the Gain Value by pushing the cursor key ← or → until the desired value is reached.
6. Press **EXIT** to return to the *Dynacolor* menu.

```

DYNACOLOR
STANDARD
COLOR COORDINATES
EXEC. LINKED DYNACOLOR
INFITEC+ STEREO
COLOR COORDINATES 1
COLOR COORDINATES 2
EXEC. LINKED DYNACOLOR 1&2

Select with ↑ or ↓
then <ENTER>
<EXIT> to return
  
```

Menu 9-47

```

DYNACOLOR ACTIVE INFITEC+
MEASURED
  x      y      Y
R: 0.658 0.385 0.093
G: 0.342 0.641 0.838
B: 0.142 0.080 0.069
W: 0.254 0.377 1
DESIRED
  x      y
R: 0.699 0.256
G: 0.372 0.641
B: 0.153 0.085
W: 0.278 0.369
STATUS [ACTIVE]
GAIN
<ENTER> to edit/confirm
<EXIT> to return
press <*> for factory preset
press <?> for purity pattern
  
```

Menu 9-48

#### 9.16.2.4 Active Infitec+ Linked DynaColor™

##### How to Execute Linked DynaColor™ 1 & 2?

1. Push the cursor key ↑ or ↓ to highlight *Exec. Linked DynaColor 1 & 2*. (menu 9-49)
2. Press **ENTER** to execute.

This will execute the Linked Dynacolor 1 & 2 command, all projectors in the linked setup will be set to their Common Color Gamut. This is done by means of the following steps:

- a) First, the left eye color coordinates (color coordinates 1), of all linked projectors, are set to their Common Color Gamut.
- b) In the next step, the same is done for the right eye color coordinates (color coordinates 2).
- c) In the final step, the Common Color Gamut for color coordinates 1 and 2 is calculated, all projectors in the linked setup are set to this final Common Color Gamut.

3. Press **EXIT** to return to Service menu.

```
DYNACOLOR
STANDARD
COLOR COORDINATES
EXEC. LINKED DYNACOLOR

INFITEC+ STEREO
COLOR COORDINATES 1
COLOR COORDINATES 2
EXEC. LINKED DYNACOLOR 1&2

Select with ; or |
then <ENTER>
<EXIT> to return
```

Menu 9-49



# 10. STANDARD SOURCE FILES

## 10.1 Table overview

### Table overview

The following standard source files are pre-programmed in the projector.

| Name <sup>3</sup> | Resolu-<br>tion <sup>4</sup> | Fvert<br>Hz <sup>5</sup> | FHor<br>kHz <sup>6</sup> | Fpix<br>MHz <sup>7</sup> | Ptot <sup>8</sup> | Pact <sup>9</sup> | Ltot <sup>10</sup> | Lact <sup>11</sup> |
|-------------------|------------------------------|--------------------------|--------------------------|--------------------------|-------------------|-------------------|--------------------|--------------------|
| 1600_60v          | 1600x1200                    | 60,000                   | 75,000                   | 162,000                  | 2160              | 1600              | 1250               | 1200               |
| ews_50            | 1280x1024                    | 50,000                   | 52,350                   | 87,948                   | 1680              | 1280              | 1047               | 1024               |
| ews_60            | 1280x1024                    | 60,000                   | 63,900                   | 107,352                  | 1680              | 1280              | 1065               | 1024               |
| svga_60v          | 800x600                      | 60,317                   | 37,879                   | 40,000                   | 1056              | 800               | 628                | 600                |
| vga_gr            | 640x480                      | 59,941                   | 31,469                   | 25,175                   | 800               | 640               | 525                | 480                |
| xga_60            | 1024x768                     | 60,000                   | 48,360                   | 64,996                   | 1344              | 1024              | 806                | 768                |
| sgi_108v          | 1280x1024                    | 108,000                  | 112,676                  | 164.145                  | 1460              | 1280              | 1041               | 1024               |
| sgi_110v          | 1280x1024                    | 110,000                  | 114,286                  | 167.160                  | 1464              | 1280              | 1038               | 1024               |
| hp_100v           | 1280x1024                    | 100,000                  | 108,108                  | 187.488                  | 1728              | 1280              | 1085               | 1024               |
| sxga_96s          | 1280x1024                    | 96,000                   | 104,000                  | 167,885                  | 1600              | 1280              | 1093               | 1024               |
| sxga_114s         | 1280x1024                    | 114,000                  | 124,600                  | 199,363                  | 1600              | 1280              | 1093               | 1024               |
| xga_96s           | 1024x768                     | 96,000                   | 77,500                   | 99,164                   | 1280              | 1024              | 807                | 768                |
| xga_120s          | 1024x768                     | 120,000                  | 96,700                   | 123,955                  | 1280              | 1024              | 807                | 768                |
| sxga+_50          | 1280x1024                    | 50,000                   | 52,350                   | 87,948                   | 1680              | 1400              | 1047               | 1050               |
| sxga+_60          | 1280x1024                    | 60,000                   | 63,900                   | 107,352                  | 1680              | 1400              | 1065               | 1050               |

Table 10-1

3. Name: name of file, contains the settings.
4. Resolution: image resolution, when followed by ..i means interlaced.
5. Fvert Hz: vertical frame frequency of the source
6. FHor kHz: horizontal frequency of the source
7. Fpix MHz: pixel frequency
8. Ptot : total pixels on one horizontal line.
9. Pact: active pixels on one horizontal line.
10. Ltot: total lines in one field
11. Lact: active lines in one field.



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**Revision Sheet**

To:

► **Barco nv Simulation Products**  
Noordlaan 5, B-8520 Kuurne  
Phone: +32 56.36.82.11, Fax: +32 56.36.84.86  
E-mail: info@barco.com, Web: www.barcocom

From: \_\_\_\_\_

Date: \_\_\_\_\_

Please correct the following points in this documentation (**R5976780/01**):

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