Teatro

VIDEO PROJECTOR

USER AND
INSTALLATION MANUAL

MANUALE D'USO E
INSTALLAZIONE

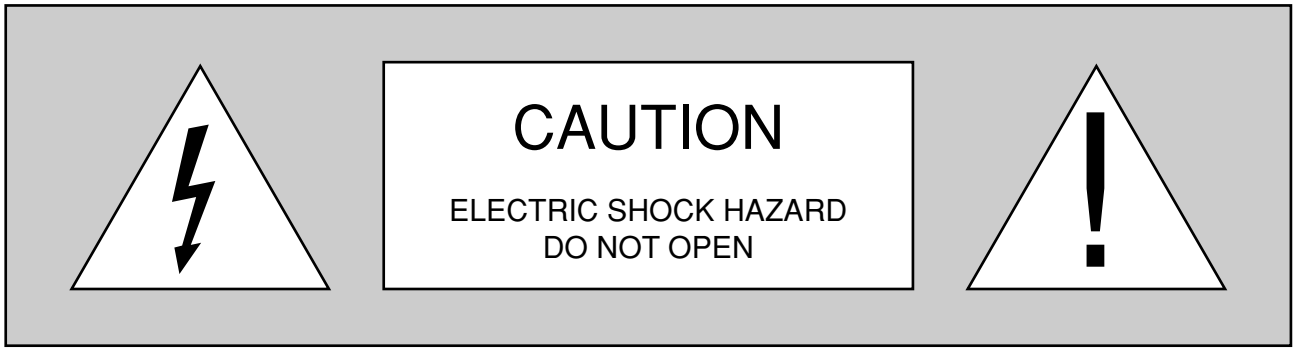
SVD 500 PLUS
SVP 450 PLUS
SVP 420 HB

SIM2 Multimedia

WWW.SIM2.IT

INDEX

1 WARNINGS



To reduce the risk of electric shock, disconnect the power supply cable before opening the equipment

There are no parts inside the projector that need adjusting by the user.

Qualified technicians must be called to perform extraordinary maintenance and adjustments.

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 in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Attention:

Before using this projector please read this manual through carefully and completely. This manual will provide you with the basic instructions for using the projector. Installation, preliminary adjustments and procedures which require the opening of the projector and contact with electrical components should be performed by qualified personnel. For continued safe and reliable operation, use only power cables supplied by the manufacturer. Adhere to all notes and warnings.

MAINS POWER

Mains power: 120-240Vac 50-60Hz +6%-10%
Max absorbed current: 2.5 A_{RMS}

1.1 Safety and Regulations

A) Safety - conform to:

EN60950:
Equipment for information technology including electric office equipment.
Safety.

German Law (RoV) -1987:
X-ray emission

USA Code of Federal Regulations: Title 21(21CFR)
X-ray emission

B) Electromagnetic Compatibility - conform to:

EN 55022:
Limits and measuring methods of radio disturbance produced by information technology equipment.

EN 50082-1:
Generic immunity law.

EN 61000-3-2:
Limits for harmonic current emission

EN 61000-3-3:
Limits - Section 3 Limitation of Voltage Fluctuation and Flicker in Low Voltage Supply System for Equipment with Rated Current SYMBOL 163\f “Symbol” 16A.

• Warning

SIM2 Multimedia S.P.A declines all responsibility for damages to things and/or people caused by incorrect mechanical or electrical installation of the projector.

2 GENERAL INFORMATION

The instructions detailed in this manual for the installation and normal operation of the projector must be followed precisely.
Installation and preliminary adjustments must be performed by qualified service technicians.

2.1 Projector Identification

The model and serial number are located on the projector’s rear label *Fig. 1*.

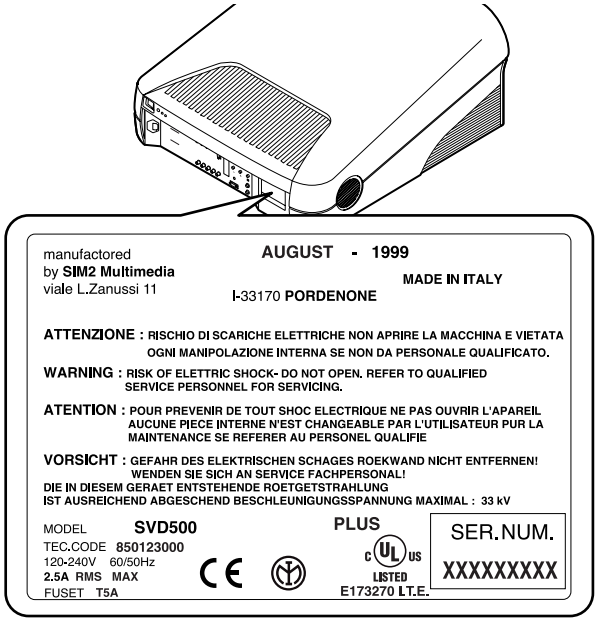


Fig. 1

Record the serial number in the space below and quote it each time you ask for information or technical assistance from SIM2 Multimedia SPA.

Mod. .....Serial number.....

Before operating the projector, read carefully the safety labels on the rear panel.

The lightning flash symbol on the label and the 33 Kv indication are intended to advise the user that inside the projector there are components that can produce electric shock.

Warnings:
To avoid damages, fire or electric shocks do not expose this projector to the rain or damp. Qualified service personnel should service and adjust the projector’s internal parts.

- Never put objects of any kind through the projector’s ventilation slots as they might touch high voltage components or cause short circuits that could be a fire or electric shock hazard.

- Do not spill any liquid spill on the projector.

- If an object or liquid manages to get inside the projector, unplug it immediately and call for the assistance of qualified personnel.

- Do not attempt to use it as it could be dangerous or even worsen the damage.

- If the projector is not used for long periods of time or during storms, unplug the projector temporarily from the mains to avoid damaging the projector caused by lightning or temporary overcurrents.

- Do not stand the projector on unstable surfaces as it could drop causing serious damage.

- The projector has slots for ventilating the internal components - do not cover or block them.

- Non posizionare il projector su superfici morbide. Do not postion the projector on a soft surface.

- The projector should not be made part of a fitted installation or closed unless there is sufficient ventilation.

- After technical assistance or repairs on the projector have been completed, ask the technician to carry out a safety check (all cables and components in the right position) and to make sure the projector is in proper operating conditions.

2.2 Power cabling

The projector's mains power device is shown in the picture *Fig. 2*.

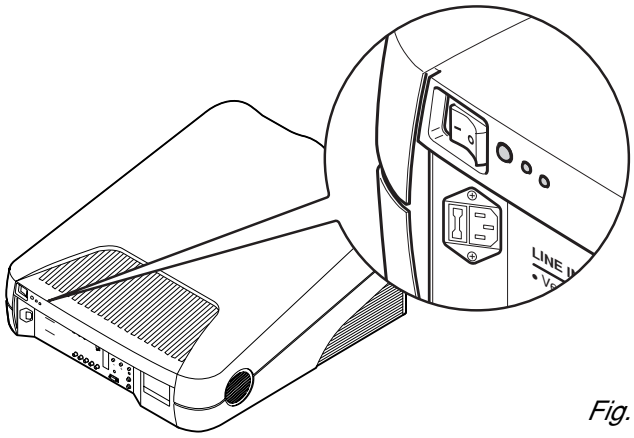


Fig. 2

The projector operates at the following mains values:

120-240Vac 50/60Hz 270W 2,5A RMS-MAX, as specified on the rear label.

The type of fuse used is a 5A, type T (delay).

Warning:
The mains plug is the disconnect device.
Take care when installing that the mains plug and socket outlet are easily accessible.

Warning:
The projector must be earthed.

If the power socket is not equipped with an earth pin, call your electrician who will install it and ensure its efficiency. To disconnect the cable pull it out with the plug.

Do not pull the cable itself.
If you use an extension lead, make sure its rating is over 3A and is equipped with an earth wire.

2.3 Servicing

Servicing must be carried out by qualified technicians.

Do not attempt to service the projector without the proper technical knowledge. Opening the projector can expose personnel to potential hazards: high voltage and electric shock.
Unplug the mains cable and call for qualified service technicians in the following cases:

- when the power cable or plug is damaged

- when liquids are spilled on the projector.

- when rain or water has got inside the projector.

- when the projector is not working properly regardless of the fact the instructions for use have been followed correctly

- when the projector has fallen and/or its casing is damaged (broken).

- when there are noticeable variations in performance that cannot be corrected with the normal user controls.

Note: Modify only those parameters shown in the user's section of the instruction manual. If parameters or controls are modified that are not shown in the manual a realignment of the projector might become necessary and qualified service personnel might have to be called in.

2.4 Spare parts

Use only original SIM2 Multimedia spare parts.

Using components different from the original spare parts could lead to:

- A deterioration in performance.
- Fire.
- Electric shock.
- Electrical damage.
- Other.

Failure to observe the above-mentioned warning will automatically render null void the manufacturer's guarantee.

2.5 Cleaning the projector

When we speak about projector cleaning we mean the outside of it. **NO** internal cleaning is necessary.

- Before you start cleaning the projector take the plug out of the mains.
- Do not use liquid or spray detergents.
- Stubborn stains can be removed with a cloth lightly dampened with mild detergent solution.
- Never use strong solvents such as thinners, petrol, acetone or abrasive cleaners as they can damage the projector's paint.
- Avoid touching the lenses with your fingers, which would leave marks. Clean them as you would any ordinary photographic lens since they have an anti-reflection coating (use special lens cleaning paper or special photographic lens cloth with care).

Note: After 2000 hours working time it is essential to clean the outside of the lenses with a soft cloth to avoid scratching them.

Don't forget to cover the lenses when the projector is not going to be used for a long time.

2.6 Packing the Projector

For the best protection pack the projector as it was originally packed at the factory.

For air freight shipping use metal or plastic straps to secure the box.

Always keep the original packing for any future necessity, such as moving or servicing the projector.

2.7 Room lighting

To get the best quality of the projected pictures the room should be reasonably dark. Limit, as much as possible, direct light onto the screen and position it, should the projection room be lighted,in a shadowy area. If possible, make sure that ceiling, walls and floor are dark and not reflecting.

2.8 Back panel

See Fig. 3

At the rear there is a panel with:

- Six buttons for total projector control
- Mains connection
- Power switch and fuse
- Input connections
- Safety labels

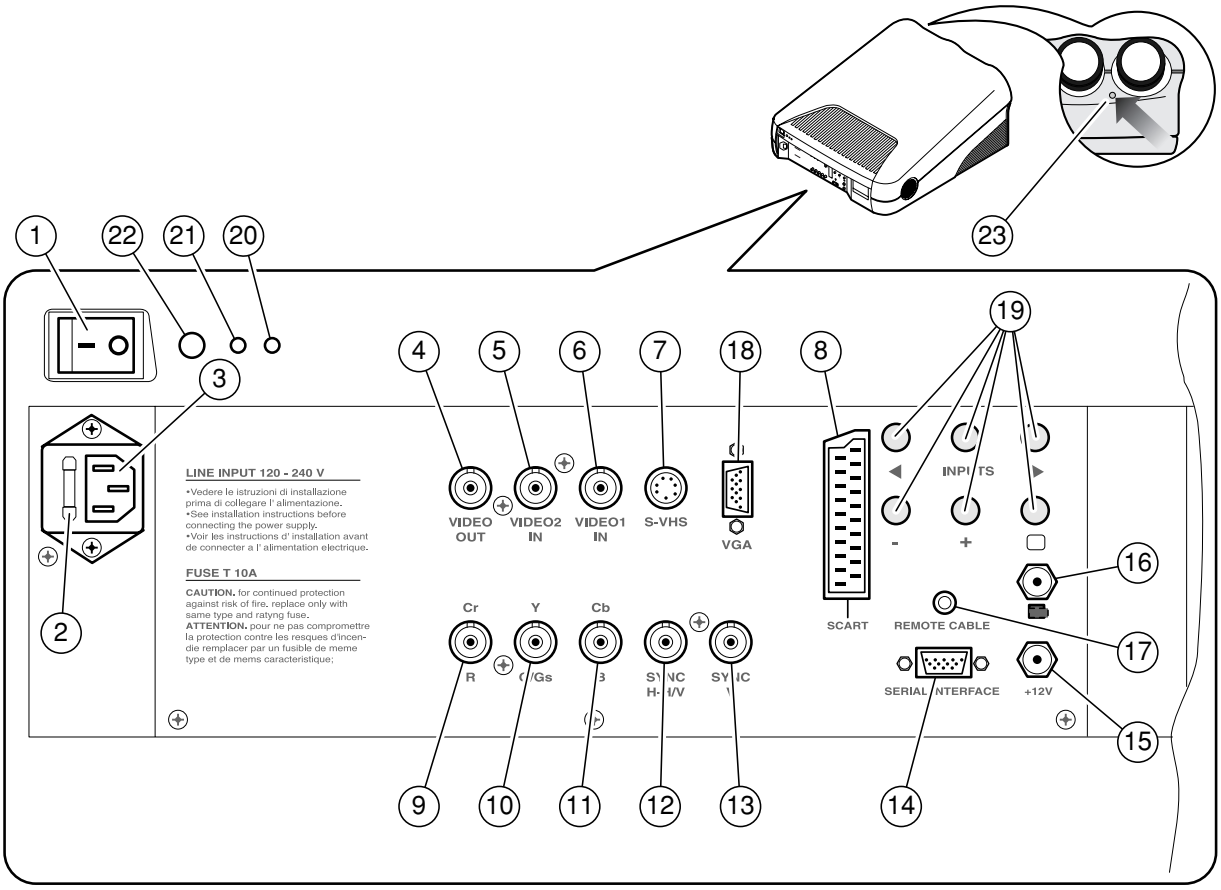


Fig. 3

- **THE FOLLOWING FUNCTIONS ARE ON THE PANEL:**

1- Power switch.

2- Fuse holder. The fuse type is 5A, T delayed.

Attention:
For continued protection against the risk of fire, replace only with one of the same type and rating.

3- Mains power connector. To connect the power cable 90-270Vac 48-62Hz

4- Video output: CVBS.

5- Video 2: CVBS: (Signal input).

6- Video 1: CVBS: (Signal input).

7- S-VHS: (Signal input).

8- Connector SCART: (Input/output).

9- Red BNC input (RGB input) or Cr (components input).

10- Green BNC input (RGB input) or Y (components input).

11- Blue BNC input (RGB input) or Cb (components input).

12- Sync H or H-V. Horizontal synchro or composite synchro.

13- Sync V. Vertical synchronism

14- RS422 connector. To connect and control the projector from a PC..

15- +12V connector (output). It has a +12V output when the projector is on. This output can activate a relay with a current less than 10mA. (for example, to enable a circuit for the automatic unwinding and rewinding of the motorised screen).

16- Screen command. It has +12V in output when the aspect ratio selected with the ▭ button is **SMALL**. It is used to change screen dimensions automatically.

17- Remote control cable input. To connect the RC3000 remote control cable.

18- VGA-SVGA signals input DB 15 connector

19- Rear panel buttons:

▢ **Picture adjustment.** Each time you press a button you select one of the follow controls:
Contrast, Brightness, Colour-Hue, Peaking. Use the + and - buttons to modify the value of the selected control.

INFO Press this button to have the current projector settings (ref. INFORMATION paragraph)

◄ ► To modify the input selection sequentially; it starts the projector from the STAND-BY state.

20- Led pilot light. (Red = **STAND-BY**), (Green = **ON**).

21- LED, blinks (red) when signal from the remote control is received.

22- Remote control signal receiver (rear).

23- Remote control signal receiver (front).

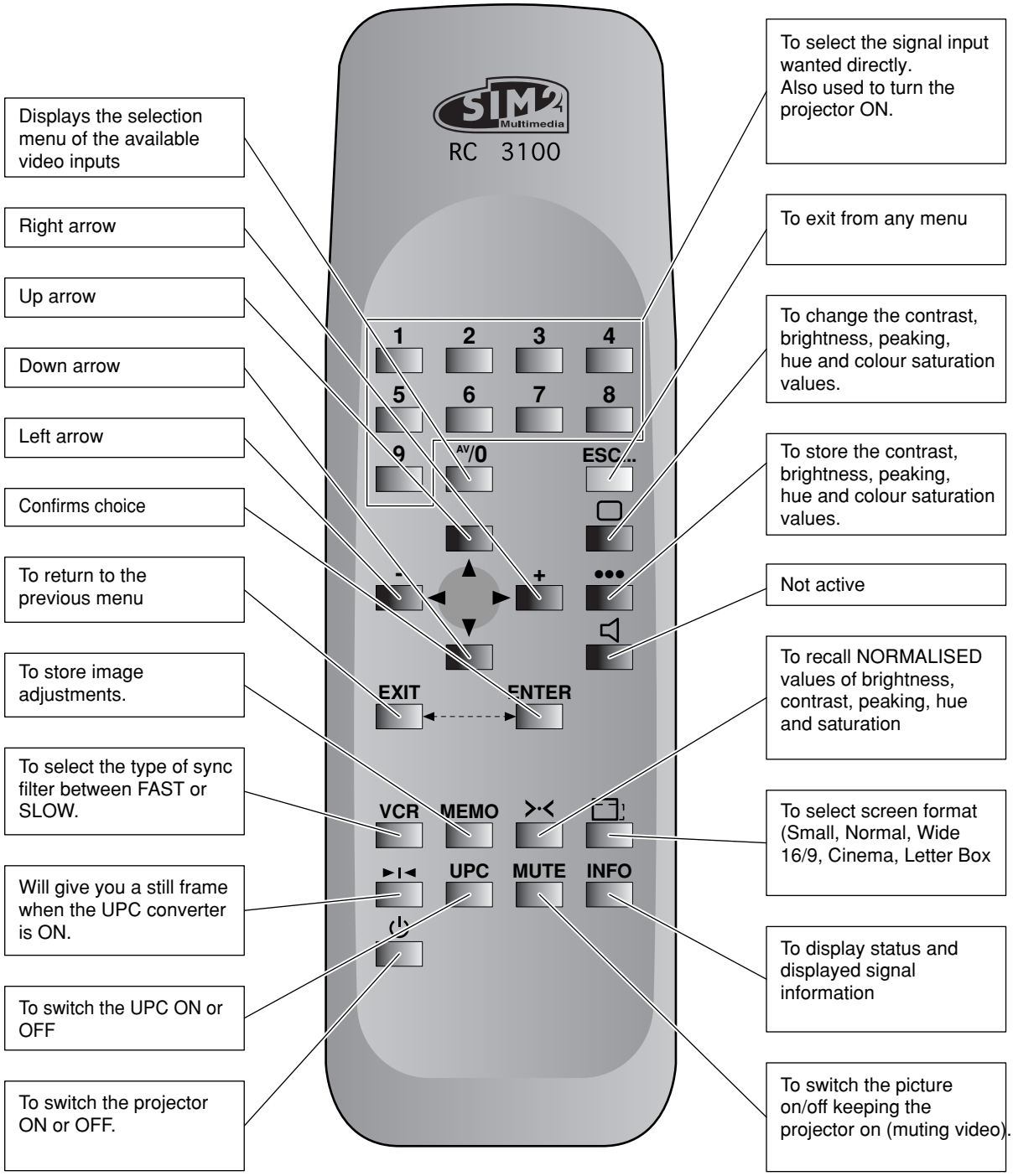
2.9 Cathode-ray tube phosphor burning

One of the possible causes for burning could be when a static image of a computer or video recorder signal is projected for more than an hour.
The static image remains impressed on the screen even when the signal changes.
Whenever it is necessary to visualise a static image for more than one hour lower the contrast as much as possible (**CONTR** key).
The same problem arises when visualising an image in a different format for a long time. The smaller picture could remain impressed on the screen (for instance, visualising a 16:9 image on a 4:3 screen or vice versa). In this case we suggest reducing the contrast of the small picture as much as possible. These measures will reduce the risk of CRT phosphor burning. If possible, always use the same picture size.
Read the warranty enclosed with the product and consult your dealer or SIM2 qualified personnel.

3 USER REMOTE CONTROL RC 3100

RC 3100 is the User Remote Control for normal programme selection and analogue adjustments (once the projector is installed). The projector is controlled by the infrared ray remote control (I.R.) whose maximum range is approximately 10 metres with new batteries.

The following figure describes the functions of the buttons on the User Remote Control.

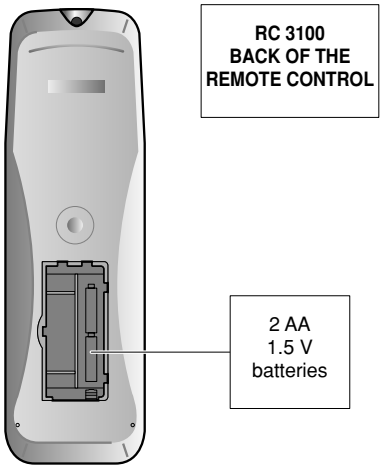


3.1 Batteries

Handling the remote control and batteries:

- Avoid exposing the remote control to heat and humidity.
- When not using the remote control for a long period of time, remove the batteries.
- Do not use new and old batteries together or batteries of a different voltage or type.
- Do not drop or mishandle the remote control.
- Use the remote control within its operating range (about 10 metres and a 30° angle)

Note: *The RC3100 remote control is powered by two AA batteries.*



3.2 RC 3100 User Remote Control

Read this chapter through carefully before altering any values or making any adjustments.

3.3 Projector Power On

- To turn the projector on or off, press the power swith, (a red led lights up on the rear panel), if after a few seconds the led does not turn green, press ⏻ for a second.

- To turn the projector off, press ⏻ for a longer time. Wait at least 3 seconds before turning the projector on again, or else the command will be ignored.

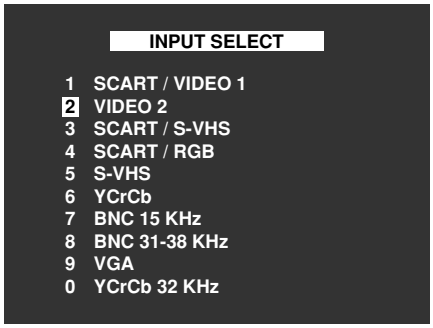
3.4 Language menu

To select the language desired for the screen displays:
Press push-button • • • for a second, the following will appear:

The left arrow indicates the language in use. Use the arrows ▲ ▼ to select the desired language.
Press **ENTER** to confirm the selection.
Press **ESC** to exit the menu.

3.5 Input selection

Select a programme AV and/or the relevant input connector.
To select the input directly use a numerical button or: press push-button **AV**/**O** to enter the video input menu. The following menu will be displayed:
Press the relevant number to select the desired video input;



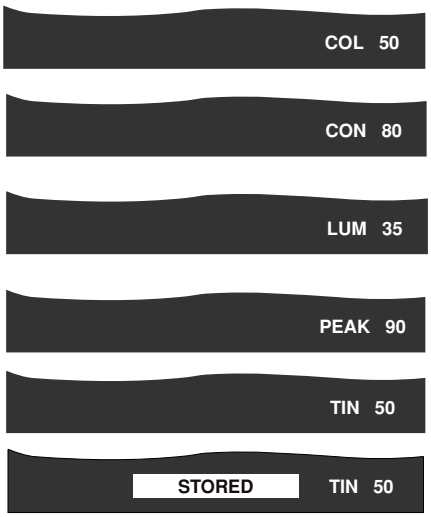
Note: *The input Num.0 appairs only on the models provided by the progressive component input.*

i.e. if one wishes to select video 2 press push-button **2** and the following indication will be displayed for a brief period of time.

3.6 Picture adjustment

To change the value of **CONTRAST, BRIGHTNESS, COLOUR, HUE (STANDARD NTSC), PEAKING.**

Press the ▢ button for a second, one of the five adjustments will appear (contrast, brightness, colour, peaking and hue).



Each time this button is pressed, a different adjustment will be selected, sequentially. Use the arrows ◄ ► to change the value, press **MEMO** to store the new value. Press **ESC** to exit.

3.7 Screen format selection

To select the correct screen format:
(**NORMAL, SMALL, 16/9, LETTER BOX, CINEMA,**).

Press . One of the previous screen formats will appear (for instance “normal”).

Each time you press a button relative to the **AV** inputs, you are choosing one of the format ratios stored in the relative memory bank. In the memory banks (see: Memory Manager) you can store several setups with the same input signal but with different format ratios.

Each time the , button is pressed the same signal is displayed with a different format ratio (only if it has been stored in the relative memory bank). The possible format ratios are: **NORMAL (NORMAL=4/3); WIDE (16/9); SMALL; LETTER BOX; CINEMA.**
The message will disappear shortly afterwards.

Note: *Only by selecting the **SMALL** format ratio format will you get +12V on the rear panel connector marked by , used to control the screen.*

3.8 VCR button (Sync filter)

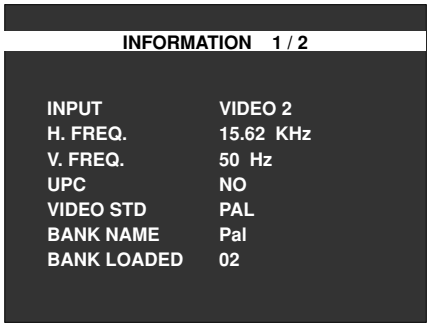
To select the appropriate sync filter.
Press **VCR** to change the sync time constant. The following message will be diplayed:

Whenever you press the **VCR** button you toggle the sync filter type from **FAST** to **SLOW** and vice versa. The message will disappear shortly afterwards.

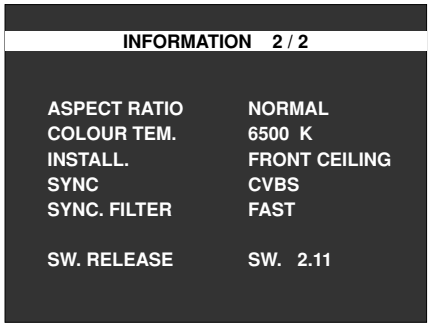
Note: ***FAST*** *is recommended for the **VCR**. **SLOW** is recommended for video signal broadcasting.*

3.9 Info

The INFO menu displays information on a current input signal.
Press the **INFO** button to access the menu for the information concerning the projector parameters and the picture settings.



Press **INFO** again. The second part of the information will be displayed relating to the picture parameters and settings.



Press **ESC** to exit.

3.10 Muting video button

Press **MUTE** for about 2 seconds. The picture will darken while the projector stays on; the picture will reappear immediately if you press the button again.

3.11 Normalised button

Press >·<. The adjustments relative to contrast, brightness, colour saturation, hue and peaking, stored in the current bank, will be loaded automatically.

3.12 UPC button

Press **UPC.** It will turn on or off the converter that doubles the input signal lines.
Note: *only on models with UPC.*

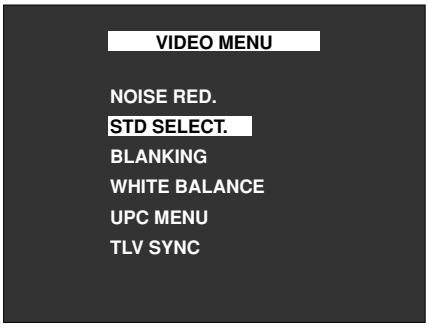
3.13 Freeze button

Press ►I◄. To have a still picture. When pressed again the picture will run normally.
This function is only active if the UPC converter is active.

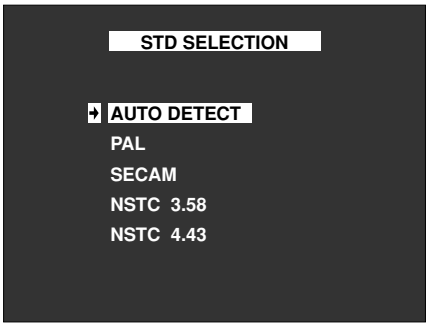
3.14 Video menu

To select the input standard (PAL, SECAM, NTSC 3.58, NTSC 4.53).

Press the ▢ button for at least 2 seconds to enter the video menu.
The following menu will appear:



Press ▲ ▼ . Select SELEZ STD and press **ENTER** to confirm, the following menu will be displayed:
The left arrow indicates the present setting. Use the arrows

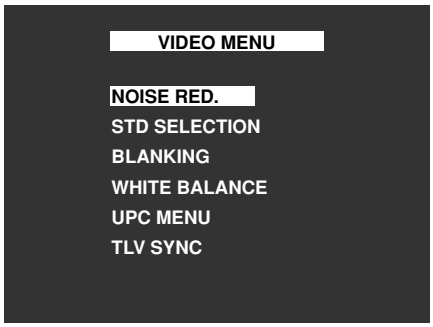


▲ ▼ to select the video input standard or the automatic selection mode. Press **ENTER** to confirm.

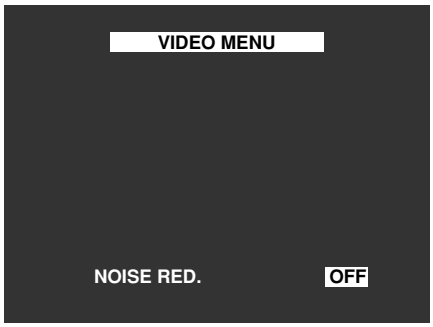
Press **EXIT** to return to the previous menu. Press **ESC** to exit the menu.

To turn on or off the noise reduction: this menu allows you to activate a frequency filter.

Press ▢ for at least 2 seconds, the following menu will be dispalyed:
Use the arrows ▲ ▼ to select **NOISE RED.** and press **ENTER** to confirm, the following menu will be displayed:



Use the arrows ◄ ► to turn the noise reduction option on and off.

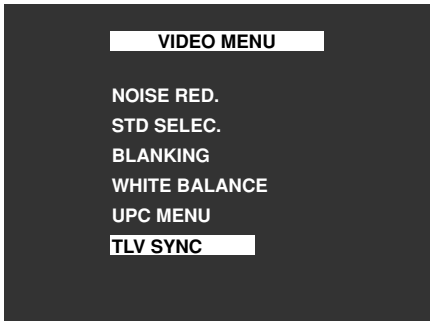


Press **EXIT** to return to the previous menu. Press **ESC** to exit the menu.

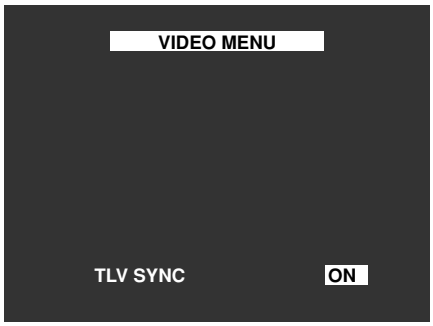
Note: *the noise reduction filter allows a reduction of the noise on the video signal, which also implies a reduction in the picture peaking.*

To turn on or off the TLV sync: with this menu you can synchronise signals with TRI-LEVEL synchronism for the Japanese, high-definition system.

Press ▢ for at least 2 seconds, the following menu appears:



Use the arrows ▲ ▼ to select **TLV SYNC** and press **ENTER** to confirm, the second menu appears:

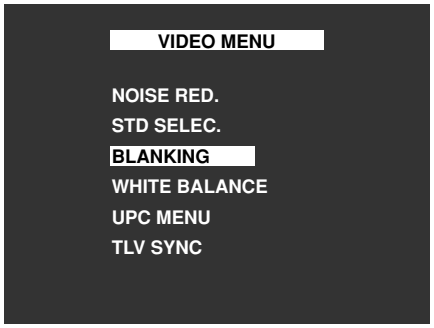


Use the arrows ◄ ► for function selection. The TLV SYNC selection is active only if the signal is 33,7KHz 60Hz.
Press **EXIT** to return to the previous menu.
Press **ESC** to exit the menu.

3.15 Blanking

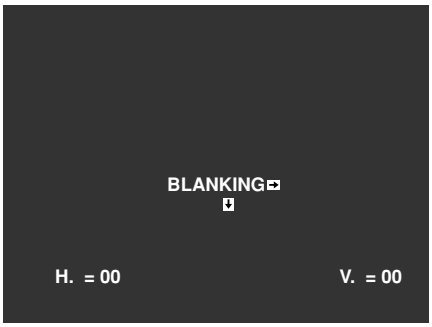
To adjust blanking to the left, right, upper and lower of the projected picture.

Press ▢ for at least 2 seconds, the following menu appears:



Use the arrows ▲ ▼ to select **BLANKING** and press **ENTER** to confirm.

Press the arrows ▲ ▼ to change the figures relevant to the vertical size of the blanking window on the upper part of the screen.
Press the arrows ◄ ► to change the figures relevant to the horizontal size of the blanking window on the left part of the screen.
Press **ENTER** to enter the secon part of the blanking adjustment.



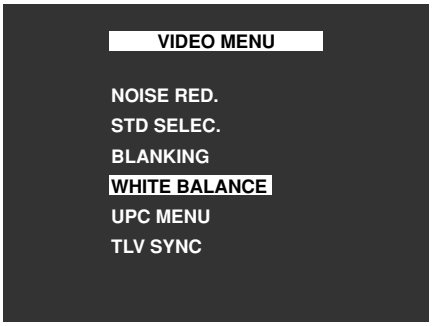
Press the arrows ▲ ▼ to change the figures relevant to the vertical size of the blanking window on the lower part of the screen.
Press the arrows ◄ ► to change the value of the horizontal size of the blanking window on the right part of the screen.
Press **MEMO** to store the adjustements carried out. Press **EXIT** to return to the previous menu. Press **ESC** to exit.

Note: *The purpose of this function is that of allowing a perfect qsquaring of the picture screen by cutting out any disturbances such as vertical and horizontal scanning consequencies, or disturbances deriving from VCR activity.*

3.16 White menu

To select a preset colour temperature according to the projected picture.

Press ▢ for at least 2 seconds, the screen displays the first menu:



Use the arrows ▲ ▼ to select **WHITE ADJ.** and press **ENTER** to confirm, the screen displays the second menu: The left arrow shows the present setting.

Use the arrow ▲ ▼ to select the desired setting and press **ENTER** to confirm.

The setting **USER ADJUSTMENT** regards an optional colour temperature setting, which must be carried out by a **QUALIFIED TECHNICIAN** upon installation, should the end user wish a different colour temperature than the set ones. The 3200° K colour temperature is used only when the projector is placed inside television studios. The 6500° K colour temperature is mostly used being considered the most pleasant and the one that reproduces colour most faithfully.

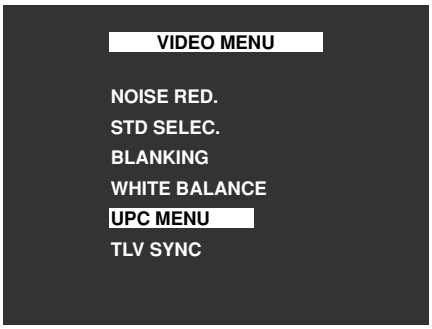
3.17 UPC converter

A UPC converter is installed inside the projector which doubles the input signal lines for a better quality picture and reduces common video defects, such as space between lines and trembling.

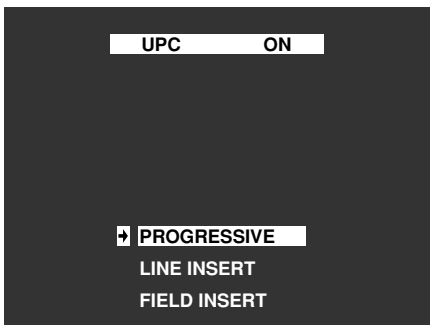
The **UPC** converter, which enhances the video quality and reduces some comon problems of television video signals, uses IQTV technology, offering great video picture improvements such as stability, noise reduction and increased contrast.

Note: *The **UPC** converter accepts standard signal (CVBS) and separate synchros (CVS) from 1 VPP to 4 VPP, (negative only).*

To switch the converter on/off, use the **UPC** button**:** when pressed the first time it turns it on, the second time it switches the converter off. To change the conversion mode, follow the procedure: press ▢ for at least 2 seconds, the screen displays the first menu:



Press the arrow ▲ or ▼ to select **UPC MENU** and press **ENTER** to confirm, the screen displays the second menu:



The menu operates only if the UPC converter is switched on.
The current conversion mode is shown by an arrow on the left. Use the arrow ▲ or ▼ to select a different conversion mode and press **ENTER** to confirm the selection. Press **EXIT** to return to the previous menu. Press **ESC** to exit.

Note: *The progressive conversion mode is the best one for using the videoprojector with TV. The line insertion and field insertion conversion are best used in special cases (e.g. in broadcasting studios).*

3.18 Storing

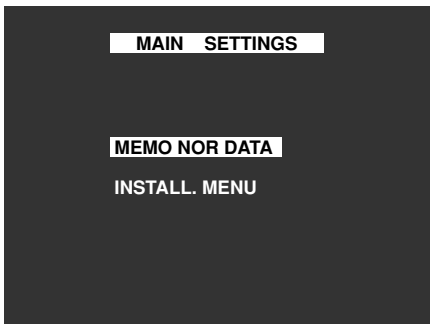
To store contrast, brightness, colour peaking and hue parameters as SET values (standard).
To store contrast, brightness, colour peaking and hue parameters as USER values (personal memo).

The projector stores two different picture setting adjustments. The **USER** adjustment is loaded each time the switch ⏻ is ON and the **SET**adjustmentwhich is loaded each time the ≻·≺ button on the remote control is pressed. Both adjustments can be changed.

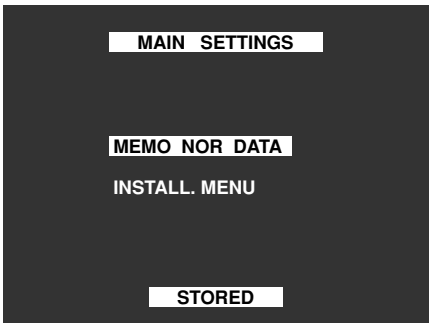
The **SET** adjustment is used when the adjustment parameters are changed and one wishes to return to the initial values.

To change peaking, colour, contrast, brightness and hue of the set adjustment.

To change the adjustment, press ● ● ●
thus gaining access to the **MAIN PARAMETERS** menu. The following menu is displayed:



Use the arrow ▲ or ▼ to select the function **MEMORIZE NORMALIZED DATA.** Press **ENTER** to confirm the stored adjustment parameters, the following message is displayed:



All peaking, hue, colour, brightness and contrast values are now stored.

To recall the **SET** adjustment, press >·< , no message is displayed.

To change the **USER** adjustment: change according to the peaking, hue, colour, brightness and contrast required.

To store a set of adjustments that will be used by the projector at switching on: use peaking, hue, colour brightness and contarst value to reach a personalized adjustment.

To store the adjustments carried out, press the **MEMO** menu.

The user setup is stored only when the MEMO button is pressed and one of the adjustments is switched on (a small window appears showing a digit that disappears in a few seconds).

To change the video picture adjustments.

For instance, to change the contrast value, press ▭ for 1 second only, the screen displays the following indication:

Increase or decrease the value by means of the arrows ◄ ► until the desired value is reached.
To store the new value within the **USER** adjustments, press the button **MEMO**, the remote control shows the following:

Press **ESC** to let the message disappear or wait 4 seconds and it will disappear on its own.

3.19 Installation menu

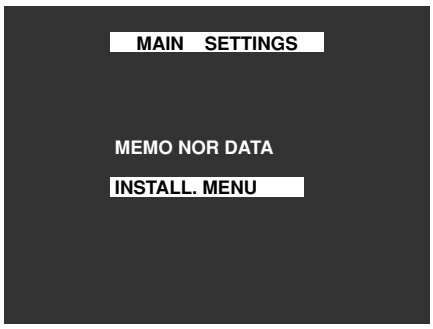
The adjustments described in this paragraph must be carried out by qualified personnel. Any adjustments incorrectly done can cause deterioration in picture quality.

3.20 How to enter the installation mode

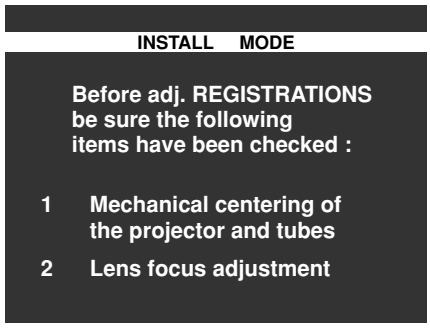
It is only possible in the installation mode to change deflection, adjust the white balance, turn ON/OFF the comb. filter, choose the type of installation and store a setting in the memory banks.
Besides carrying out all user adjustments, with the same RC 3100 user remote control it is also possible to carry out all adjustments for a perfect installation and a proper setting of relevant parameters.

In order to prevent the final user from gaining access and carrying out unnecessary installation adjustments, the projector is equipped with a special protection key. Observe the following procedure to unlock it and gain access to the installation mode.

Press the button • • • for 2 seconds. The following menu appears:

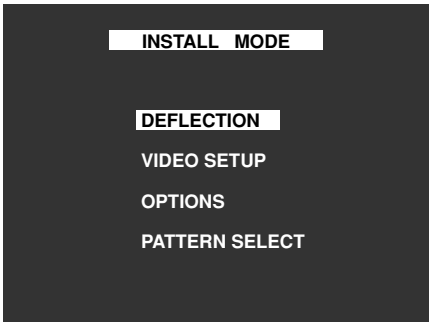


Press the arrows ▲ ▼ to select **MENU INSTALL.**
Press the button **EXIT** seven times, until the following menu is displayed:



Press the button **ENTER**.

The following menu appears:



Use the arrows ▲ ▼ to select each single menu item. Each line corresponds to a sub-menu.

Note: *The following menus operate only in the installation mode: deflection; video param.; options and test patterns. Further details about these menus can be found in the section of this manual relevant to installation.*

Once the installation procedure is through, switch off the projector to exit the installation mode, finally re-start the protection key.

4 INSTALLATION

4.1 INSTALLATION PROCEDURE

Qualified personnel must carefully observe the installation procedure to install the projector and to ensure best performances.

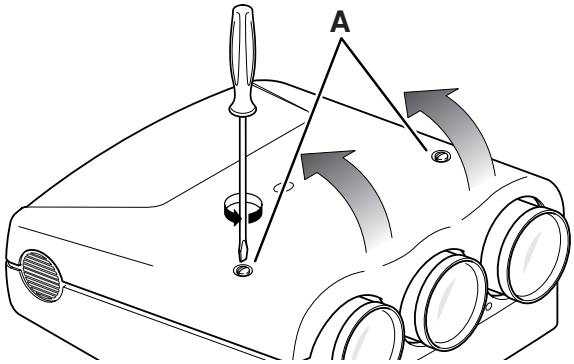
Note: *The projector is factory-set for front ceiling projection with a **90"** screen, 4/3 format and a projector-screen distance of **265 cm.***

1. **Choose the installation type and read the instructions through carefully**. Determine the distance between the screen and the front of the projector.
   Determine the projection angle.
2. **Remove the top and front projector covers**.
3. **Insert the correct spacers between lenses and tubes.**
4. **Prepare and install the screen.**
5. **Install the projector on the floor or on the ceiling and center the screen**, maintaining the factory deflection settings.
6. **Focus carefully by adjusting the lenses.**
7. **If the installation type is the same as the factory setting, go to step 11,** otherwise continue.
8. **Tilt the red and blue tubes until the three crosses are superimposed.**
9. **Adjust the magnets.**
10. **Switch the projector off and disconnect the power cable.**
11. **Put the cover on the video projector.**
12. **Carry out a fine adjustment of the picture with the remote control RC 3000.**

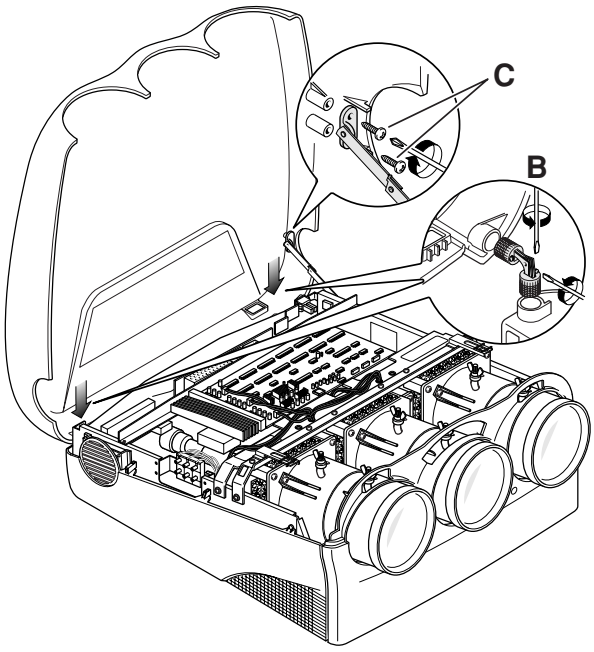
4.2 Removing the cover

4.2.1 Removing the top cover

Loosen the 2 securing screws (**A**) and lift the cover up.

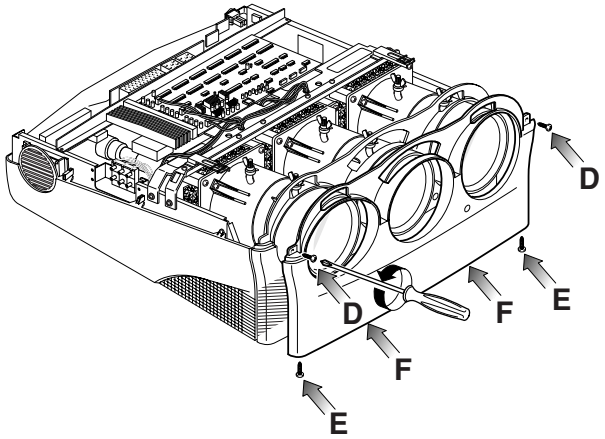


To remove the top cover completely you must unscrew the two locking screws (**B**) close to the two pivots and the other two (**C**) securing the jointed rod to the cover.



4.2.2 Removing the front panel

Unscrew the two screws (**D**) on the left and right of the front panel. Unscrew the three screws (**E**) on the bottom and take the panel off. The position of the screws is shown by the arrows. To remove the front panel, press the two tongues (**F**), which are located in its lower portion.



4.3 INSTALLATION TYPES

4.3.1 Installation choice

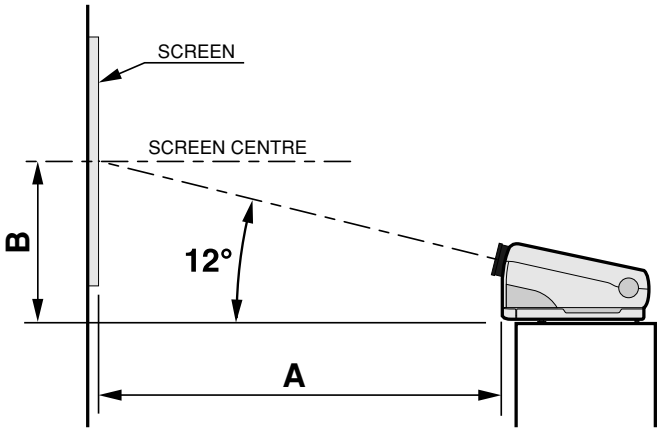
Choose one of the following possible installation types:

- ***DESK TOP FRONT projection***
- ***DESK TOP REAR projection***
- ***CEILING FRONT projection***
- ***CEILING REAR projection***

4.3.2 Desk-top front projection

Correct use of the spacers, as shown in the spacer tables, is mandatory for a perfect focus uniformity. Check that the projector is perfectly stable.

The projector bottom must be parallel with the floor



The distance between the projector and the screen (depending on screen dimensions), is shown in the following table.

TABLE 1: FRONT PROJECTION

SCREEN SIZE Useful area 4/3			A
Diagonal (Inches)	Width (cm.)	Height (cm.)	(cm.)
60”	121,9	91,4	186
80”	165,5	121,9	245
90”	182,9	137,2	265
100”	203,2	152,4	304
120”	243,8	182,9	365
150”	304,8	228,6	455
180”	365,7	274,3	545
200”	406,4	304,8	600
250”	508,0	381,0	750
300”	609,6	457,2	900

A = Distance between the front panel and the screen
B = Distance between the projector’s desktop line and screen centre.

Note: ***The screen size refers to the usable area (4/3 format).***

When installing the projector, it is recommended to increase by 5 cm the distance from the screen as indicated in the table. The picture adjustment can be carried out later through the deflection menu.

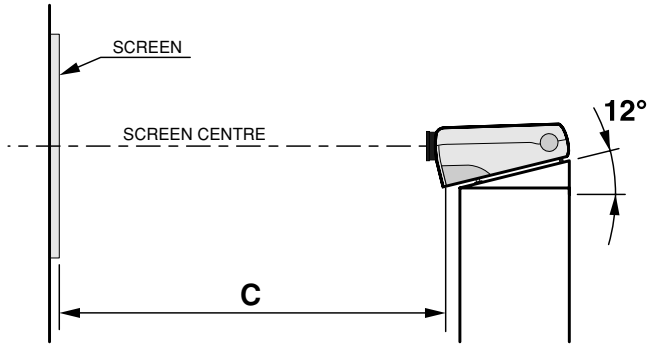
A greater distance produces a picture slightly bigger than the screen, its dimension can be reduced during installation by means of the deflection menu.
If the size of the screen diagonal is not given in the table, dimension **A** (in cm) is determined as follows:

- Measure the screen diagonal and take the nearest value from the table.
- Calculate the ratio between the table value and the relative width.
- Multiply the value obtained by the actual screen width.

Example: *Suppose we have a 105” screen diagonal. 100” is the nearest value in the table.*
Ihe A/Width ratio is equal to304:293.2=1,49.
A 105” screen diagonal is 213.3 wide.
So, the value of A is: 1,49x213,3=317.8 cm.

4.3.3 Desktop rear projection

For rear projection we recommend installing the projector with the axis of the green lens orthogonal to the screen plane; pay attention that the green lens be centered with respect to the screen.
By using Fresnel lenses for rear projection, it is mandatory to install the projector orthogonal to the centre of the screen to achieve maximum brightness and a better performance.



The use of the correct spacers as shown in the spacers table is mandatory for a perfect focus uniformity.

The distance between projector and screen is given in the following table.

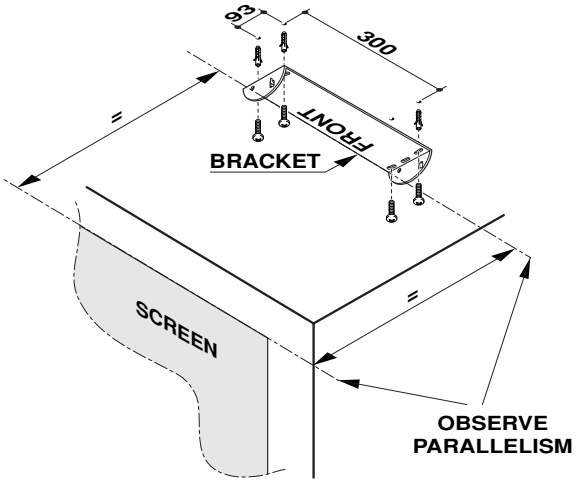
TABLE 2: DESKTOP REAR PROJECTION
C = Distance between the front panel and the screen.

SCREEN SIZEO Useful area 4/3			C
Diagonal (Inches)	Width (cm.)	Height (cm.)	(cm.)
60”	121,9	91,4	188
80”	162,5	121,9	247
90”	182,5	137,2	275
100”	203,2	152,4	305
120”	243,8	182,9	370
150”	304,8	228,6	460
180”	365,7	274,3	550
200”	406,4	304,8	605
250”	508,0	381,0	755
300”	609,6	457,2	900

- If the measurement of the screen diagonal is not in the table, **C** can be determined (in cm) as follows.
- Measure the screen diagonal and take the nearest value from the table.
- Calculate the ratio between value **C** and screen width in the table.
- Multiply the result by the actual screen width.

Example: *Suppose we have a 105" screen diagonal. 100" is the nearest value in the table.*
Ihe C/Width ratio is equal to :305/203.2=1,5.
A105" screen diagonal is 213.3 wide.
So, the value of C is: 1,5x213,3=320 cm.

Note: ***The screen size refers to the useful area (4/3 format).***

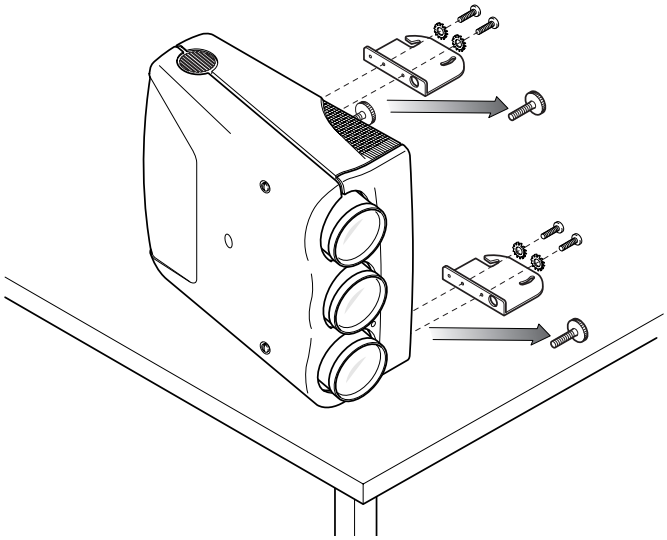


4.3.4 Ceiling front projection

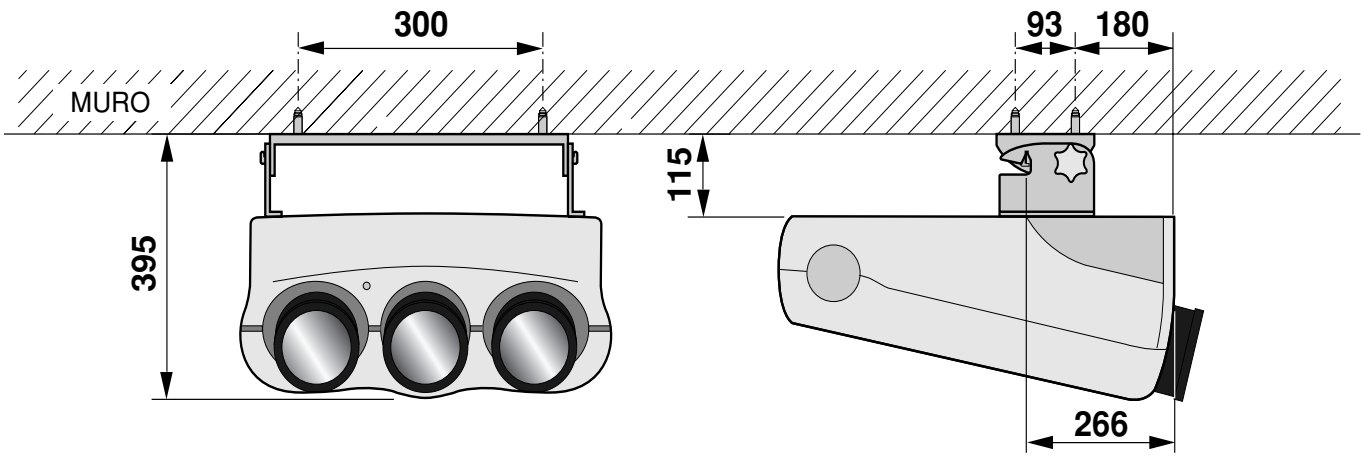
The use of the correct spacers as shown in the spacers table is mandatory for a perfect focus uniformity.
Use the ceiling assembly kit (given with the projector) to install the projector on the ceiling and proceed as follows:

WARNING:
The installer must verify that the ceiling can support the projector load. The bracket must be fixed properly and be absolutely parallel with the screen

1- Fix the bracket, included in the pack, to the ceiling with the four screws supplied.
2- Put the projector on a table in the vertical position (sideways)
3- Fasten the left bracket with 2 screws and washers.

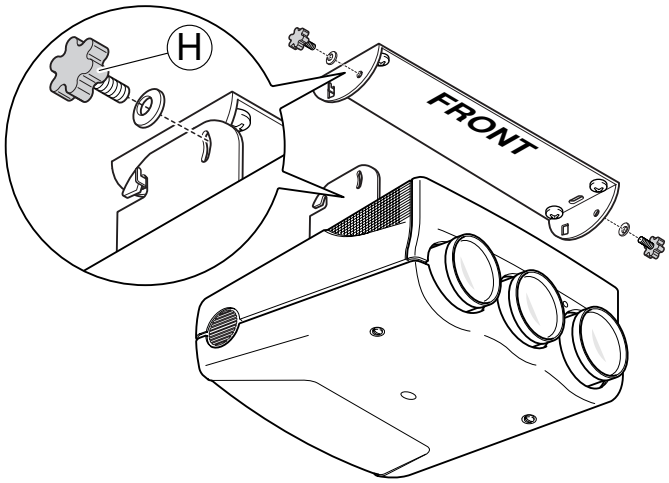


4- Repeat the steps above for the right bracket.

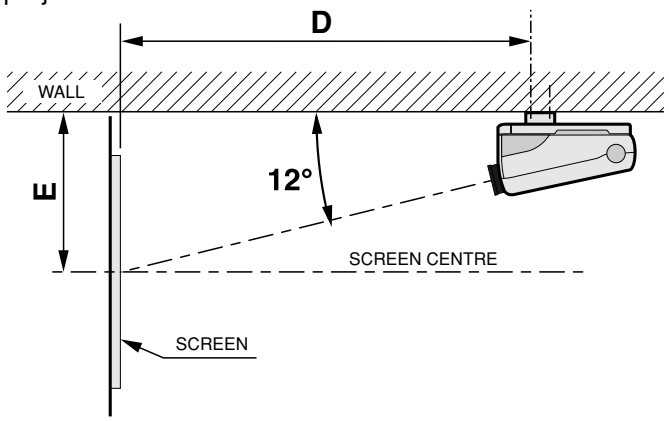


5- Turn the projector upside down and hang on the ceiling with the assembly brackets.
6- Tilt the projector to centre the vertical picture and screw the two securing screws (H)

Note: Insert the special curved washers between the ceiling bracket and the securing screws. For a correct installation the concave surface of the washer should be towards the bracket. For safety purposes, use only the assembly kit supplied.



Note: the tilting angle between the base plane of the projector and the lenses' axis should be 12°.



Multimedia S.P.A. declines all responsibility for damages to persons or things caused by incorrect or careless installation which must be effected by a qualified technician.

TABLE 3: CEILING FRONT PROJECTION.

SCREEN SIZE Useful area 4/3			D
Diagonal (Inches)	Width (cm.)	Height (cm.)	(cm.)
60"	121,9	91,4	204
80"	165,5	124,9	263
90"	182,9	137,2	283
100"	203,2	152,4	322
120"	243,8	182,9	383
150"	304,8	228,6	473
180"	365,7	274,3	563
200"	406,4	304,8	618
250"	508,0	381,0	768
300"	609,6	457,2	918

D = Distance between the line of the first hole of the assembly bracket and the screen.

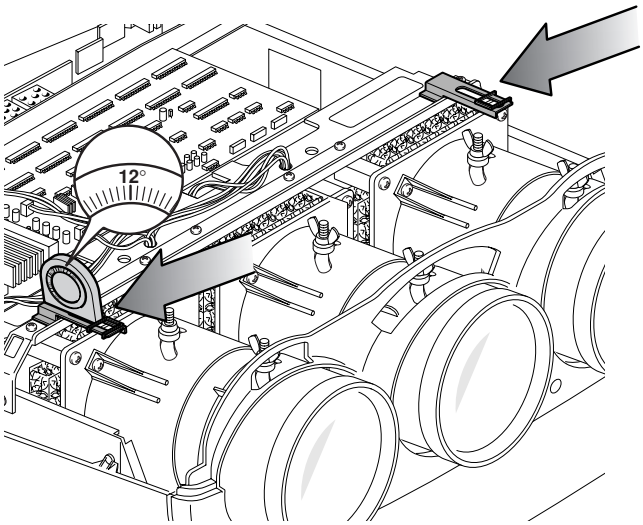
Note: ***The screen size refers to the useful area (4/3 format).***

4.3.5 Ceiling rear projection

Rear projection installation is done by hanging the projector on the ceiling and following the instructions given for front installation.

4.4 Projection angle measurement

Use a goniometer to determine the projection angle. First of all, remove the projector's top cover and then use the surface shown in the figure as reference for the goniometer.
The reference surface has an angle of 12 degrees compared to the projector's base when it is perfectly level.



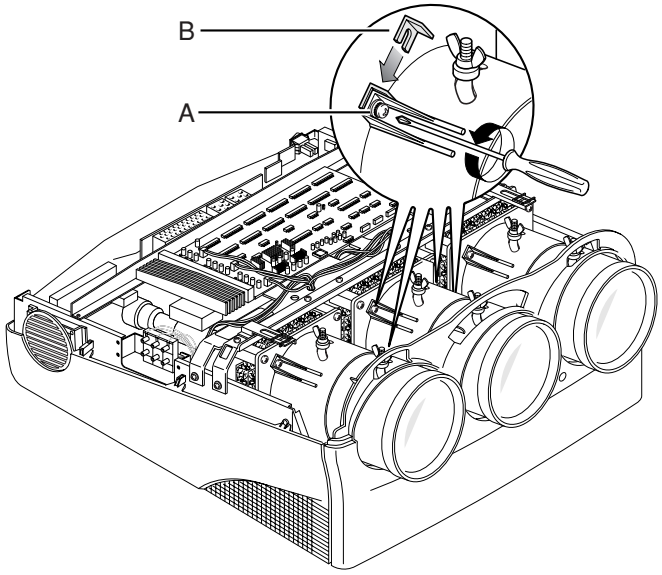
4.5 Spacers

The projector uses some spacers for the "Scheimpflug" correction of the lenses' angle so as to achieve a perfect focusing uniformity over the entire screen surface.
The projector is factory set with spacers for a ceiling front installation with a 90" screen diagonal.
The projector is equipped with a complete set of optional spacers for screens ranging from 60" up to 300".
The spacers are mounted between the lenses and the assembling block surface where they are fixed with 4 screws.
More than one spacer might be needed to achieve proper adjustment.

Lorrect use ***of the spacers****, as shown in the tables, is of paramount importance for perfect focus uniformity.*

4.5.1. Spacers changing

To change the spacers first of all remove the top cover and front panel.
Now slightly loosen the 4 screws (**A**) for each tube, change the spacers (**B**) (**see the spacers table**) and then tighten the screws.
You can only see two screws in the figure because the other two are under the projection tube.



For the different installation types there are different spacer combinations that have to be mounted.

Note: The spacers have their thickness value expressed in millimetres and printed on them.

The following pieces are included with the projector:

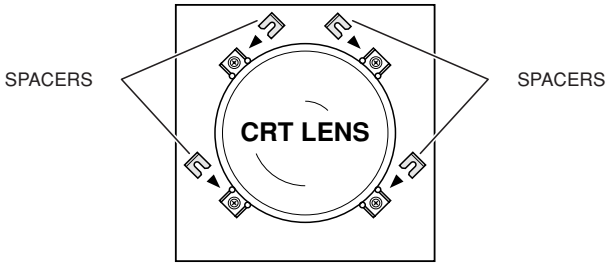
0,2	mm:	6 pieces
0,3	mm:	6 pieces
0,5	mm:	4 pieces
1	mm:	6 pieces
2	mm:	4 pieces

The 1mm (6 pieces), 0.3 mm (4 pieces) spacers are used for the factory setting (90" 14°), while the others are inside the pack.

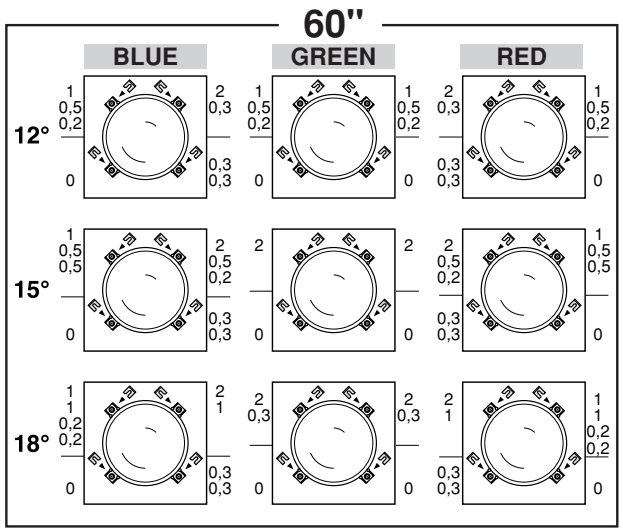
Note: The angle between the base of the projector and the axis of the tubes is mechanically fixed at 12°; so, if the projector is installed on a perfectly horizontal table or ceiling, projection angle will be 12°.

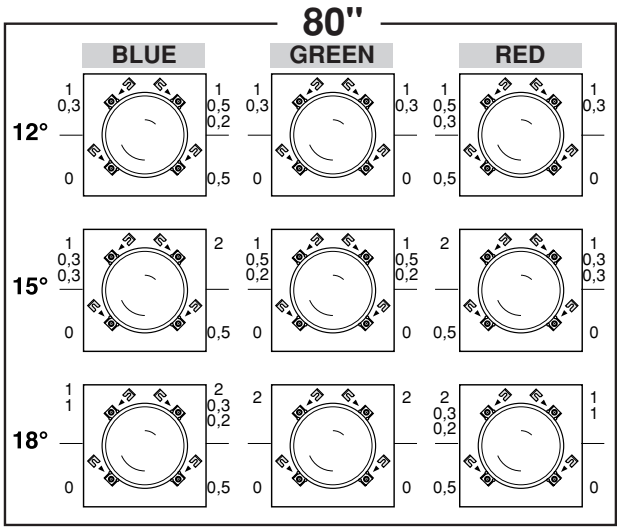
The figure shows where to install the spacers with the values given in the following table.

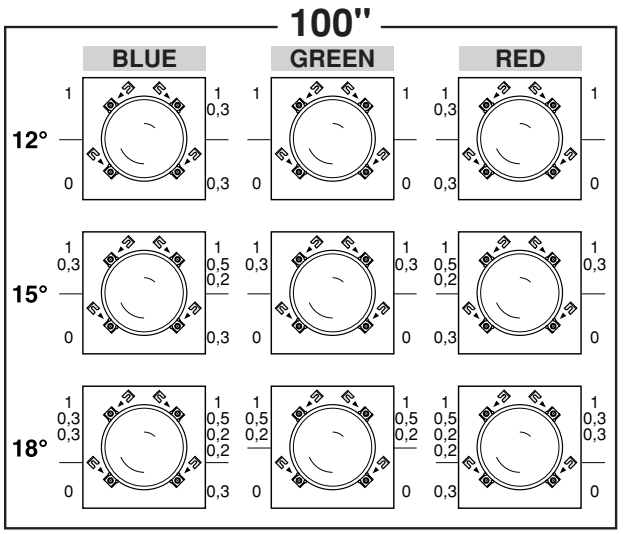
Front view of the CRT.



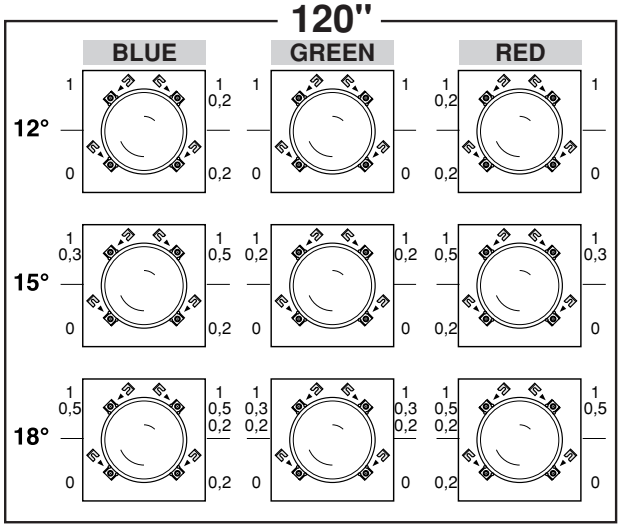
4.5.2 Spacers table



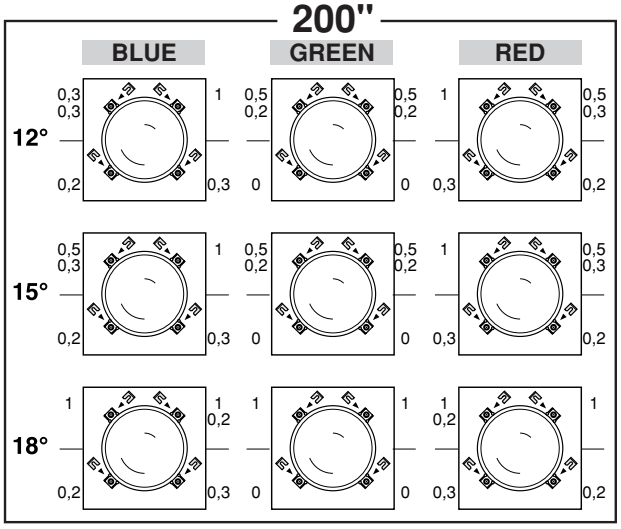




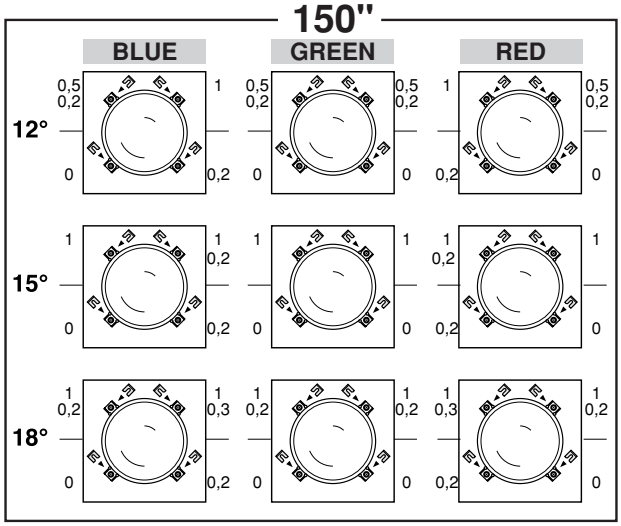
120"



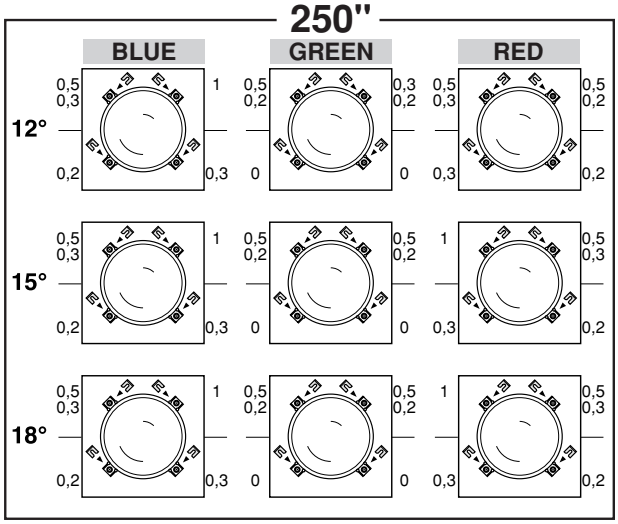
200"



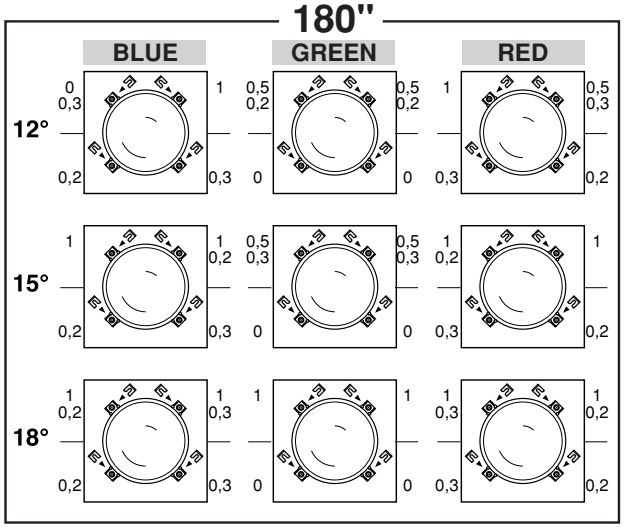
150"



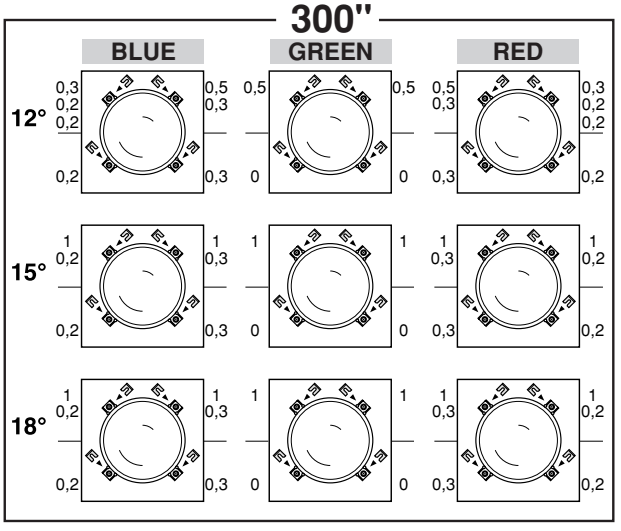
250"

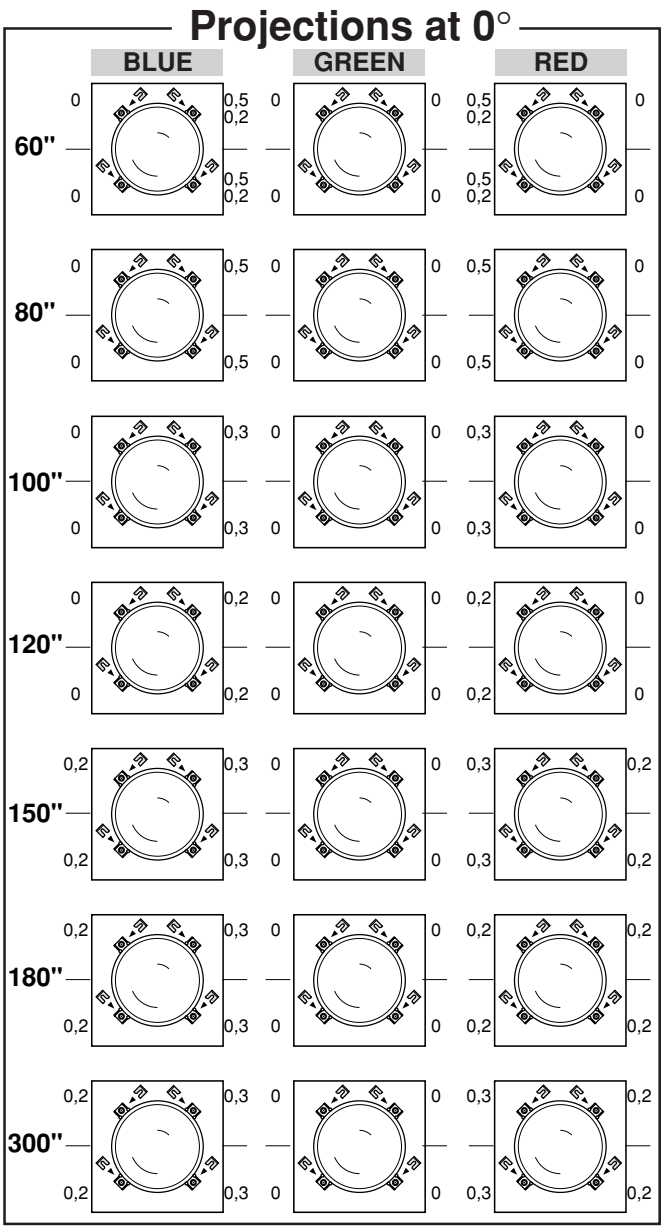


180"



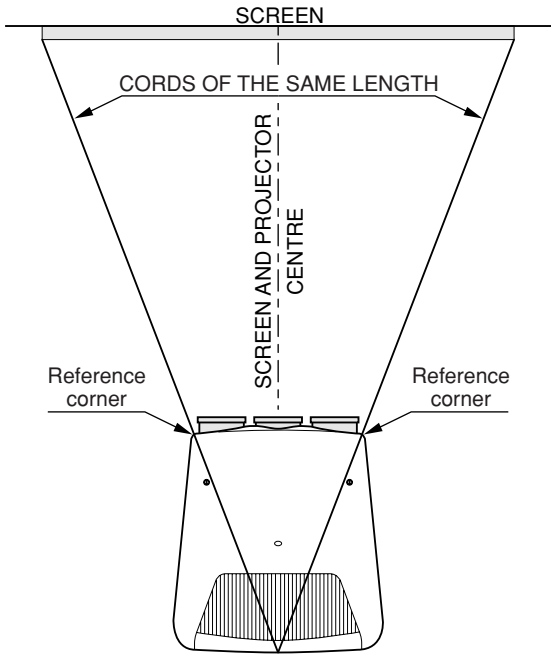
300"





4.6 Projector centering

The first step towards a good installation is centering the projector with respect to the screen. This can be done using two pieces of equally long cord, as illustrated in the following figure:



It is necessary to check that the position of the two corners at the front of the projector is centred with respect to the position of the cords, as illustrated in the figure.
Once you have done this you can be sure that the screen and the projector are orthogonal and centred, essential conditions for the best performance.

4.7 Optical and electrical adjustments

Turn the projector on with the main switch on the left of the rear panel; the red pilot light indicates the stand-by state.

If the projector remains in stand-by press the ⏻ button on the remote control or the ◄ or ► arrow buttons on the rear panel. The green pilot light indicates the projector is on.

To turn the projector off, press ⏻ or the main switch.

Proceed with installation using the internal test patterns. They can be used by pressing TEST on the complete functions remote control **(RC3000)** and selecting the most appropriate test signal.

4.8 Lens focus adjustment

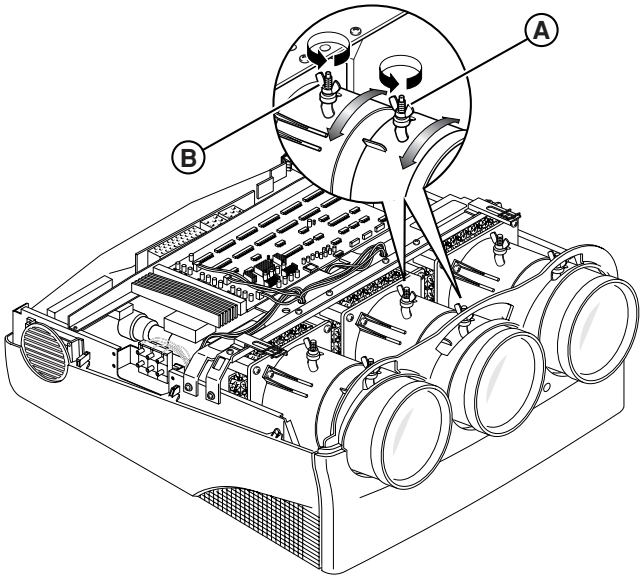
Each lens must be focused individually with the tubes on, one at a time and following this procedure:

1. Select the **HATCH** test pattern by pressing the **TEST** button on the remote control. An external pattern signal can be used if you prefer.

2. Adjust with a low contrast (e.g. 30) and a medium-low background brightness (e.g. 40)

3. Turn the other tubes off using the push buttons **R,G,B,** on the remote control.

4. Loosen the wing screw (**B**) of the green lens, turn the lens assembly either to the right or left to adjust the focus of the picture in the middle of the screen and then tighten the screw. (**B**).



5. Loosen the wing screw (**A**) of the green lens, turn the lens assembly either to the right or left to adjust the focus of the picture on the borders of the screen and then tighten the screw (**A**).

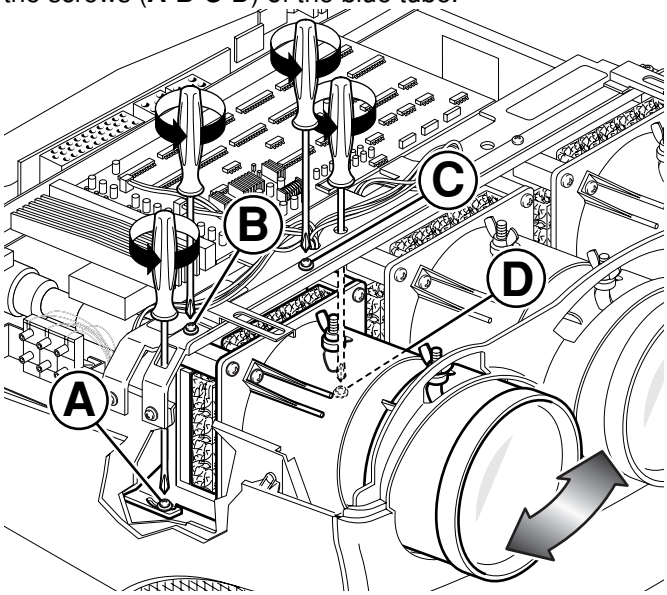
6. Look at the screen closely and check the result; repeat the adjustments if necessary.

7. Repeat steps 3, 4 and 5 for the red and blue lenses

Attention:
DO NOT move the electrostatic focus adjustment potentiometers. They were factory-set and should only be adjusted by qualified personnel.

4.9 Mechanical centering of the tubes

Select the **CROSS HATCH** signal with the remote control. For an installation different to factory setting (90") the mechanical centering of the red and blue tubes needs to be adjusted.
Looking at the following figure, unscrew (only 2 turns!) the screws (**A-B-C-D**) of the blue tube.



Physically move the tube until the blue cross is perfectly over the green. **Tighten the four screws when you have finished.**

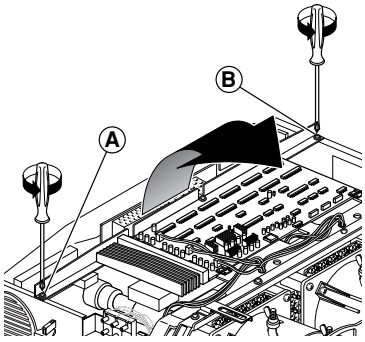
Repeat this procedure again for the red tube.

At this point it is necessary to recheck the focus of the red and blue.

4.10 Magnet adjustment

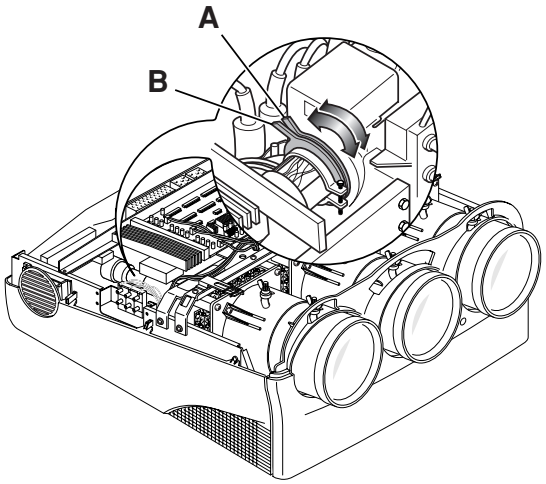
If you wish to change the adjustment set at factory, read this chapter through.

1. Switch on the projector without changing the factory setting.
2. Use a monoscope signal (or a signal with central reference) as input signal and mark the picture centre on the screen.
3. Switch off the video projector.
4. Carry out the appropriate deflection settings.
5. Unscrew the 2 screws on the bracket in the projector centre and turn the convergency card as indicated in the figure.



6. Turn on the projector.
7. Select the type of installation by means of the remote control **RC 3000.**
8. Use the menu DEF CENT (H and V) by means of the remote control **RC 3000** to shift the picture on the screen.

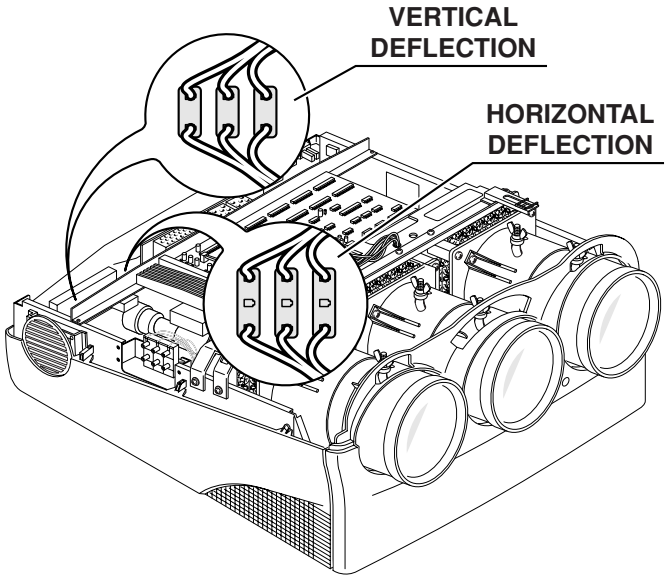
Observe the following instructions, only if the image is not centered in the tube.

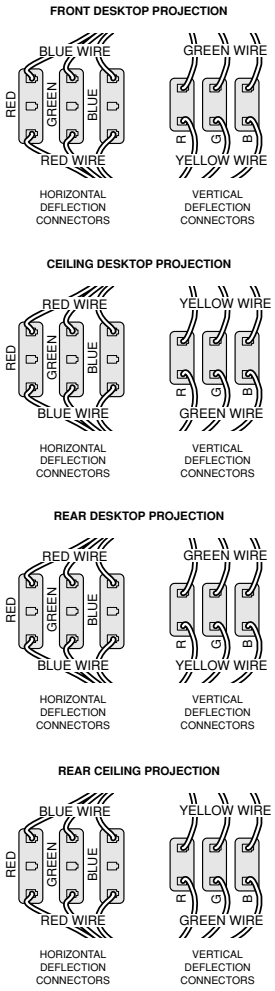


9. Use the yoke rings (centering magnets A and B) to shift the green tube image onthe centre of the screen reference point. Repeat the procedure for each tube.

4.11 Setting of deflection connectors

Looking at the projector from the back panel, on the right side near the blue tube, there are 3 connectors for horizontal deflection and 3 more for vertical deflection, see following figure.
The setting of the deflection connectors must be carried out as in the following pictures:





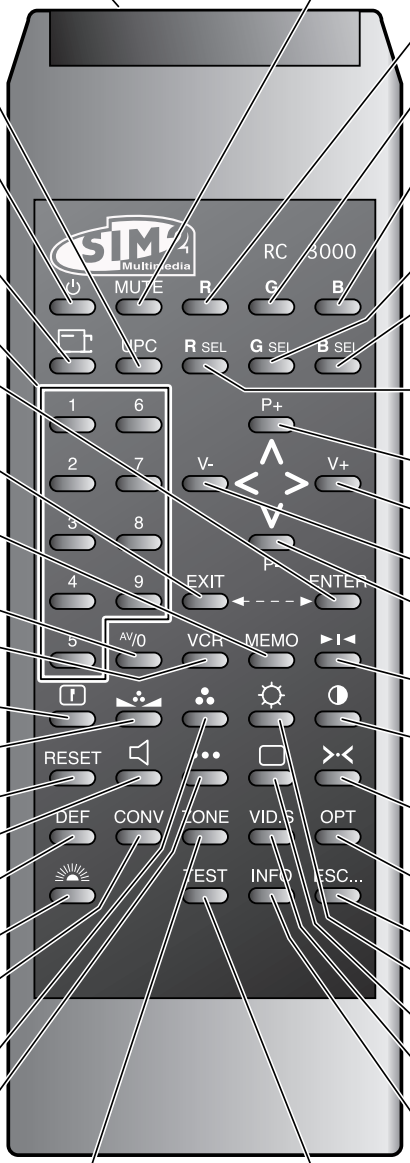
4.12 Convergence adjustment

To adjust convergence you must read very carefully the chapter concerning convergence adjustment from the remote control.

5 THE COMPLETE FUNCTION RC3000 REMOTE CONTROL

5.1 Complete function RC3000 remote control

There are two remote controls for the video projector. One, the RC3000, is a complete function remote control used to install the projector while the other one, the RC3100, is for normal use. Both control the projector with infrared rays. With the RC3000 remote control you can connect via cable directly to the video projector's IR input so as to avoid any technical problems.
N.B.: (The cable is supplied with the projector. Standard length is 8m.).
The following pages explain the functions of the buttons on the RC3000 remote control.



Turns the UPC converter on/off.

Jack connector for main cable.

Switches the picture on/off.

Switches the red tube on/off.

Switches the green tube on/off.

Switches the blue tube on/off.

Turns the video projector on/off.

Selects one of the available screen formats (Small, Normal,Wide,Cinema,LetterBox)

Switches the green channel adjustments on/off. In the video menu it lets you change the white balance.

Selects the right input directly.

Switches the blue channel adjustments on/off. In the video menu it lets you change the white balance.

Confirms current choice or goes to the next page in the current menu.

Switches the red channel adjustments on/off. In the video menu it lets you change the white balance.

Returns to the previous menu or page.

Stores video settings.

Up arrow.

Displays the selected video input menu.

Right arrow.

Selects FAST or SLOW sync filter.

Left arrow.

Down arrow.

Adjusts peaking.

Still frame (FREEZE).

Adjusts hue for the NTSC standard.

Adjusts contrast.

Resets the adjustments made.

Restores the normalised values of brightness, contrast, colour, hue, peaking.

Not active.

Enters the options menu.

Enters the deflection menu

Exits any menu.

Lights up the remote control buttons.

Adjusts brightness.

In the installation mode, it lets you enter the convergence menu.

Enters the video menu or adjusts brightness, contrast, colour, hue, peaking.

Adjusts colour (saturation).

Enters the video installation menu.

Stores peaking normalized adjustments: brightness, contrast, colour, hue.

In the installation mode itletsyouenterthezones menu.

Generates a test signal selectable from eight different ones.

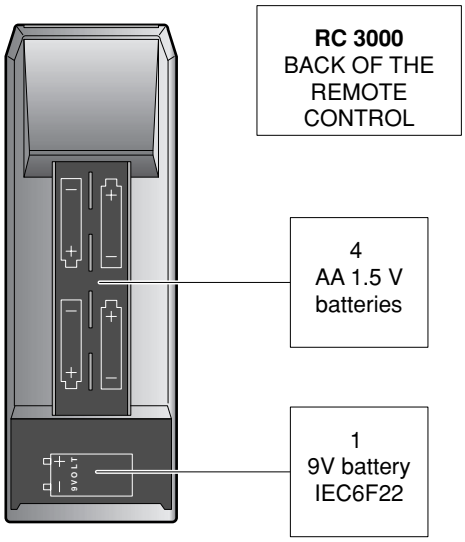
Displays projector information.

5.2 Batteries

Handling the remote control and batteries:

- Avoid exposing the remote control to heat and humidity
- When not using the remote control for a long period of time, remove the batteries.
- Avoid using the RC 3000 remote control with the infrared control and service light on for a long time as battery life would then be reduced.
- Do not use new and old batteries together or batteries of a different voltage or type.
- Handle the remote control with care.
- Use the remote control within its operating range (about 10 metres and a 30° angle)

Note: *The RC3000 remote control is powered by AA 1.5 V batteries*



5.3 How the RC 3000 remote control works

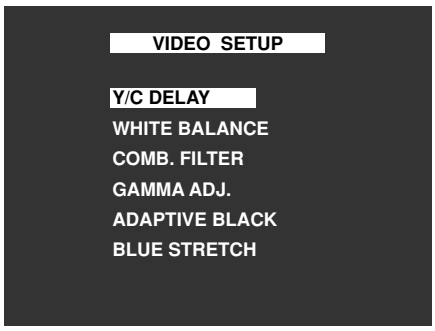
Some buttons of the RC3100 remote control having the same icons of the RC3100 perform the same function, so the description is not repeated. The following paragraphs describe the functions of the RC3000 remote control.

5.4 Video setup

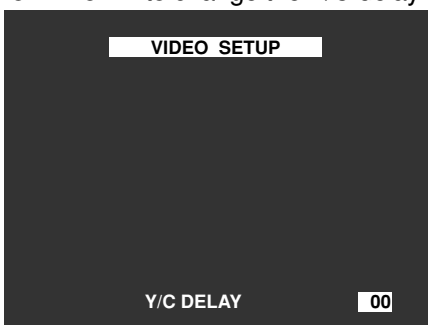
5.4.1 To change the Y/C delay.
5.4.2 To switch on/off the comb filter.
5.4.3 To setup the gamma adjustment.
5.4.4 To switch on/off the adaptive black.
5.4.5 To switch on/off the blue stretch.

5.4.1 To setup the Y/C delay, you must enter the installation mode.

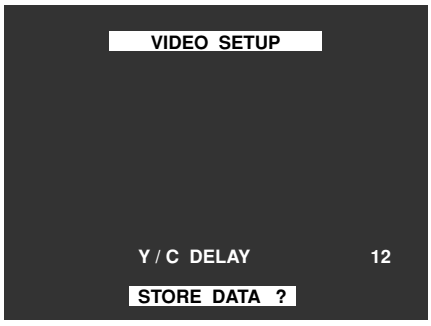
Press VID.S, the following menu will appear.



Use the arrow ▲ or ▼ to select the Y/C delay and press **ENTER** to confirm, the following menu will appear:
Use the arrow ◄ or ► to change the Y/C delay value.



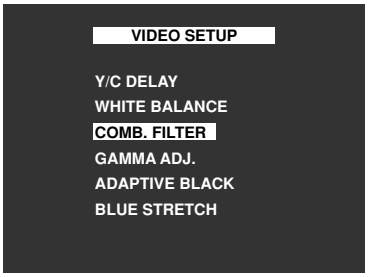
The value is correct when you are displaying a video signal with colour bars and they are not overlapping.
Upon pressing the **EXIT** button to return to the video setting menu, the following message will appear:



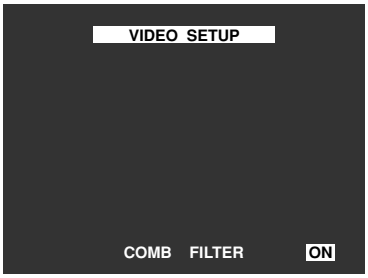
Press **ENTER** to confirm the setting or the **EXIT** button to exit. Press **EXIT** to return to the video setting menu.

5.4.2 To switch on/off the Comb filter, you have to enter in installation mode.

Press VID.S the following menu will appear:



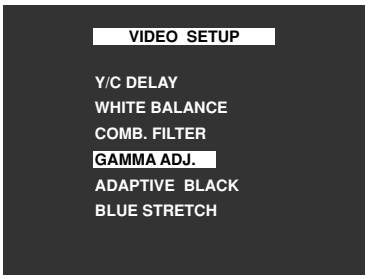
Use the arrow ▲ or ▼ to select the comb filter and press **ENTER** to confirm. The following menu will appear:



Use the arrow ◄ or ► to switch ON/OFF.
The comb. filter increase the separation between luminance and chrominance in order to avoid cross colour effects.
Press **EXIT** to go to the previous menu.

5.4.3 To setup the GAMMA ADJ., you must enter installation mode.

Press **VID.S** the following menu will appear:

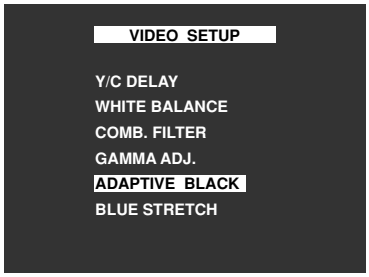


Use the arrow ▲ or ▼ to select the GAMMA adjustment and press **ENTER** to confirm, the following menu will appear:

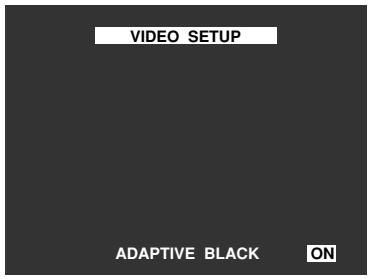
Use the arrow ◄ or ► to select the desired GAMMA value.
The GAMMA adjustment allows to make the best grey scale linearity, as the tubes have a different output level at different input levels.
Press **EXIT** to return to the video setup menu.

5.4.4 To switch on/off the DYNAMIC BLACK, you must enter the installation mode.

Press **VID.S** the following menu will appear:



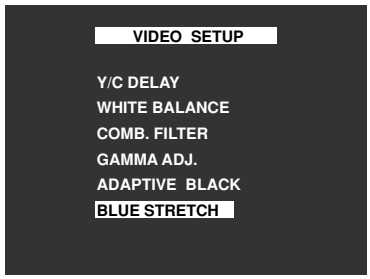
Use the arrow ▲ or ▼ to select ADAPTIVE BLACK and press ENTER to confirm, the following menu will appear:



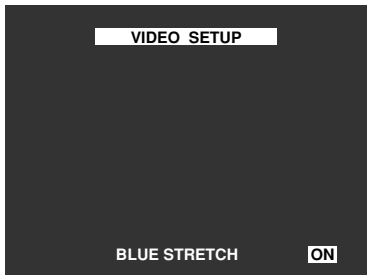
Use the arrow ◄ or ► to switch on/off the ADAPTIVE BLACK. Press **EXIT** to return to the video setup menu.

5.4.5 To switch on/off the BLUE STRETCH, you must enter the installation mode.

Press **VID.S** the following menu will appear:



Use the arrow ▲ or ▼ to select the BLUE STRETCH function and press **ENTER** to confirm, the following menu will appear:



Use the arrow ◄ or ► to switch on/off the BLUE STRETCH. This function allows to change the blue CRT output, in order to have the best quality for the images.
Press **EXIT** to return to the video setup menu.

5.5 Picture adjustment

To change the values of contrast, brightness, colour, hue, peaking directly, you can use the following buttons.

Press ◑ **CONTRAST**, select the contrast adjustment.
Press ◄ or ► to change the value.

Press ☼ **BRIGHTNESS**, select the brightness adjustment.
Press ◄ or ► to change the value.
Press **ESC** to exit.

Press ∴ **COLOUR**, select the colour adjustment
Press ◄ or ► to change the value.
Press **ESC** to exit.

Press ◣∴◢ **HUE**, select the hue adjustment only for NTSC signals
Press ◄ ► to change the value.
Press **ESC** to exit.

Press [f] **PEAK**, select the peaking adjustment
Press ◄ ► to change the value.
Press **ESC** to exit.

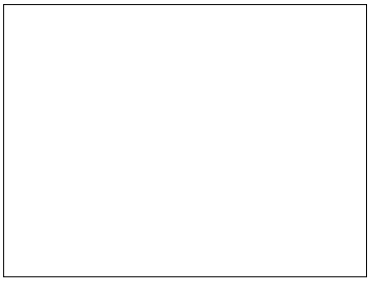
Press **MEMO** if you want to store all settings, when one of the functions is displayed.
Press **ESC** to exit.

N.B.: *Whenever you press the >·< button, the previously stored values of the displayed signal bank are recalled.*

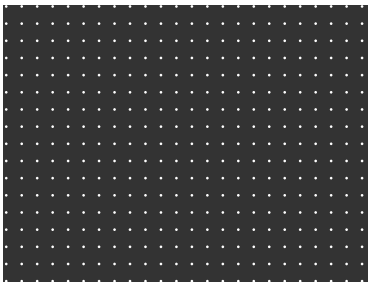
5.6 Test pattern

To select a test pattern, press **TEST**. One of the eight test patterns will appear.

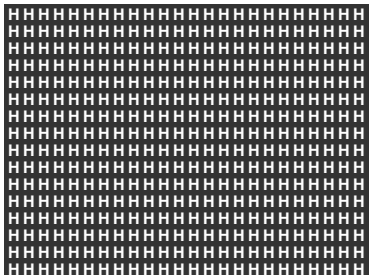
WHITE



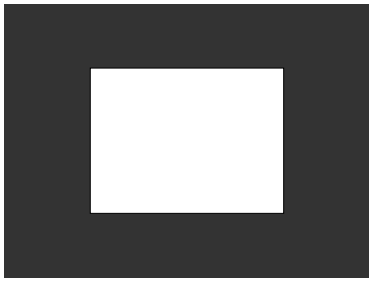
DOTS



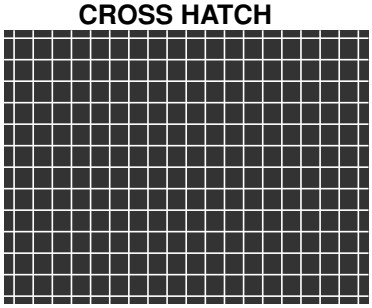
H PATTERN



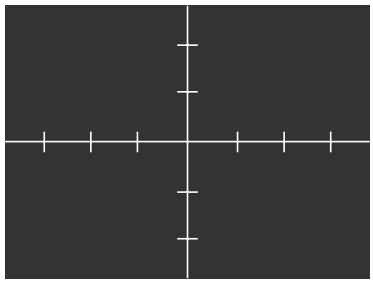
WINDOW



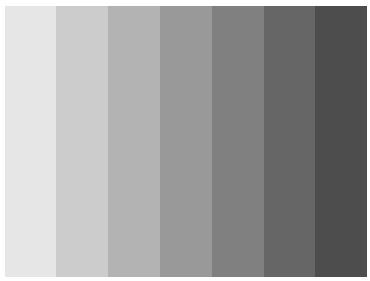
CROSS HATCH



CROSS HAIR



COLOUR BARS

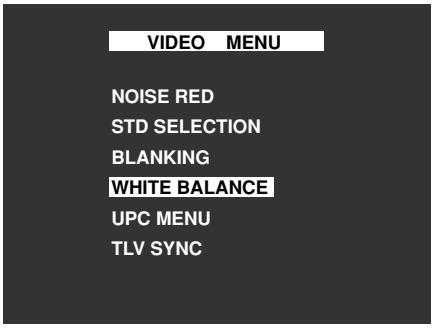


Whenever you press the TEST button the previous pictures will appear, sequentially. Press **ESC** to exit.

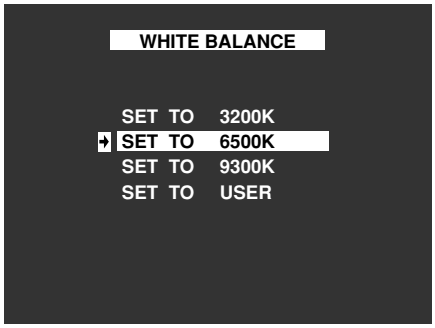
5.7 White balance

To select one of the set colour temperatures (3200°K,6500°K, 9300°K, USER BANK) for the projected images.

To select one of the colour temperatures, proceed as follows: press the button ▢ for a few seconds, the following menu will appear:



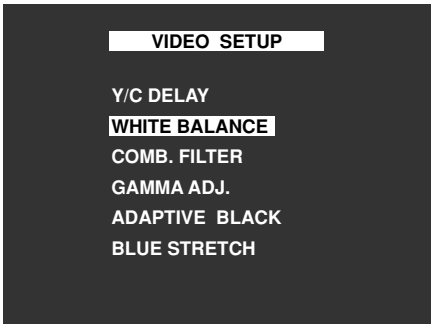
Use the arrow ▲ or ▼ to select WHITE BALANCE and press **ENTER** to confirm, the following menu will appear.



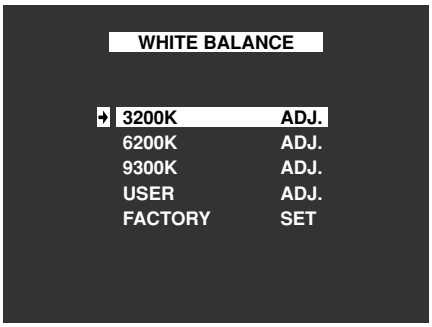
The arrow on the left of the window indicates the current setup.
Use the arrow ▲ or ▼ to select a setting and press **ENTER** to confirm.
The SET TO USER is an optional setup.

This adjustment must be carried out by a qualified technician.

To change the colour temperature settings, you must enter in the installation mode.
Press the button **VID.S**, the following menu will appear:

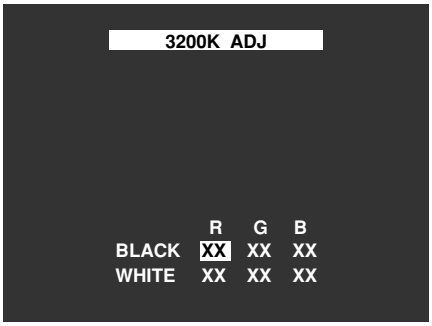


Use the arrow ▲ or ▼ to select the WHITE BALANCE adjustment and press **ENTER** to confirm, the following menu will appear:



FACTORY SET: if you select this item, the system will utilize the preset manufacturer regulations.

Use the arrow ▲▼ to select a colour temperature to change and press **ENTER** to confirm, the following menu will appear:



Press **R**, **G**, **B**, to select the BLACK R, BLACK G or BLACK B item.
Press **Rsel**, **Gsel**, **Bsel**, to select WHITE R, WHITE G or WHITE B item. The selected item willbe highlighted.
Use the arrow ◄ or ► to change the value.
Upon pressing the **EXIT** button to return to the video menu, the software wil ask you to store the new values with this message:

Press **ENTER** to confirm or **EXIT** to exit.
After having ended this procedure, the selected new colour temperature value willbe indicated by the arrow on the left of the window.

5.8 Memory manager

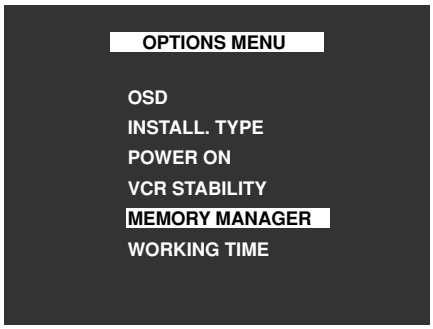
With this menu you can select, copy, move or delete a memory bank containing all the projector adjustments or to store new ones.

Each memory bank is described by:
1. a number
2. a name or label
3. an aspect ratio flag
4. a horizontal frequency
5. a vertical frequency.

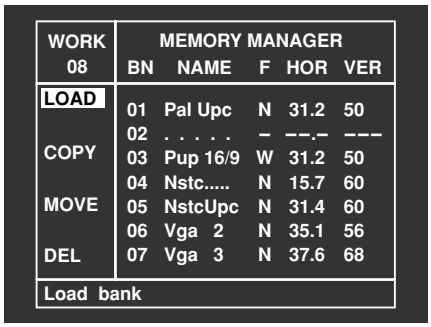
The name is a mnemonic label and it is written by the user. The aspect ratio flag indicates which aspect ratio has been stored by the user during the regulations setup. It is very important for the user to store the correct aspect ratio flag.
The **horizontal and vertical frequencies** ar measurd by the projector and stored inthe relevant memory bank each time you save a regulation setup. When the projector is switched on, the software automatically loads the last memory bank selected.

5.8.1 How to enter the memory manager

Press **OPT**, the following menu will appear:



Use the arrow ▲ or ▼ to select MEMORY MANAGER and press **ENTER** to confirm, the following menu will appear:



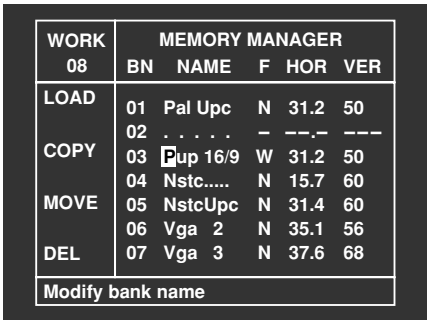
WORK 01: It indicates that bank 01 has been recalled. It is important when the input frequencies do not match those stored in the bank.
BN: Bank number.
NAME: Mnemonic bank name (Label)
F: Flag. With this function you can change the aspect ratio: Small, Normal, Wide, Cinema, Large.
HOR: Horizontal frequency. It is measured by the software and stored in the memory bank.
VER: Vertical frequency. It is measured by the software and stored in the memory bank.

5.8.2 How to insert a label

First of all, you must enter the memory manager.

Press the right arrow and use the ▲ up or ▼ down arrows to select in which memory bank you want to change the label.

Press **ENTER**, the following menu will appear:

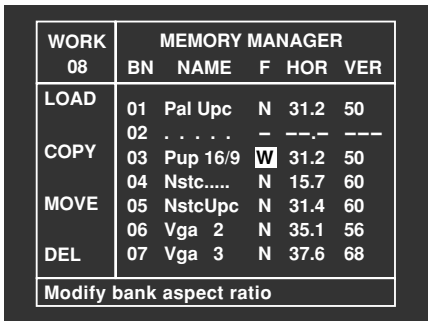


Use the arrow ▲ or ▼ to scroll the alphabet and the arrow ◄ or ► to skip at the next letter. After having written the correct label, press **ENTER** to confirm.

5.8.3 How to change an aspect ratio flag

First of all, you must enter the memory manager.

Press the right arrow twice. Select in which memory bank you wish to change the aspect ratio. Press **ENTER**, the following menu will appear:



Use the arrow ▲ or ▼ to select the desired ratio between: **Small, Letter Box, Cinema, Wide, Normal.**
Press **ENTER** to confirm and the following message will appear:

5.8.4 Horizontal and vertical frequencies

The horizontal and vertical frequencies are measured by the projector and stored in the relative memory bank each time you store a change.

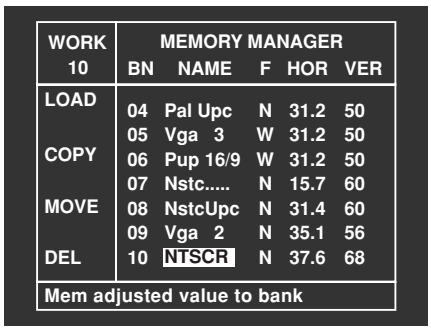
If the input signal does not match the frequency stored in the memory bank the software will automatically recall the memory bank with the frequency nearest to that of the input signal, in this order: horizontal frequency, vertical frequency, aspect ratio.

If the frequencies of the input signal are different from those stored in the memory bank, the software will not recognise the frequency and, if you store settings, it will ask to create a new memory bank.

5.8.5 How to store a new input signal

*To store a new input signal in a memory bank press **MEMO** and you will enter the MEMORY MANAGER mode.*

The following menu will appear:



The name of the first bank available will be highlighted. Use the arrow ▲ or ▼ to write a mnemonic name. Press the right arrow to select the aspect ratio and use the arrow ▲ or ▼ to select the desired one. Finally, press **ENTER** to store the new entry.
Should there be no signal, one having the following features will be stored: 31.25 KHz, 50 Hz. Press the arrow ◄ or ► to select field **F** and press **ENTER** to confirm the you wish to change the field. Use the arrow ▲ or ▼ to change the aspect ratio.
Press **ENTER** to confirm the selection or **EXIT** to exit.
Select the desired memory bank by means of the up or down arrows. Press **EXIT** to exit.
Press **ENTER** to confirm and store the data.
Use the left or right arrow to select only the name of the bank. Press **ENTER** to enter in the writing mode and change the letters by means of the up or down arrow.
Press **ENTER** to confirm the name or **EXIT** to exit the menu.
Use the up or down arrows to select one of the following functions: Loading, Copy, Move, Delete and press **ENTER** to confirm.
Use the button to go from the right side of the menu to the left one and go back by means of the **EXIT** button.

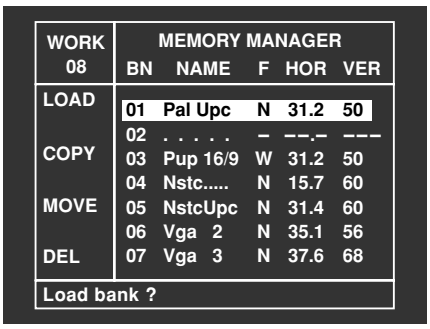
To exit this menu, press **EXIT**. The projector will indicate the previous menu. Press **ESC** to exit.

5.8.6 Load

This item on the MEMORY MANAGER menu allows the user to load and change a memory bank containing all the projector adjustments.

This is possible only if there is a match between the input frequencies and the frequencies stored in the memory bank.

Use the arrow ▲ or ▼ and the left arrow to select **LOAD**. Press **ENTER** to confirm, the following menu will appear:
Use the arrow ▲ or ▼ to select un memory bank from 01



to 25 and press **ENTER**. The following message will appear under the table:

Press **ENTER** to confirm or **EXIT** to exit.
If the input signal frequencies (horizontal and vertical) do not match the selected memory bank, the following message will appear under the table.

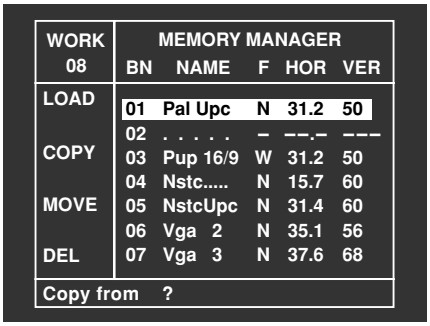
If they do, the following message will appear:

Upon pressing **ENTER**, the memory bank number will appear under the label **WORK**.
Press **EXIT** to exit this menu. The video projector will take you back to the previous menu.
Press **ESC** to enter the menu again.

5.8.7 Copy

This function allows you to copy a memory location containing settings in another location.

Use the arrow ▲ or ▼ to select **COPY** and press **ENTER**, the following message will appear:

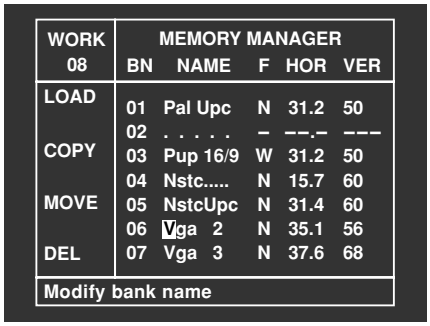


Use the arrow ▲ or ▼ to select a memory bank (from 01 to 25) to be copied and press **ENTER**.

The chosen bank will be highlighted. The following message will appear:

Use the arrow ▲ or ▼ to select a memory bank (from 01 to 25) where to copy the information and press **ENTER** to confirm. The following message will appear:

Press **ENTER** to confirm. If the destination bank is available, the projector will ask you to insert a name for the bank and the following message will appear:



Use the arrow ▲ or ▼ to select the name's letters (LABEL). Use the arrow ◄ or ► to change the cursor position. Repeat the procedure until the name is complete, then press **ENTER**. The following message will appear:

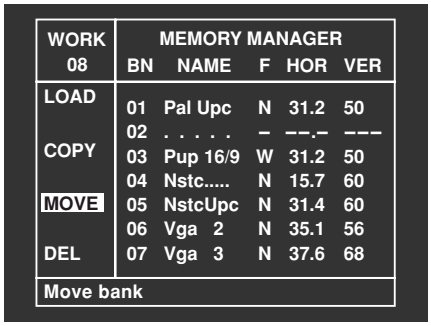
Press **EXIT** to return to the previous menu.
Press **ESC** to display the output video signal.

Note: The copy will be made even if the horizontal and vertical frequencies do not match those of the video input signal.

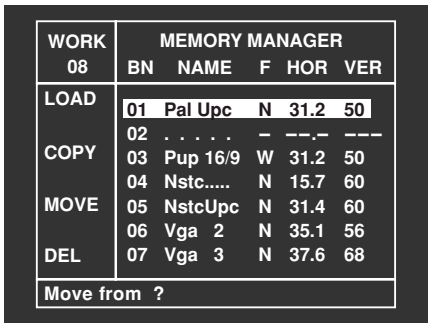
5.8.8 Move

This function allows you to move a memory bank to another position on the list

Use the arrow ▲ or ▼ to select **MOVE.**



Press **ENTER** to confirm. The following message will appear:



Use the arrow ▲ or ▼ to select a memory bank (01 to 25) and press **ENTER** to confirm. The following message will appear:

Use the arrow ▲ or ▼ to select a destination bank available (01 to 25) and press **ENTER**. The following message will appear:

Press **ENTER** to confirm, the following message will appear:

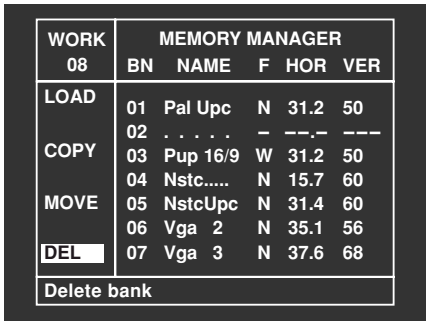
Press **EXIT** to return to the previous menu.
Press **ESC** to repeat the procedure.

Note: If the destination bank is not free, the projector will overwrite the information, thereby causing the loss of all previously stored data.

5.8.9 Delete

This function allows you to delete a memory bank.

Use the arrow ▲ or ▼ to select the **DELETE** function**.**



Press **ENTER** to confirm. The following message will appear:

Use the arrow ▲ or ▼ to select a memory bank to delete and press **ENTER**. The following message will appear:

Press **ENTER** to delete the memory bank, the following message will appear:

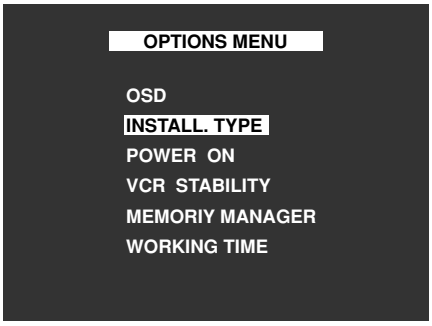
The cursor will return to the left of the menu.
If the memory bank you are deleting is the one in use, it will be deleted and the first bank with the same input signal frequency will be loaded.

5.9 Installation types

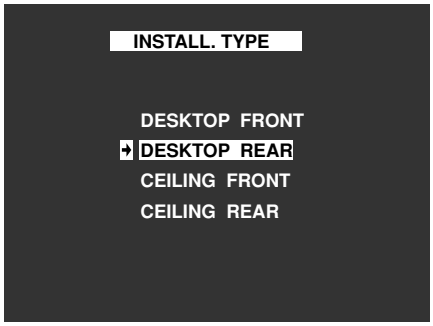
To select the type of installation.

To select the **TYPE OF INSTALLATION**, you must enter the installation mode.

Press **OPT**, the following menu will appear:



Use the arrow ▲ or ▼ to select INSTALL. TYPE and press **ENTER** to confirm.



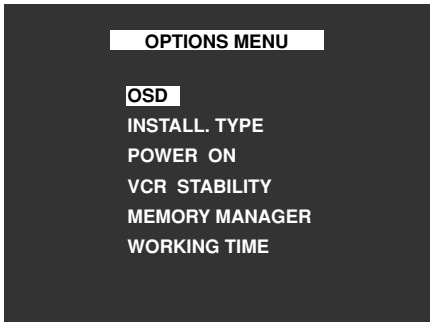
Use the arrow ▲ or ▼ to select the type of installation.
Press the button **ENTER** to confirm.
The arrow on the left indicates the current type of installation.
Press **EXIT** to return to the previous menu.

5.10 Options menu

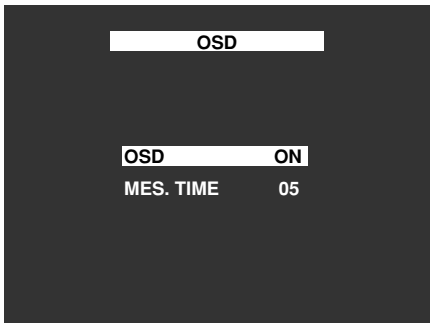
To set the message parameters.
To set the power ON.
To switch on/off the VTR stability.

To switch on or off the On Screen Display, you must enter the installation mode.

Press **OPT**. The following menu will appear:



Use the arrow ▲ or ▼ to select **OSD** and press **ENTER** to confirm, the following menu will appear:

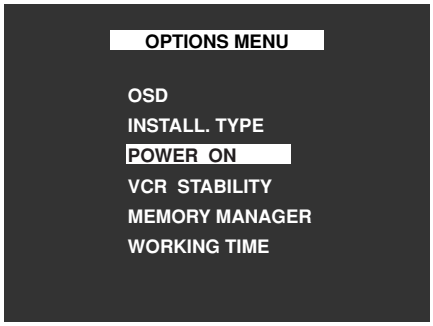


Use the arrow ▲ or ▼ to select **OSD** and the arrows ◄ or ► to switch on or off the messages. If **OSD** is off, no messages will be displayed on the screen when you change contrast, brightness, etc.

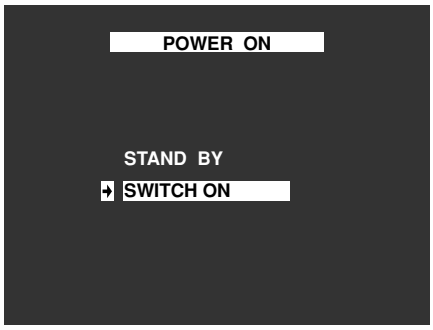
To change the displaying time.

Use the arrow ▲ or ▼ to select **DURATION**, and the arrow ◄ or ► to change the displaying time for the messages on the screen (in seconds).
Press the button **EXIT** to return to the previous menu.

To switch the projector on/off automatically or via remote control.
It is possible to decide to leave the projector in a stand-by condition or to switch it on, after a temporary power cut-off; in order to do so, you must enter installation mode.
Press **OPT**, the following menu will appear:

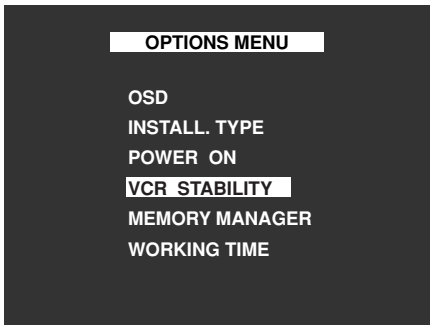


Use the arrow ▲ or ▼ to select **POWER ON** and press **ENTER** to confirm.
The arrow indicates the current selection.

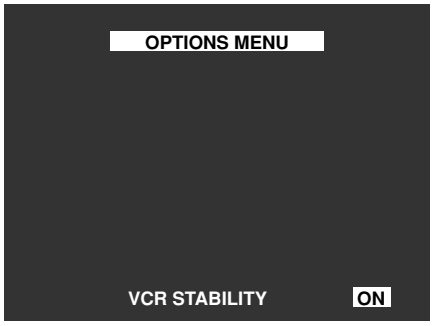


To switch on or off the VCR stability, you must enter the installation mode.

Press the **OPT** button, vi apparirà the following menu:



Use the arrow ▲ or ▼ to select **VCR STABILITY** the following menu will appear:



Use the arrow ◄ or ► to switch on or off this function.
Whenever **VCR** stability is on, the video projector will decode a signal with anti-copy codification.
Press the **EXIT** button to return to the options menu.

5.11 Fine picture adjustments

This paragraph is very important to achieve a perfect fine adjustment of the projector once it has been installed.
Read the following pages carefully.

It is very important to synchronise the projector with the most frequently used input signals. The settings of each signal type must be stored in a memory bank.

5.12 Deflection

First of all you must enetr the installation mode.

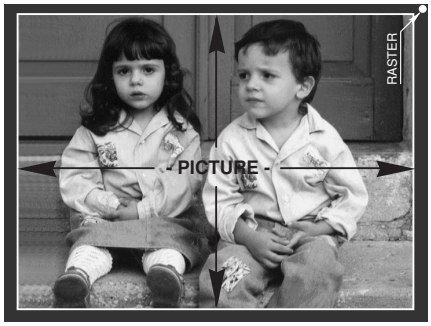
Press **DEF** to enter the deflection adjustment mode. Now you can carry out all the adjustments necessary to align the green tube image to the screen centre.

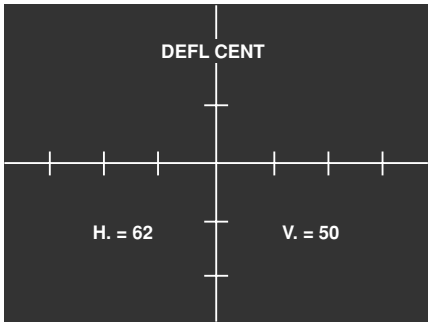
Throughly read these instructions if you are not familiar with these adjustments

5.12.1 Deflection centre

The horizontal control DEF CENT is a PHASE control and it does not affect the inner test patterns.

This function allows to centre the output signal image as to the raster: you gain access to this menu by means of the **DEF** button.

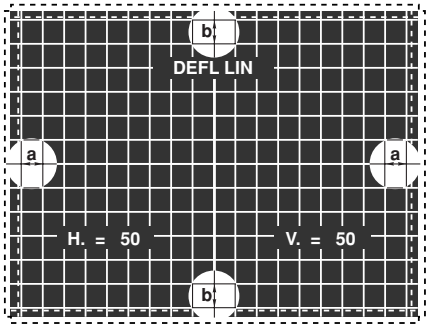




Use the arrow to centre the raster on the screen.
Press **ENTER** or **EXIT** to change function.
Press **ESC** to exit.

5.12.2 Deflection linearity

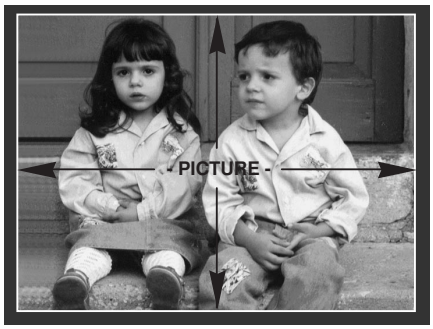
This function allows to change the distance between lines, until they are equally distant.

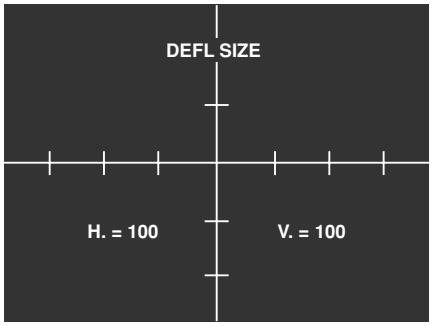


Use the arrow ◄ or ► to change horizontal linearity.
Use the arrow ▲ or ▼ to change vertical linearity.
Press **ENTER** or **EXIT** to change function.
Press **ESC** to exit.

5.12.3 Deflection dimensions

This function allows to change the dimensions of the raster.



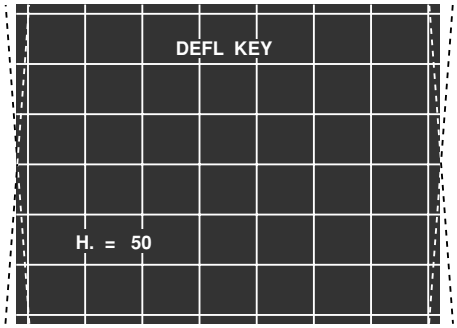


Use the arrow to change the value.
Press **ENTER** or **EXIT** to change function.
Press **ESC** to exit.

The raster dimension is strictly connected to the video projector resolution. The smaller the raster, the lower the resolution.

5.12.4 Keystone correction

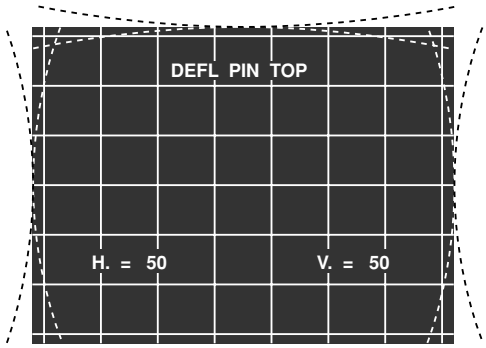
This function allows to modify the vertical keystone.
Use the arrow ◄ or ► to change the vertical keystone setup.



Press **ENTER** or **EXIT** to change function.
Press **ESC** to exit.

5.12.5 Deflection pincushion top

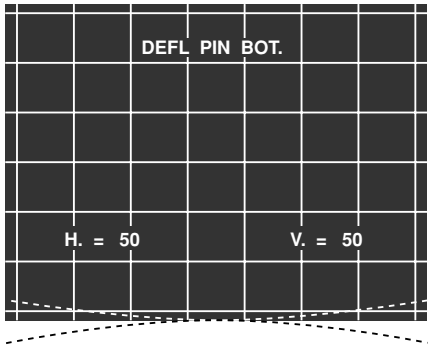
This funtion allows to change top and horizontal pincushion.



Use the arrow ▲ or ▼ so that the top horizontal lines are straight.
Use the arrow ◄ or ► so that the vertical image borders are straight.
Press **ENTER** or **EXIT** to change function.
Press **ESC** to exit.

5.12.6 Deflection pincushion bottom

This funtion allows to change bottom and horizontal pincushion.



Use the arrow ▲ ▼ so that the bottom horizontal lines are straight.
Use the arrow ◄ ► so that the vertical image borders are straight.
Press **ENTER** o **EXIT** to change function.
Press **ESC** to exit.

Note: It could be necessary to repeat the regulation loop more than once. If the projector is well positioned, it will only be necessary few small adjustments.

5.13 Convergence

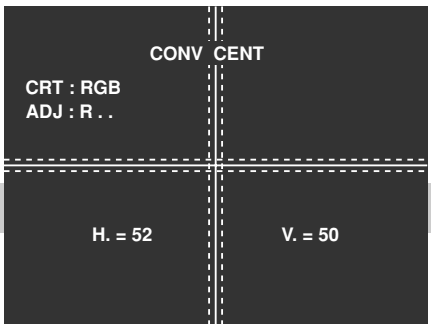
It is necessary to modify the green CRT convergence only for the multiprojection.

After having changed the green deflection; you must try to obtainb the best superimposion of the red snd the blue on the green.

5.13.1 Central convergence

This function allows to overlap the blue and red images on the green one, at the centre of the screen.

Press **CONV**. The following menu will appear:

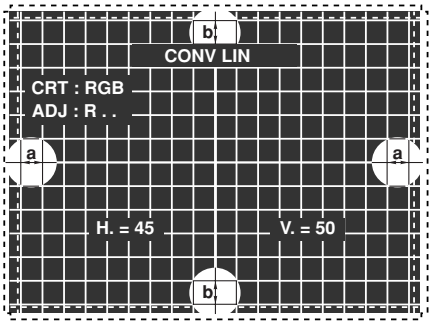


Use the buttons **R,G, and B,** to switch on/off the tubes.
The **CRT** message: **RGB** shows which tubes are on. Use the buttons **Rsel, Gsel, Bsel,** to select on which tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** o **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.2 Convergence linearity

This function is used to modify the distance between the cross hatch lines until they are equal.

Use the arrow ▲ or ▼ to change the vertical linearity, and



the arrow ◄ or ► for the horizontal one.

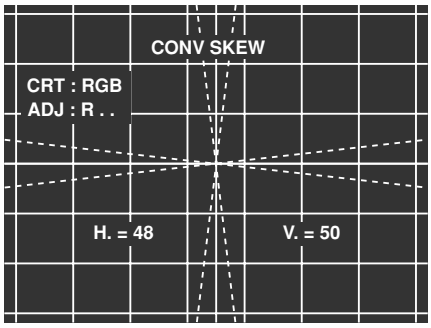
5.13.3 Convergence sizes

This function allows to re-size the image dimensions for the blue and red CRTs.

Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select on which tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.4 Convergence skew

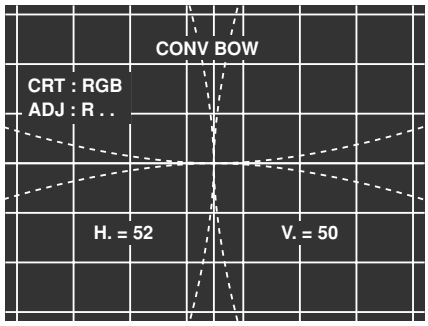
This function allows to setup the transversal horizontal and vertical inclination.



Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.5 Convergence bow

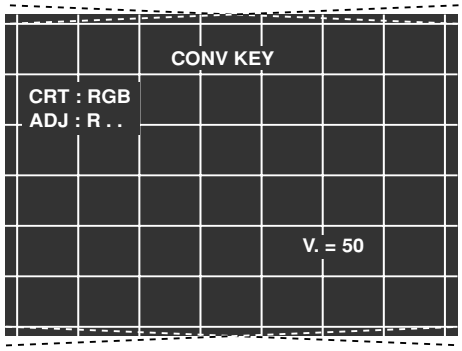
This function allows to setup the horizontal and vertical curving.



Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.6 Horizontal keystone adjustment

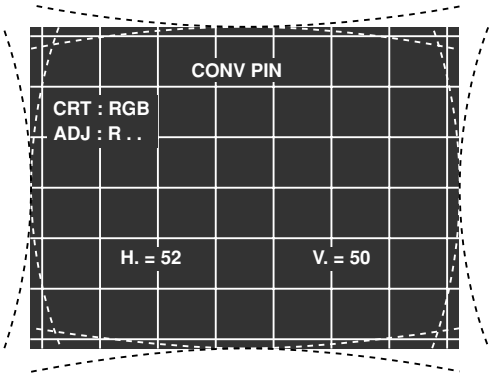
This function allows to overlap the red and blue horizontal lines on the green ones.



Use the arrow ▲ or ▼ to set in line the horizontal lines of the image with the screen borders.
Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.7 Convergence pincushion

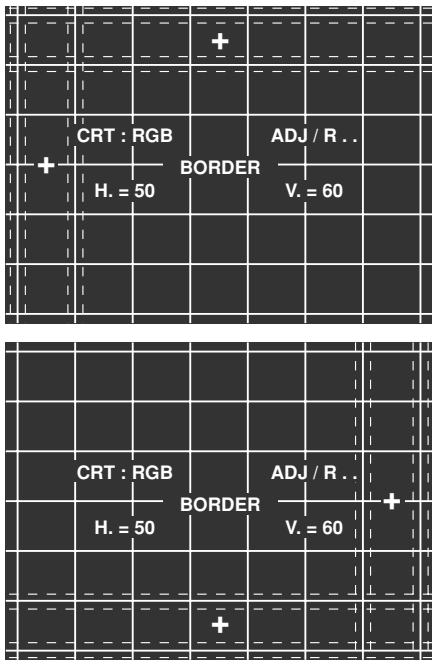
This function allows to setup the horizontal and vertical convergence pincushion.



Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.13.8 Convergence borders

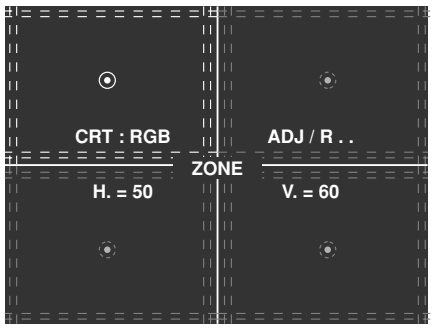
This function allows to adjust the image zones indicated by the crosses.



Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.14 Screen quarters corrections

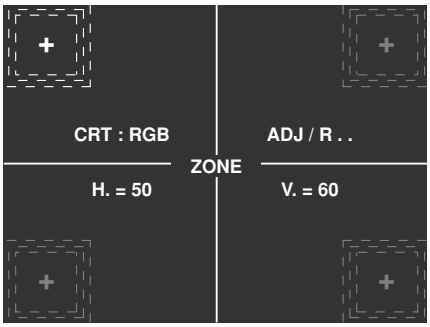
This function allows to perform a fine adjustment of the image corners.



First of all, you must enter the installation mode.
Press the **ZONE** button to select on which zone you wish to act, which will be indicated by ⊙.
Whenever you press the **ENTER** or **EXIT** buttons, the zone will be changed.
Use the **R,G,B,** buttons to switch on or off the tubes.
The **CRT** message: **RGB** indicates which tubes are switched on. Use the **Rsel, Gsel, Bsel,** buttons to select tube you wish to act. The **ADJ** message**: R.** indicates on which tube you are acting. Press **ENTER** or **EXIT** to change adjustment.
Press **ESC** to exit.

5.15 Screen corners corrections

Upon pressing the ENTER button, you enter the corner adjustment menu, the folowing image will appear.



Press **EXIT** or **ENTER** to change.
Press **ESC** to exit.

5.16 How to reset the adjustments

Note: Resetting means setting all adjustment values at 50 that corresponds to zero. Starting from this value you can adjust up to 100 or down to 0.

To reset adjustments read the following instructions carefully.

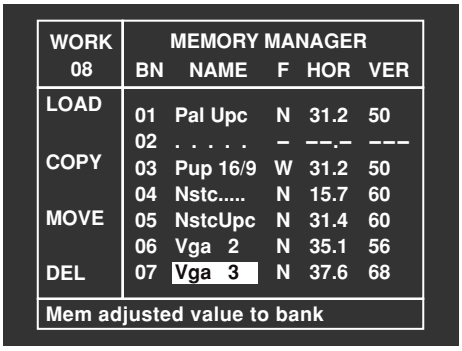
While in the deflection setup, by pressing the **RESET** button, the deflection parameters, convergence and the zones for the **R,G,B,** tubes are reset. While in the ceonvergence setup, by pressing the **RESET** button, the convergence parameters and the zone ones for the selected tube only are reset. While in the zone setup, by pressing the **RESET** button, the zone parameters are reset only for the selected tube. The following table shows which parameters are reset and in which menu.

RESET	RESET PARAMETER	COLOUR
DEFLECTION	ZONE DEFLECTION CONVERGENCE	ALL
CONVERGENCE	ZONE CONVERGENCE	ONLY THE SELECTED COLOUR
ZONE	ZONE	ONLY THE SELECTED COLOUR

5.17 How to store the convergence adjustments

To store convergence, deflection, and zone adjustments press MEMO

Thus entering the **MEMORY MANAGER** the following image will appear:



the current and highlighted memory bank. Use the arrow ▲ or ▼ to select in which memory bank you wish to store the convergence settings and press **ENTER** to confirm, or press **EXIT** to exit.

6 TECHNICAL SPECIFICATIONS

6.1 Projection system

- 3 picture tubes, 3 lenses
- Horizontal line system
- Lenses : Hybrid lenses **(SVP 450 PLUS)**
  High definition glass lenses
  (SVP 500 PLUS-HD)

6.2 Projection tube

- 7” monochrone tube, high brightness, liquid cooling, air lenses coupling, electrostatic focusing.
- The external red and blue tubes are mechanically rotated, the central green tube is fixed (for reference).

6.3 Projection lenses

- High performance hybrid lenses for the model SVP450
- High definition glass lenses for the model SVD 500
- Focus adjustment: centre and borders
- Magnification: 10x to 50x
- Resolution: more than 5 lp/mm at 50% MTF for hybrid lenses
- Resolution: more than 10 lp/mm at 50% MTF for glass lenses

6.4 Projected picture size

- 60-250 inches diagonal (121,9 cm to 508 cm, screen base size)
- Factory adjustment to 90” (183 x 137 cm screen)
- Convergence type: remote control convergence with zone adjustment

6.5 Light output

- Large area high brightness (100% white)
- (900 lumen at white peak).

6.6 Projector video resolution

- **RGB VIDEO** input: more than 1000 TV lines.

6.7 Colour temperature

- 3200,6500,9300 Kelvin degrees instrumentally adjusted by the manufacturer, plus a memory adjustable at will.
- The colour temperature can be selected and adjusted by means of the remote control.
- The video projector is set at factory for a 6500°K colour temperature.

6.8 Automatic cut off

- The projector automatically performs the cut-off for the colour temperature stability at set intervals.

6.9 Adjustments

- All of the projector adjustments can be carried out by means of the remote control except for mechanical centering of the tubves and optical focusing.

6.10 Picture adjustments

- Contrast-brightness-colour (for standard PAL, SECAM, NTSC 4.43, NTSC 3.58)
- Hue (only for NTSC 4.43 and NTSC 3.58)
- Peaking

6.11 Geometric adjustments

- Size - Centering - Linearity - Skew - Bow - Keystone - Pincushion - Borders, Quarters, Corners.

6.12 Inner test patterns

- Crosshair - Crosshatch - Dots - H characters - White field - White window (10% white window) - Colour bars.

6.13 Global adjustments and selection

- Blanking windows.
- H and V dynamic focus adjustments.
- White balance adjustments.
- Sync phase adjustment.
- Selectable installation type.
- Memory manager.
- RS-422 serial interface for PC control.
- All parameters can be saved into 25 different label configurations.
- Load, copy, move, and delete from memory banks.
- On screen source information that can be recalled by means of the remote control or by means of the rear panel button.
- On screen display ON/OFF (only for contrast, brightness, colour, peaking and hue).

7 DISPLAY PERFORMANCES

7.1 Flyback time

- **Horizontal** 5,4 µs tip.
- **Vertical** 500 µs tip.
- **R,G,B band width:** 20 MHz, -3dB typical.
- **Standard video band width:** 5.5 Mhz, -3dB typical
- **Contrast range:** more than 100:1
- **Warm up time (suggested):** 20 minutes

7.2 Sinchro

- **Horizontal frequency range:**15 at 16,3 Khz and from 30 to 38 Khz .
- **The model SVP 42 HB performs only up-to 34 KHz.**
- **Vertical frequency range:** 45 to 130Hz - automatic hooking

7.3 The complete function remote control RC 3000

Operating mode:
- 1.- wired (by means of the 8-m cable supplied)
- 2.- wireless (max operating distance: 10 m)

Functions:

All adjustments can be carried out by means of the remote control, but access can be gained to the following ones by means of a button:
- Power on/off.
- Video muting.
- Freeze.
- Format selection.
- R-G-B tube power off.
- VCR synch filter.
- Normalized parameters.
- Storable image adjustments.
- Picture adjustment
- Deflection adjustment (installation mode).
- Convergence adjustment (installation mode).
- Zone adjustment (installation mode).
- Video projector status info.
- Video input selections.
- Reset picture adjustment (installation mode).
- Back illumination by pressing a dedicated key.
- Without pressing any other key, the back illumination lasts about 20 seconds.
- By pressing any other key, the illumination counter is restarted.

Batteries:
- 4 1,5 Volt batteries, mod. UM4 E R03P
- 1 9 Volt battery, mod 6F22A 9V

7.4 User remote control RC 3100

Operating mode:
wireless (max operating distance:10m/30ft)

Functions:
All adjustments can be carried out by means of the remote control, but access can be gained to the following ones by means of a button:

- Power on/off.
- Freeze.
- Format selection.
- Video muting.
- VCR synch filter.
- Storable image adjustments.
- Normalized values recall
- Picture adjustment
- Video menu.
- Video projector status info.
- Video input selections.
- Options

7.5 Keyboard on the rear panel

Functions:
- Power on/off.
- Video input selection.
- Analogic picture adjustment.
- Info menu.

7.6 BNC RGB inputs

BNC connectors:
- Red input 0.7 Vpp, termination 75 Ohm
- Green input 0.7 Vpp, termination 75 Ohm
- Blue input 0.7 Vpp, termination 75 Ohm

Or:
- **BNC R** = Input Cr 0,7 Vpp 75
- **BNC G** = Input Y 1 Vpp 75
- **BNC B** = Input Cb 0,7 Vpp 75

7.7 Input synchro

H, H/V sync, 75 Ohm termination

a) Horizontal Sync. 0.3-5Vpp, positive or negative.

b) Vertical Sync: 0.3-5Vpp, positive or negative.

7.8 Scart connector

- **Pin 5 Earth B**
- **Pin 7 Input B** 0.7 Vpp, termination 75
- **Pin 9 Earth G**
- **Pin 11 Input G** 0.7 Vpp, termination 75
- **Pin 13 Earth R** 0.7 Vpp, termination 75
- **Pin 15 Input R**
- **o C (S-VHS)** 0.3 Vpp, termination 75
- **Pin 17 Video Earth**
- **Pin 19 Video output** 1 Vpp, termination 75
- **Pin 20 Video input** 1 Vpp, termination 75
- **Pin 21 Screen Earth**
- **or common return**

7.9 Video inputs

CVBS 1 BNC connector or SCART connector 1Vpp, 75 Ohm termination, neg. sync.

Chroma levels:
0.286 Vpp, NTSC 4.43,
NTSC 3.58 (burst level)
0.3 Vpp, PAL,
0.3 Vpp, SECAM

CVBS 2 BNC connectors, same levels as CVBS 175 Ohm termination, neg. sync

S-VHS 1 4-pin MINI DIN. connectors Levels: 1 Vpp for Y/75 signal; 0,3 Vpp for C/75 signal

S-VHS 2 scart connector (Pin 20-Y; Pin 15-C; Pin 17-Earth)

Input Video width 5.5 MHz-3dB

Standard PAL, SECAM, NTSC 3.58, NTSC 4.43 automatically switched

In case of bad input signal, the video standard can be forced by means of the remote control.

- C.T.I. always active
- Noise reduction on/off
- Peaking control
- Comb. filter on/off
- Luma/chroma delay adjustment
- NTSC: hue control

7.10 PC control

Through the RS422 interface, the video projector can be controlled by a PC via a dedicated software.

PC connector: D-sub. 9 Pin

This input is compatible with most computers, such as IBM VGA, etc...

8 ELECTRICAL DATA

Power consumption: 270W max (6W on stand-by)

Line voltage range: 120-240Vac 50-60Hz

Fuse: T 5 A

9 MECHANICAL DATA

Dimensions:

Width	620 mm
Height	290 mm
Depth	700 mm

Weight:

35 Kg net weight

Packaging:

Reinforced cardboard, filled with anti-shock stuff - 4 handles for transportation

Packaging dimensions:

Width	840 mm
Height	490 mm
Depth	1300 mm

10 TEMPERATURE AND HUMIDITY RANGE

Operation	0 to +35°C
Umidity	0 to 90% no condensation
Immunity	In conformity with EN 50082

11 SUPPLIED ACCESSORY

- AC power cables
- Lenses plastic caps
- Lenses spacers
- RC-3000 complete function remote control with batteries
- RC-3100 remote control with batteries
- Remote control cable (8m)
- Ceiling assembly kit
- Installation and use manual

12 TROUBLESHOOTING

The LED lights on the rear panel shows the projector status.

	LED Lights	MEANING
ON indicator	Red light	Stand-by mode
	Green light	Normal operation
Remote control indicator	Intermittent light	The projector is receiving a command from remote control

In case of malfunction, before calling in a technician check the following table:

PROBLEM	CAUSES	REMEDY
The projector will not turn on	The ON push button has not been pressed The power cable is disconnected	Press the ON button Connect the power cable
No picture is displayed on the screen	The projector is switched off The input setting is wrong	If the LED is red it means the projector is on stand-by. Press a numerical key to switch it on. Ref. INPUT SELECTION
The picture is not properly displayed on the screen	The picture setup is wrong	Ref. PICTURE ADJUSTMENT
The message **Fan Protection Detected switch off in 06 seconds** appears on the screen	One or more fans have stopped	Check that the cooling fan ventilation holes are not clogged
The message **ERROR ON 12C-bus board xxx device xxx** appears on the screen	A communication error has been detected	Switch the projector off and then back on again. If the message persists contact a qualified technician
The message **Convergence Overload Switch-Off in xxx seconds** appears on the screen	Overcurrent has been detected on the convergence board	Reset the current memory bank and repeat installation. If the message persists contact a qualified technician
During normal operation the projector switches off	The projector is in the PROTECTION MODE	Ask for service

13 ANWEISUNGEN AUF DEUTSCH

ACHTUNG: ÖFFNEN SIE NICHT UND NEHMEN SIE NIEMALS DIE HAUBE DES PROJEKTORS AB WEIL DARUNTER GEFAHRLICHE HOCHSPANNUNGEN, BIS 33 KVOLT, ANLIEGEN. WENN ERFORDERLICH, RUFEN SIE IMMER EINEN TECHNIKER.

SIM Multimedia lehnt jejliche Verantwortung ab, für Schaden an Personen und Sachen, die durch Nichtbeachtung dieser Anweisung und der anderen, die in dieser Bedienungsanletung enthalten sind, entstehen können.

13.1 Hinweis gemäß behördlicher Vorschriften

Die in diesem Gerät entstehende Röntgenstrahlung ist ausreichend abgeschirmt.
Beschleunigungsspannung maximal 33,5 KVolt.
Unsachgemässe Eingriffe, insbesondere Veränderungen der Hochspannung oder Auswechseln der Projektionsröhren, können dazu führen, daß Röntgenstrahlen in verstärktem Ausmasse auftreten.
Ein so verändertes Gerät entspricht nicht mehr der Zulassung und darf infolgedessen nicht mehr betrieben werden.

Landesanstalt für Arbeitsschutz
Nordrhein-Westfalen
Ulenbergstraße 127 - 131, 40225 Düsseldorf
Fernsprecher 0211/3101-0

-3.3-8331.6-Leh/Ts- Düsseldorf, 06.08.1999

1. Nachtrag
zur
Zulassung NW 793/97 Rö

Auf Grund des § 8 Abs. 2 der Verordnung über den Schutz vor Schäden durch Röntgenstrahlen (Röntgenverordnung - RöV) in der zur Zeit geltenden Fassung der Bekanntmachung vom 08. Januar 1987 (BGBl. I S. 114) wird die der Firma

SIM 2 Multimedia S.p.A.
Viale Lino Zanussi, 11
33170 Pordenone
Italien

erteilte Bauartzulassung

NW 793/97 Rö

vom 26.08.1997 wie folgt erweitert:

Die Bauartzulassung gilt auch für nachfolgend aufgeführte Varianten:

VIDEO PROJECTOR
Typen: SVD 500 PLUS
SVP 450
SVP 400 PLUS

Dieser Nachtrag gilt nur in Verbindung mit der Bezugszulassung und ist dieser beizufügen.

Im Auftrag
Mildner
(Dr. Mildner)

Landesanstalt für Arbeitsschutz 9 Nordrhein-Westfalen

SIM 2 Multimedia is certified

UNI EN ISO 9001

• Due to the constant product development, specifications and design might be subject to change without notice.
• A causa dello sviluppo continuo del prodotto, specifiche e progetto potrebbero subire modifiche senza preavviso.

SIM2 Multimedia S.p.a. • V.le Lino Zanussi, 11 • I-33170 Pordenone • Phone +39.434.383.253-256 • Fax +39.434.383260-261 • http: / / www.sim2.it • e-mail: info@sim2.it

cod. 46.9220.302