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BARCO

BARCO PROJECTION SYSTEMS

BARCO GRAPHICS 1208

90 00890 - 90 00891
90 00898 - 90 00899

INSTALLATION MANUAL

Date:
150494

UL

Revision :
01

724 CEBEC

Art. No.
59 75575

WARNINGS

SAFETY INSTRUCTIONS

- on safety
- on installation
- on servicing
- on cleaning
- on repacking
- on illumination

TABLE OF CONTENTS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with an arrowhead within a triangle is intended to tell the user that parts inside this product may cause a risk of electrical shock to persons.

The exclamation point within a triangle is intended that important operating and/or servicing instructions are included in the technical documentation for this equipment.

WARNING
TO PREVENT FIRE OR ELECTRICAL SHOCK HAZARD, DO NOT EXPOSE THIS PROJECTOR TO RAIN OR MOISTURE

FEDERAL COMMUNICATION COMMISSION (FCC STATEMENT)

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for Class A computing device pursuant to Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures be required to correct the interference.

Note: The use of shielded cables is required to comply within the limits of Part 15 of FCC rules.

Notice on Safety

Projectors are built in accordance with the requirements of the international safety standards IEC 950 and UL 1950, which are the safety standards of information technology equipment including electrical business equipment.

These safety standards impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against risk of electric shock and energy hazard, and having access to live parts. Safety standards also impose limits to the internal and external temperature rises, radiation levels, mechanical stability and strength, enclosure construction and protection against the risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

INSTALLATION INSTRUCTIONS

Before operating your projector please read this manual thoroughly, and retain it for future reference.

Installation and preliminary adjustments should be performed by qualified BARCO personnel or authorized BARCO service dealers.

OWNER'S RECORD

The part number and serial number are located at the rear of the projector. Record these numbers in the spaces provided below. Refer to them whenever you call upon your BARCO dealer regarding this product.

PART NUMBER:

SER. NUMBER:

DEALER:

B. Power cord with ANSI 73.11 plug.

The wires of the power cord are colored in accordance with the following code.

ANSI 73.11
LINE - BLACK
NEUTRAL - WHITE
GROUND - YELLOW/GREEN

Green/yellow: ground
White: neutral
Black: line (live)

To disconnect the cord, pull it out by the plug. Never pull the cord itself.

3. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

4. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

5. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.

Never spill liquid of any kind on the product: Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.

On installation

1. Do not place this projector on an unstable cart, stand, or table. The projector may fall, causing serious damage to it.

2. Do not use this projector near water.

6. Lightning - For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the projector due to lightning and AC power-line surges.

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* All the safety and operating instructions should be read before using this unit.
* The safety and operating instructions manual should be retained for future reference.
* All warnings on the projector and in the documentation manuals should be adhered to.
* All instructions for operating and use of this equipment must be followed precisely.

On safety

1. This product should be operated from an AC power source.

Operating AC power voltage of the projector:

BARCOGRAPHICS 1208
Art.No. 90 00890 (230V AC)
Art.No. 90 00899 (120V AC)

The type of power source is indicated by the art no. on the identification plate on the rear of the projector.

If you are not sure of the type of AC power available, consult your dealer or local power company.

2. This product is equipped with a 3-wire grounding plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

WARNING FOR THE CUSTOMERS: THIS APPARATUS MUST BE GROUNDED (EARTHED) via the supplied 3 conductor AC power cable. (If the supplied power cable is not the correct one, consult your dealer.)

A. Mains lead (AC Power cord) with CEE 7 plug:

The colors of the mains lead are colored in accordance with the following code:

Green-and-yellow: Earth (safety earth)
Blue: Neutral
Brown: Line (Live)

CEE 7
LINE - BROWN
NEUTRAL - BLUE
GROUND - YELLOW/GREEN
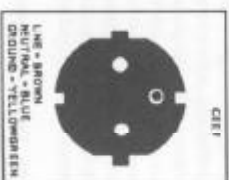
stains may be removed with a cloth lightly dampened with mild detergent solution. Never use strong solvents, such as thinner or benzine, or abrasive cleaners, since these will damage the cabinet.

- To ensure the highest optical performance and resolution, the projection lenses are specially treated with an anti-reflective coating, therefore, avoid touching the lens. To remove dust on the lens, use a soft dry cloth. Do not use a damp cloth, detergent solution, or thinner.

On repacking

Save the original shipping carton and packing material; they will come in handy if you ever have to ship your projector. For maximum protection, repack your set as it was originally packed at the factory.

On illumination

In order to obtain the best quality for the projected image, it is essential that the ambient light which is allowed to fall on the screen be kept to an absolute minimum.

When installing the projector and screen, care must be taken to avoid exposure to ambient light directly on the screen. Avoid adverse illumination on the screen from direct sunlight or florescent lighting fixtures.

The use of controlled ambient lighting, such as incandescent spot light or a dimmer, is recommended for proper room illumination. Where possible, care should also be taken to ensure that the floors and walls of the room in which the projector is to be installed are non-reflecting, dark surfaces. Brighter surfaces will tend to reflect and diffuse the ambient light and hence reduce the contrast of the projected image on the screen.

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3. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to ensure reliable operation of the projector and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This projector should not be placed in a built-in installation or enclosure unless proper ventilation is provided.

On servicing

Do not attempt to service this projector yourself, as opening or removing covers may expose you to dangerous voltage potentials and risk of electric shock! Refer all servicing to qualified service personnel.

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power cord or plug is damaged or frayed.

b. If liquid has been spilled into the projector.

c. If the product has been exposed to rain or water.

d. If the product does not operate normally when the operating instructions are followed. Note:

Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

e. If the product has been dropped or the cabinet has been damaged.

f. If the product exhibits a distinct change in performance, indicating a need for service.

Replacement parts - When replacement parts are required, be sure the service technician has used original BARCO replacement parts or authorized replacement parts which have the same characteristics as the BARCO original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.

Safety check - Upon completion of any service or repairs to this projector, ask the service technician to perform safety checks to determine that the projector is in proper operating condition.

On cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

- To keep the cabinet looking brand-new, periodically clean it with a soft cloth. Stubborn

UNPACKING
DIMENSIONS

Projector dimensions
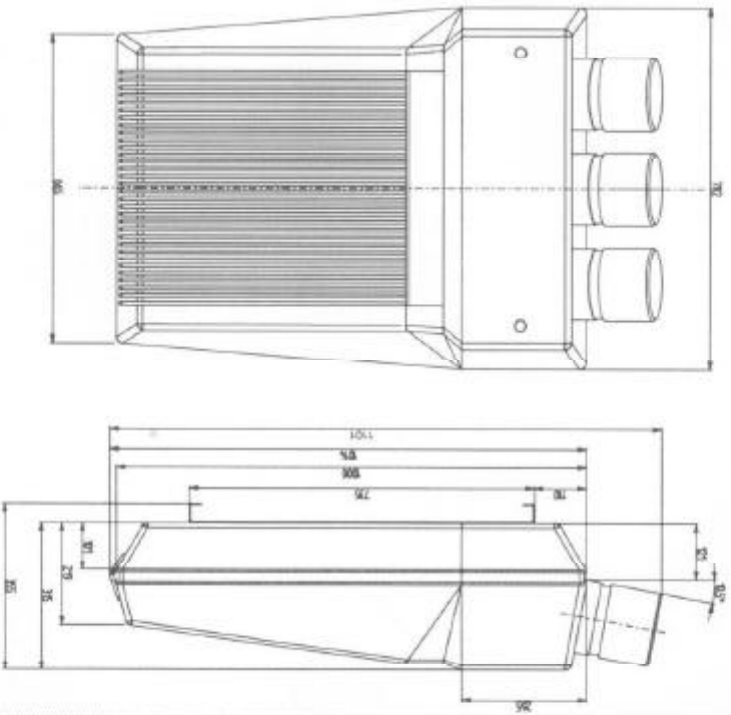
Unpacking

To open the banding, pull on the clip as shown in the first drawing.

Take the projector out of its shipping carton and place it on a table.
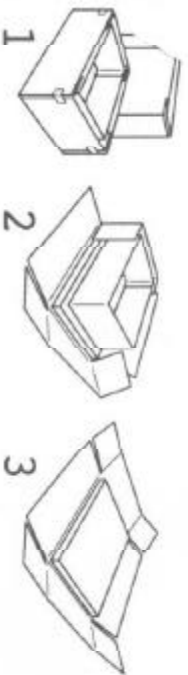
Save the original shipping carton and packing material, they will come in handy if you ever have to ship your projector.
For maximum protection, repack your projector as it was originally packed at the factory.
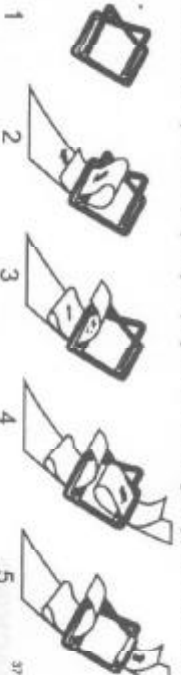
To remount the banding, follow the instructions as given in the drawing above.

Contents of the shipped box:

- 1 BARCOGRAPHICS 1200.
- 1 remote control
- 1 power cable with outlet plug type CEE7 or ANSI 73.11.
- 1 owner's manual.
- 1 installation manual.

INSTALLATION GUIDELINES

Environment

What about ambient light?

Which screen type?

What image size? How big should the image be?

Where to install the projector?

How to install the projector?

Which screen type?

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

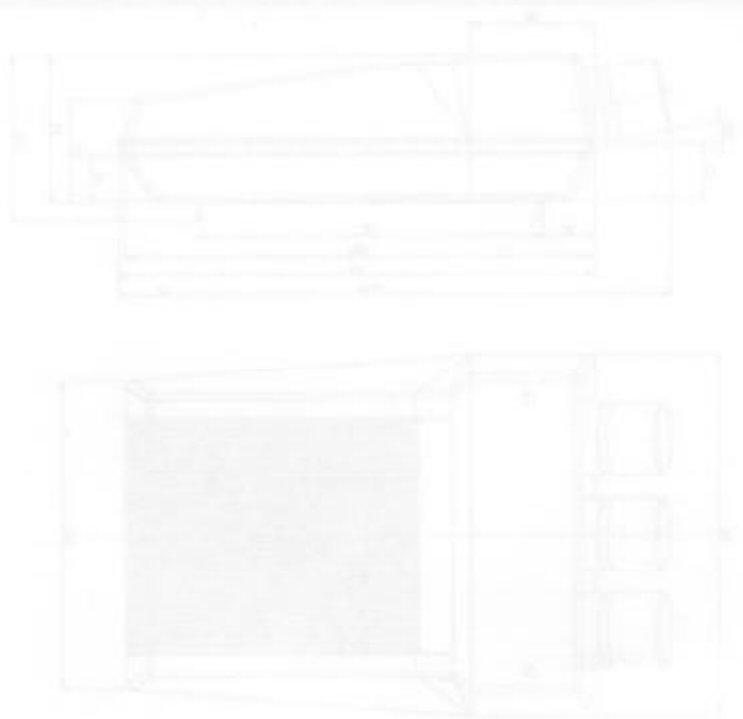Screens are rated by how much light they reflect (or transmit in the case of rear projection systems) given a determined amount of light projected toward them. The 'GAIN' of a screen is the term used. Front and rear screens are both rated in terms of gain. The gain of screens range from a white matte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

In considering the type of screen to choose, determine where the viewers will be located and go for the highest gain screen possible. A high gain screen will provide a brighter picture but reduce the viewing angle.

For more information about screens, contact your local screen supplier.
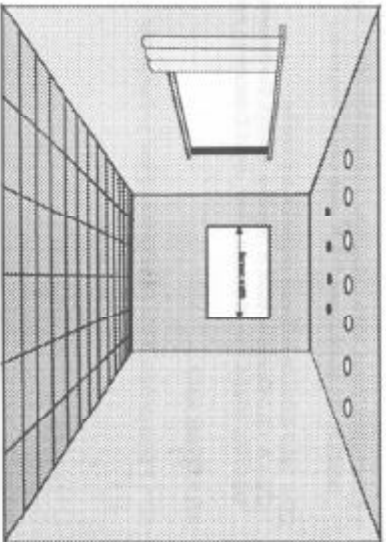
What image size? How big should the image be?

The BARCOGRAPHICS 1208 is designed for projecting an image width from 1.2m (4') to 6m (20') with an aspect ratio of 4 to 3. It leaves the BARCO factory, adjusted as a ceiling front projector for a screen width of 2.4m. Changing the image size from the factory preset requires a realignment of the projector.


Installation guidelines

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

Environment

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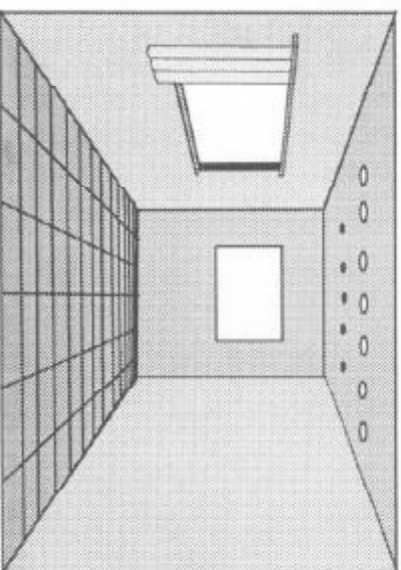
What about ambient light ?

The ambient light level of any room is made up of direct or indirect sunlight, and the light fixtures in the room. The amount of ambient light will determine how bright the image will appear. So, avoid direct light on the screen.

Windows that face the screen should be covered by opaque crapery while the set is being viewed. It is desirable to install the projecting system in a room whose walls and floor are of non-reflecting material. The use of recessed ceiling lights and a method of dimming those lights to an acceptable level is also important. Too much ambient light results in a 'wash out' of the projected image. This appears as less contrast between the darkest and lightest parts of the image. With bigger screens, the 'wash out' becomes more important. As a general rule, darken the room to the point where there is just sufficient light to read or write comfortably. Spot lighting is desirable for illuminating small areas so that interference with the screen is minimal.

screen

ceiling

B

PD

Front view

A

CD

projector

Top view

screen width
SW
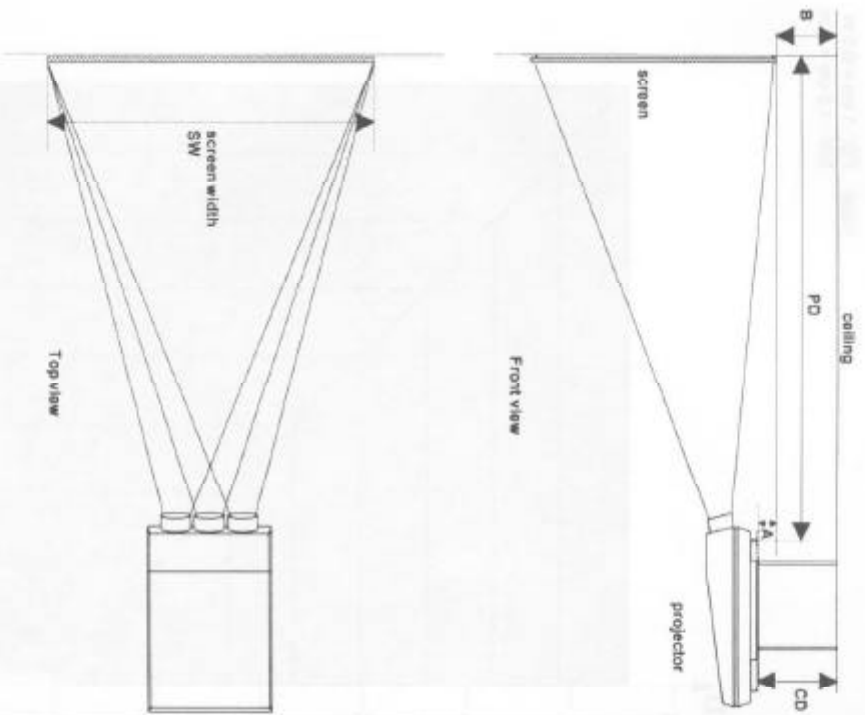
screen

· Where to install the projector?

To indicate a correct installation position it is necessary to know the distance :
- projector - ceiling
- projector - screen

To find this correct position for the BARCOGRAPHICS 1208 equipped with HD120 lenses, 3 possible ways are indicated in the next paragraphs.

- a diagram which indicates PD (projector to screen distance) and a Correction Value A, both in function of the screen width.
- a table which immediately gives the correct position PD and the Correction Value A for different screen widths.
- a formula which directly gives the correct position PD and the Correction Value A.

Abbreviations used on drawing and diagrams on next pages

B = Distance between ceiling and top of the screen.

A = Correction Value, extra value to be added to B to obtain the correct installation position. (In some cases the A value can be negative.)

CD = Total distance between projector and ceiling.
CD = A + B (When the result is negative, enlarge the distance between ceiling and top of the screen, mount screen lower, until CD becomes zero or positive)

SW = Screen width.

PD = Perpendicular distance between screen and projector.

Correction value A with regard to the screen width for HD8 lenses (metric).

scale : SW : 1 cm = 0.5 m
A : 1 cm = 10 cm
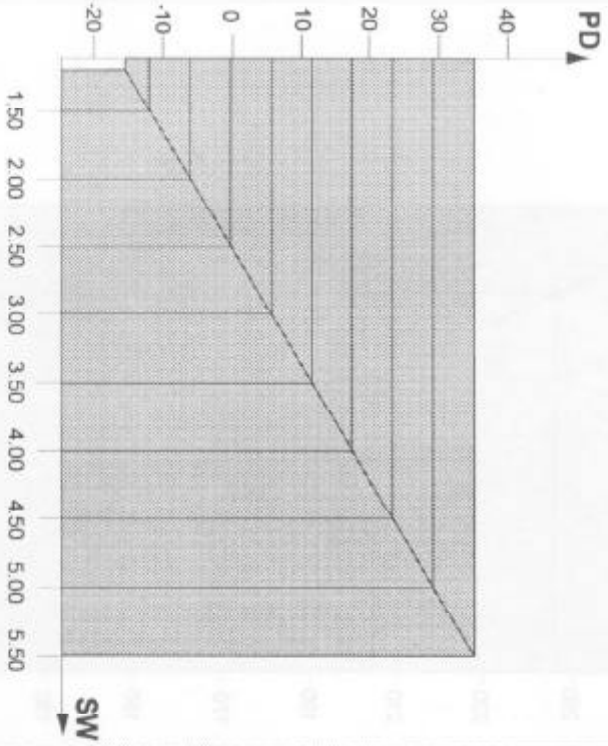
5975575 BARCOGRAPHICS 1208 221193

Projector to screen distance with regard to the screen width for HD8 lenses (metric).

scale : PD : 1 cm = 0.5 m
SW : 1.5 cm = 1 m
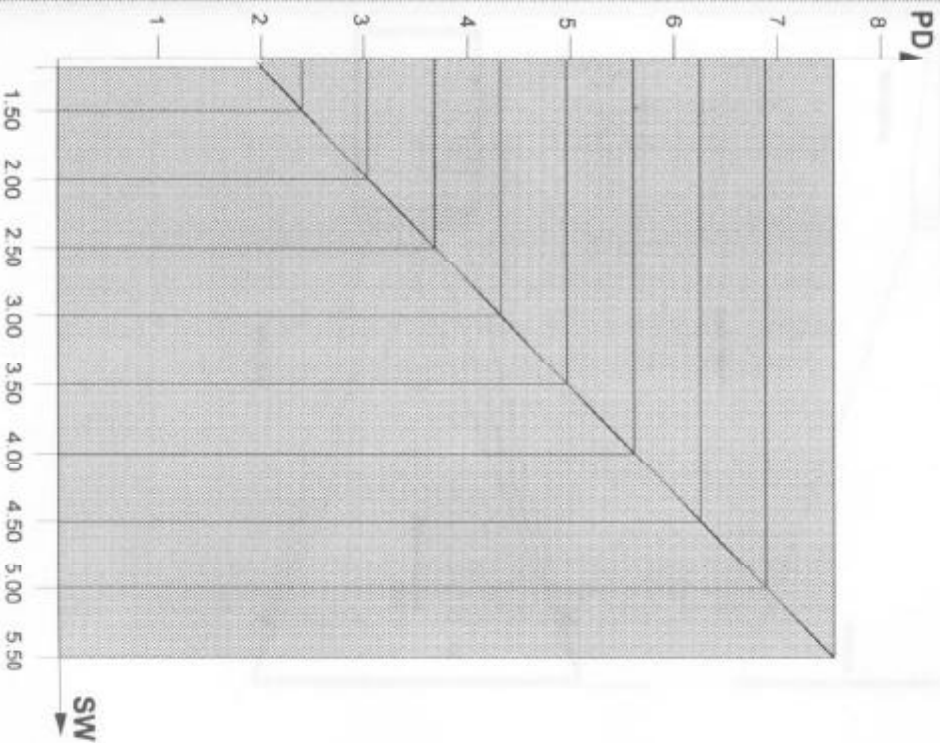
5975575 BARCOGRAPHICS 1208 291190

Correction value A with regard to the screen width for *HD8 lenses* (inch).

scale : SW : 1 inch = 60 inch
A : 0.5 inch = 2 inch

5673S575 BARCOGRAPHICS 1208 221193

Projector to screen distance with regard to the screen width for *HD8 lenses* (inch).

scale : SW : 1 inch = 60 inch
PD : 1 inch = 40 inch

58 75575 BARCOGRAPHICS 1208 291193
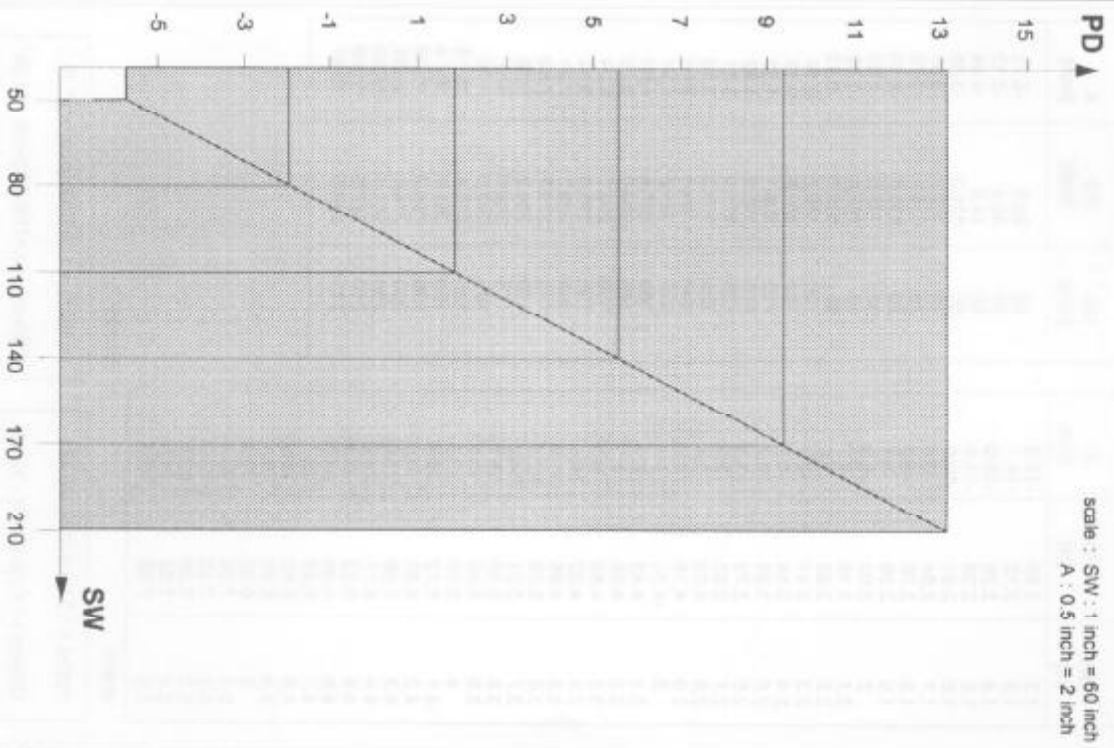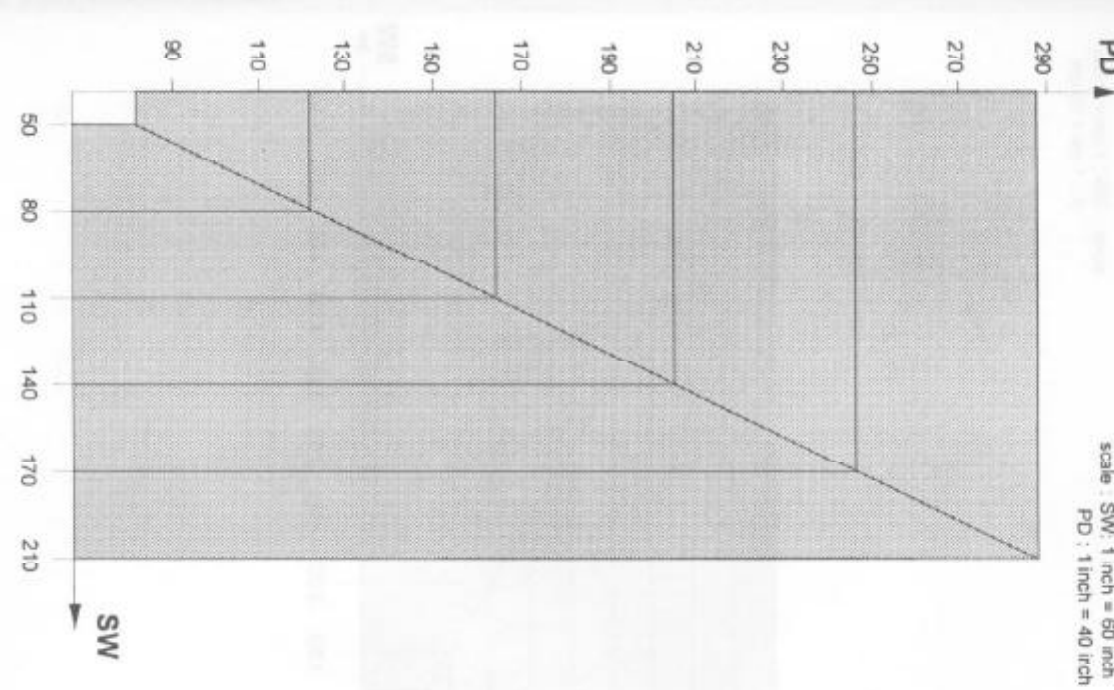
* How to install the projector?

Ceiling mount or table mount?
To install the BARCOGRAPHICS 1208, apply always the BARCO peripherals which are specially designed for this function.

BARCO ceiling support.

Always use the BARCO ceiling support to attach your EARCOGRAPHICS 1208 to the ceiling. (BARCO order number : 98 27340)

The installation instruction for this support is enclosed in the packet of the set. You can order these instructions also by BARCO. BARCO order number 59 75593.

Appendix A gives a short overview of the set up of the BARCO Ceiling Support.

BARCO projection table.

Height adaptable projection table provides a stable stand for your projector, and makes it possible to adapt the projector perfectly to the local requirements. (BARCO order number 98 27740).

Distance tables for Projector to screen distance and ceiling distance corrector value.

metric

SW [m]	PD [m]	A [cm]
1.2	1.99	-15.3
1.3	2.12	-14.1
1.4	2.25	-13.0
1.5	2.38	-11.8
1.6	2.51	-10.6
1.7	2.64	-9.4
1.8	2.76	-8.3
1.9	2.89	-7.1
2	3.02	-5.9
2.1	3.15	-4.7
2.2	3.28	-3.6
2.3	3.41	-2.4
2.4	3.54	-1.2
2.5	3.66	-0.1
2.6	3.79	1.1
2.7	3.92	2.2
2.8	4.05	3.4
2.9	4.18	4.6
3	4.31	5.8
3.1	4.43	6.9
3.2	4.56	8.1
3.3	4.69	9.3
3.4	4.82	10.5
3.5	4.95	11.6
3.6	5.08	12.8
3.7	5.21	14.0
3.8	5.33	15.2
3.9	5.46	16.3
4	5.59	17.5
4.1	5.72	18.7
4.2	5.85	19.9
4.3	5.98	21.0
4.4	6.11	22.2
4.5	6.23	23.4
4.6	6.36	24.6
4.7	6.49	25.7
4.8	6.62	26.9
4.9	6.75	28.1
5	6.88	29.3
5.1	7.00	30.4
5.2	7.13	31.6
5.3	7.26	32.8
5.4	7.39	34.0
5.5	7.52	35.1

PD[m] = 1.285xSW[m] + 0.451

CD[cm] = 11.75xSW[m] - 29.45

inches

SW [inch]	PD [inch]	A [inch]
50	82.0	-5.72
55	88.4	-5.13
60	94.8	-4.54
65	101.2	-3.95
70	107.7	-3.37
75	114.1	-2.78
80	120.5	-2.19
85	126.9	-1.60
90	133.4	-1.02
95	139.8	-0.43
100	146.2	0.16
105	152.6	0.75
110	159.1	1.33
115	165.5	1.92
120	171.9	2.51
125	178.3	3.10
130	184.8	3.68
135	191.2	4.27
140	197.6	4.86
145	204.0	5.45
150	210.5	6.04
155	216.9	6.62
160	223.3	7.21
165	229.7	7.80
170	236.2	8.38
175	242.6	8.97
180	249.0	9.56
185	255.4	10.15
190	261.9	10.74
195	268.3	11.32
200	274.7	11.91
205	281.1	12.50
210	287.6	13.09
215	294.0	13.67

PD[inch] = 1.285xSW[inch] + 17.76

CD[inch] = 0.1175xSW[inch] - 11.59

INSTALLATION SET UP

Access to controls

Scan adaptation

INSTALLATION SET UP

During some installations it will become handy to remove the top cover totally.
Therefore,
- loosen the screw locks by turning a quarter counter clockwise.
- pull out the two hinge-joints
- left up the top cover.

ACCESS TO CONTROLS.

Opening procedure :

During the projector set up and the installation procedure it is necessary to open the top cover.
To gain access, handle as follow :

* Turn both lock screws with a screwdriver or a coin counter clockwise.
* Lift up and pivot the top cover. Attention : the cover is not secured with an incorporated support. When opening, do not let it flip over; otherwise the hinges will break.
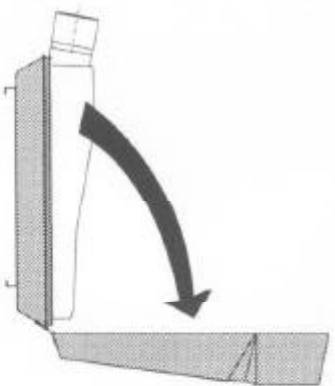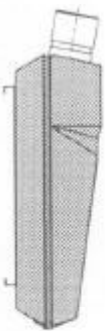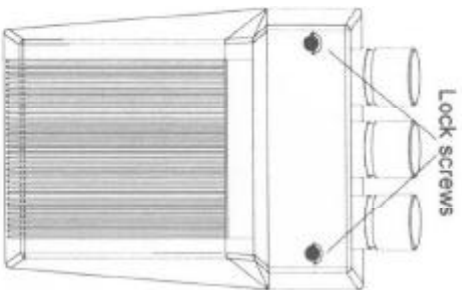
Lock screws

- Lift up the metal cover plate and pivot it to the lens side.
- Take off the cover plate.
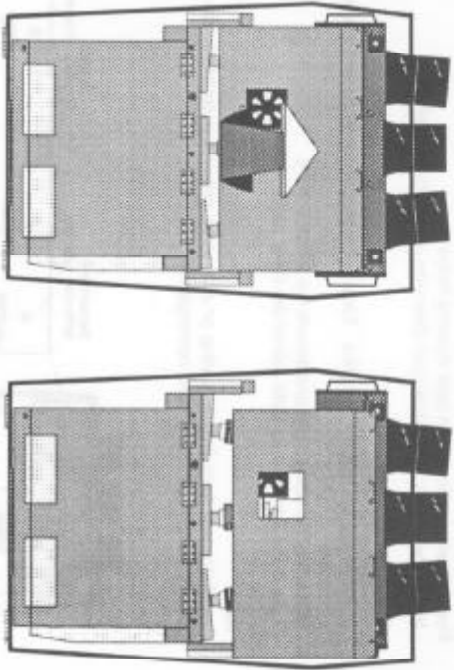
- Loosen the lock screw of the scan switches module plate.
- Pivot the scan switches module plate to the lenses.
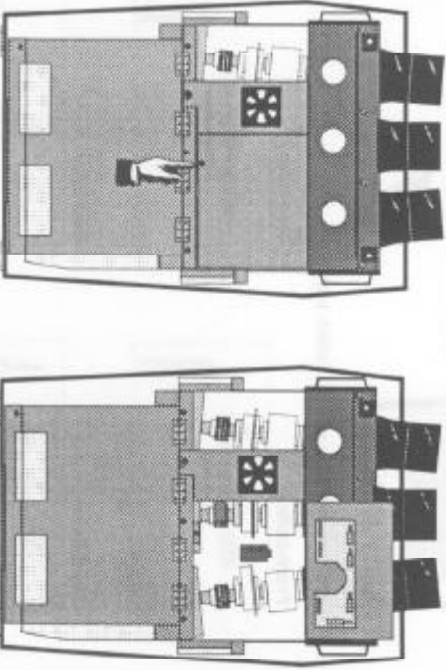
Scan adaptation

The scan switches must be placed in the correct position

Warning
TURN OFF PROJECTOR AND UNPLUG THE POWER CORD BEFORE CHANGING A SCAN SWITCH POSITION

A : horizontal scan inversion

Three switches are used, one for each CRT. When changing the horizontal scan, insure that all three switches are left in the same position. See position of the switches (diagrams on next page) for the corresponding projector position.

B : Vertical scan inversion

One switch for the three CRT's is used. See position of the switch (diagrams on next page) for the corresponding projector position.

Procedure :

Make sure that the projector is switched off and the power cord is disconnected.

- Open the top cover (see access to controls).

- Turn out the 3 screws on both sides of the cover plate.

- Loosen the 3 lock screws with a screwdriver by turning a quarter counter clockwise.

- Remove the fixation screw nearby the fan.

Lock screws

Fixation screw
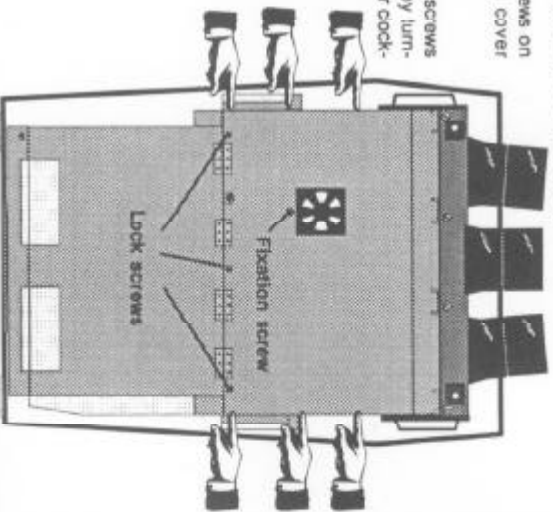
E-W correction adaptation on the vertical deflection module.

for ceiling mounted configurations, front as well as rear projection :
plug with inserted capacitor must be installed.

for table mounted configurations, front as well as rear projection :
plug with inserted capacitor must be removed.

To install or to remove the plug, handle as follow :

Make sure that the projector is switched off and the power cord is disconnected.

- Open the top cover (see access to controls).

- Turn out the 3 screws on both sides of the cover plate.

- Loosen the 3 screws on the rear side.

- Lift up the metal cover plate and pivot it to the lens side.

For horizontal scan inversion (see drawing below):
- toggle the switches for horizontal scan inversion in their correct position

For vertical scan inversion (see drawing below) :
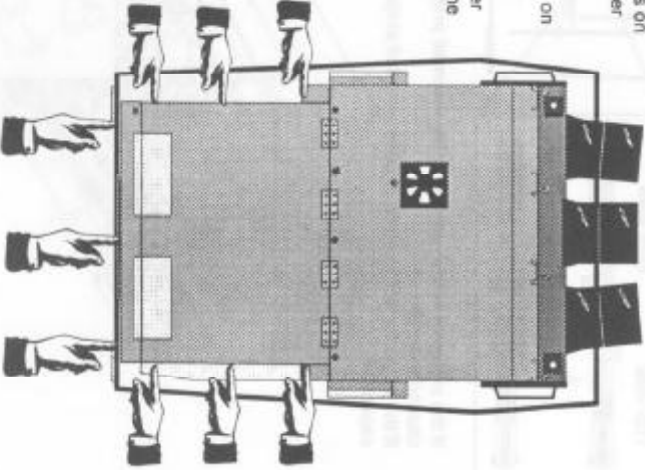- toggle the switch for vertical scan inversion in its correct position.

After scan inversion :
- re-install the fan and the fan plate. Secure the lock screw by turning a quarter clockwise.
- reposition the cover plate and secure the 3 lock screws.
- Turn in the 3 screws on both side of the cover plate

Note
Switching over from floor to ceiling or vice versa requires a complete readjustment of picture geometry and convergence.

Horizontal deflection switches

Vertical deflection switch
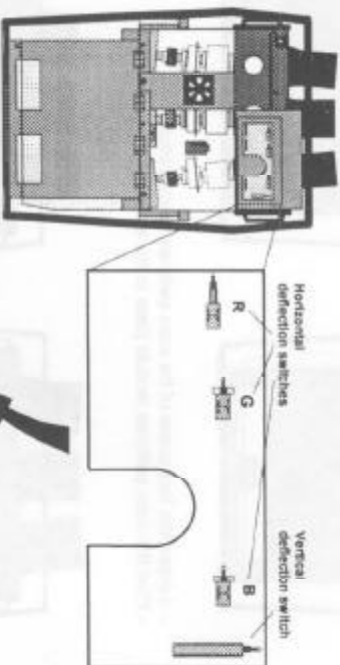
Projector configurations (Switch settings)

Front-ceiling
R pressed
G pressed
B pressed

Front-table
R not pressed
G not pressed
B not pressed

Rear-ceiling
R not pressed
G not pressed
B pressed
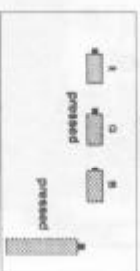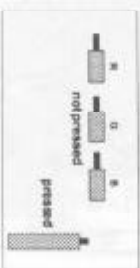
Rear-table
R pressed
G pressed
B not pressed
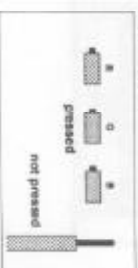
Linearity adaptation on convergence module.

For ceiling mounted configurations, front as well as rear projection : plug must be installed.

For table mounted configurations, front as well as rear projection : plug must be removed.

To install or to remove the plug, handle as follow :

- Loosen the convergence fixation screws and slide out the convergence board.
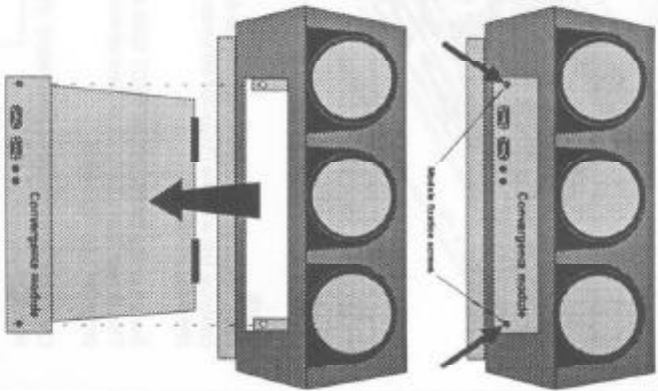
- Take out the vertical deflection module.
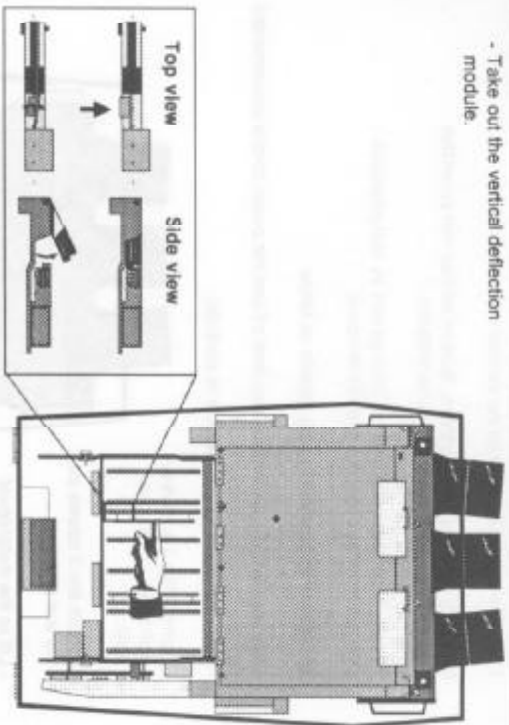
If the projector will be used as ceiling mounted projector, mount the plug with capacitor as shown.
If the projector will be used as table mounted projector, remove the plug with capacitor.

Top view

Side view
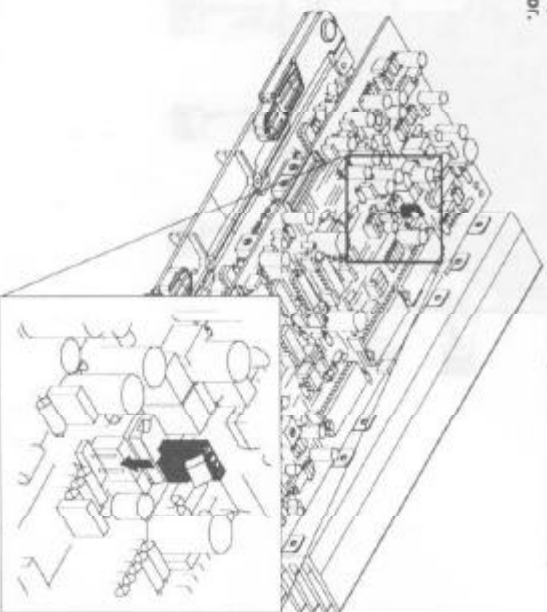
- select with the arrow keys 'Service and press ENTER. The service mode menu will be displayed.
- highlight with the arrow keys 'start up screen' and press ENTER.

The projector displays the BARCO start up screen.
This screen gives information about the projector configuration in the subject 'config.'

SERVICE MENU

COPY A BLOCK
DELETE A BLOCK
DELETE ALL BLOCKS
CHANGE PASSWORD
RUN TIME
SET TO MIDPOSITION
CONVERGENCE OFF

Select with ↑ or ↓
the <ENTER>
<EXIT> to return

BARCO
GRAPHICS 1208

Proj. address : 001
Soft. Version : 5.00
Config : Ceiling
front
Baudrate PIC : 9600
Text : ON
Serie No. : 10359SR52

The plug must be mounted on its socket when the projector is mounted in the following configuration : Front projection - ceiling mounted.
Rear projection - table mounted.

The plug must be removed from its socket when the projector is mounted in the following configuration : Rear projection - ceiling mounted.
Front projection - table mounted.
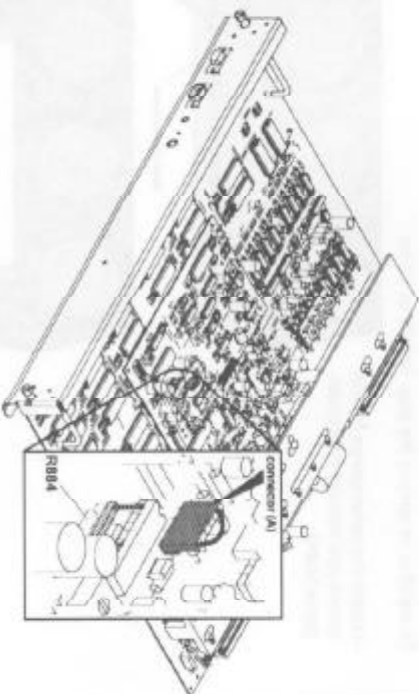
Check
Note : this check procedure can only be done after power (mains) connection. So, continue first with the *Projector set up* and the *connectors* and return then to this checking procedure.

Switch on the BARCOGRAPHICS 1208 and look at the "*BARCO startup screen*". This screen is available in the '*Service mode*'. There you will find an indication of the projector's configuration.

Configuration when leaving the factory : ceiling/front configuration for a screen size of 2.40m.

Follow next procedure :
- switch on the projector.
- the projector starts up on the last selected source.
- press the ADJUST key on the RCU.
- your password will be asked (if activated).
If it is correct, the path selection menu will be displayed.

SOURCE XX
YOU ARE NOW IN THE
ADJUSTMENT MODE
SELECT A PATH FROM
BELOW

QUIRED
RANDOM ACCESS
INSTALLATION
OPENING
PS2

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

PROJECTOR SET UP

PROJECTOR ADDRESS

POWER UP MODE

BAUD RATE FOR COMMUNICATION WITH A COMPUTER

PASSWORD

Setting the projector address.

The projector's address may be set to any value between 0 and 255. When the address is set, the projector can be controlled now by :
- The RCU for addresses between 0 and 9.
- The IBM PC (or compatible) or The Apple MAC for addresses between 0 and 255.

Addressable with RCU

Addressable with PC MAC or workstation

255

9

0

Projector set up.

The DIP switches on the controller unit allow a set up of the projector.
- projector address (6 DIP switches)
- Power up (1 DIP switch)
- baud rate (3 DIP switches)
- password (1 DIP switch)

To gain access to the DIP switches on the controller unit :
- loosen the 3 screws on both sides (indicated on drawing below) of the frame
- loosen the 3 screws on the rear side of the metal frame.
- lift up the metal cover plate and pivot to the lens side. The controller
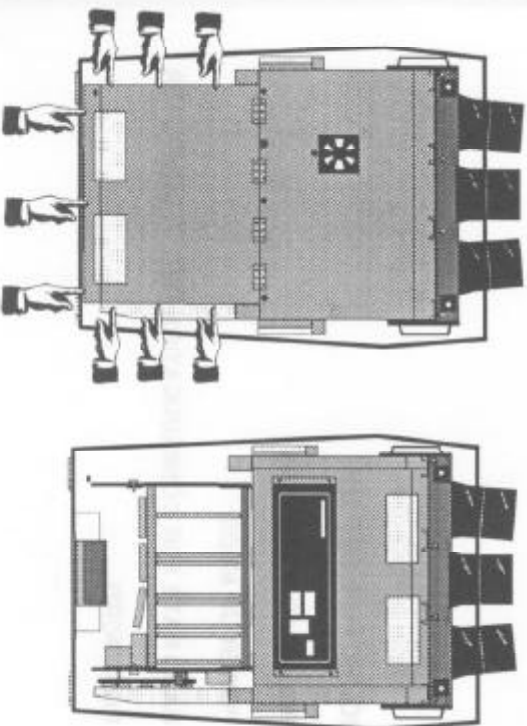
Power up mode.

The projector can start up in two different modes. The start up mode is determined by the position of DIP switch 4 on the controller unit.

Position of the DIP switch 4 :

ON : operational mode
OFF : stand by mode

1. Operational mode :

When the power switch on the rear of the projector is pressed, the projector displays the last selected source if available, otherwise the "BARCO start up screen" is displayed if no source is present
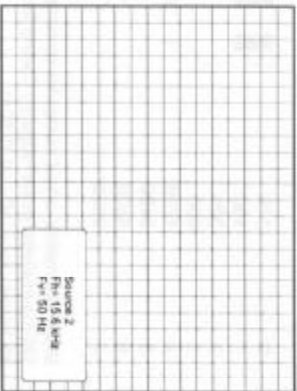
2. Stand by mode :

When the power switch on the rear of the projector is pressed, the projector goes into stand-by mode. The stand-by key on the RCU800 is used to turn the projector ON and OFF.

Power up mode

Source 2
Fh: 15.6 kHz
Fv: 50 Hz

BARCO
GRAPHICS 1208

Proj. address : 001
Soft. Version : 5.00
Config : Ceiling
front
Blacktime : PC 9800
Text : 2N
Serial No. : 10356852

Address setting is a hardware set up of your projector which must be done during installation. Therefore 8 DIP switches are provided on the controller unit.

Each DIP switch has its own decimal value. The summary of the values associated to those DIP switches gives the address (see table "address setting").

Switch	Value
1	128
2	64
3	32
4	16
5	8
6	4
7	2
8	1

Example : address 202

DIP switch	1	2	3	4	5	6	7	8
setting	1	1	0	0	1	0	1	0

Summary : 1x128 + 1x64 + 0x32 + 0x16 + 1x8 + 0x4 + 1x2 + 0x1 = 202

Note : when the address button on the RCU is pressed, the projector will display its own address on the screen. Once the address button is pressed, to continue using your RCU, it is necessary to enter an address, even when the displayed address is correct. Use the numeric keys to enter the address.

PROJECTOR
ADDRESS
001
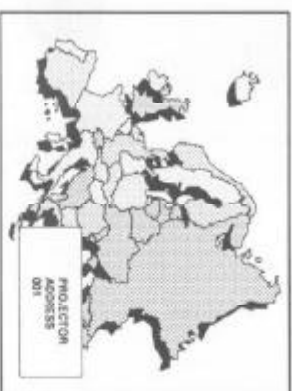
POWER (MAINS) CONNECTION

Baud rate for communication with a IBM PC (or compatible) or MAC.

The communication speed between projector and PC or MAC has 3 possible settings. With DIP switches6, 7 and 8 on the controller unit, labelled 'Baud rate code (sum)', it is possible to select the baud rate (communication speed). Each DIP switch has its own decimal value. The summary of the values associated to those DIP switches gives the baud rate code. With each baud rate code corresponds a communication speed.

Position of DIP switches and baud rate codes

baud rate code   speed

0	110
1	150
2	300
3	600
4	1200
5	2400
6	4800
7	9600

Baud rate DIP switches

More information about computer communication with the BARCOGRAPHICS 1208 is available in the Projector Control Software manual (order number for DOS: 59 75014, for MAC : 59 75224).

Password mode

With DIP switch 5 on the controller unit, the projector adjustments can be protected with a password. When the password feature is enabled, the customer has to enter a password before he can enter the adjustment mode (for more information about password setting and reprogramming the password, see Installation adjustment).

When the password menus are disabled (adjust mode is unprotected), the adjust mode can be selected by pressing the ADJUST key. This position of the DIP switch is useful for qualified service technicians because they do not need a password to enter the adjust mode.

Position of DIP switch 5 :

ON : password mode enabled
OFF : password mode disabled
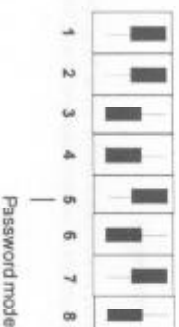
Password mode

The wires of the delivered mains lead (power cord) are colored in accordance with the following code:

Green and yellow : ground
Blue : neutral
Brown : live

B. Power cord with an ANSI 73.11 plug

The wires of the delivered mains lead (power cord) are colored in accordance with the following code :

Green and yellow : ground (earth)
White : neutral
Black : live

LINE = BLACK
NEUTRAL = WHITE
GROUND = YELLOW/GREEN

ANSI 73.11

Power check

The power voltage for the projector is indicated on the identification plate on the rear of the projector.
Art. no 90 00890 - 90 00891 has to operate on 230 Vac
Art. no 90 00898 - 90 00899 has to operate on 120 Vac

If the idenfication is different from that on the wall outlet, proceed to Input power voltage adaptation.

Input power (mains) voltage adaptation.

Attention

The BARCOGRAPHICS 1208 - 90 00890 and 90 00891 leaves the factory to operate on a mains (power) input of 230 Vac.
The BARCOGRAPHICS 1208 - 90 00898 - 90 00899 leaves the factory to operate on a mains (power) input of 120 Vac.

Adaptation of the power input of the projector between 230 Vac and 120Vac or vice versa is possible.
Follow the procedure as described below.

Power (mains) cord connection

Use the supplied cord to connect your projector to the wall outlet. Plug the female power connector into the male connector at the back of the projector.
This projector may be connected to an IT-power system.
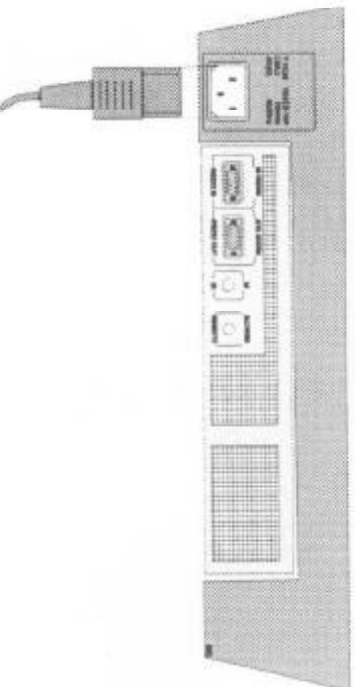
Preparing your power cord

A. Mains lead (power cord) with CEE7 plug.

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The green/yellow wire must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚, or colored green and yellow.
- The blue wire must be connected to the terminal marked with the letter N or colored black.
- The brown wire must be connected to the terminal marked with the letter L or colored red.

LINE = BROWN
NEUTRAL = BLUE
GROUND = YELLOW/GREEN

CEE 7

Cover plate (side view)

Top view marked area

cabinet

metal bottom plate
inside projector
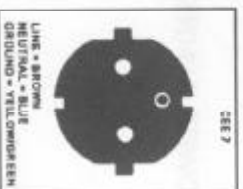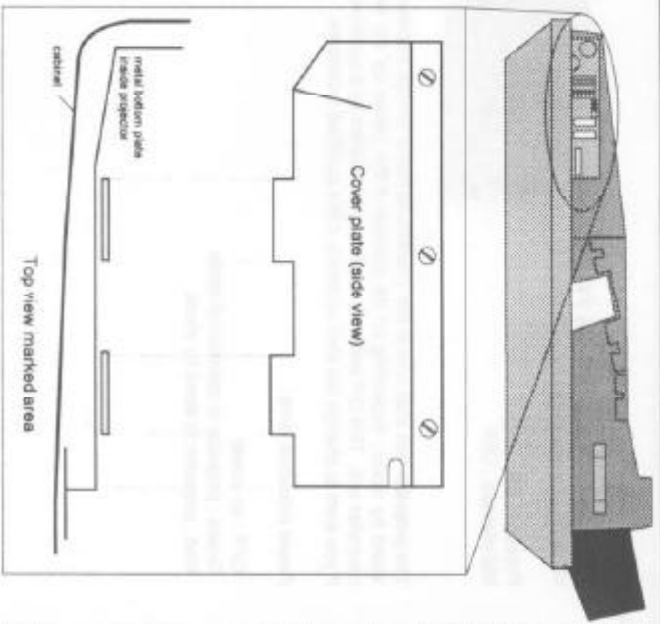
Fuses

Warning
For continued protection against fire hazard :

- replace with the same type of fuse.
- refer replacement to qualified service personnel

F1, F2   BARCO ord. no.
For 23) Vac(2x) T5A/250V   314104
For 12) Vac(2x) T10A/250V   314154

Procedure :

1. Open the top cover (see Getting access to the controls)
2. Unscrew the retaining screw of the power input protection plate.

Retaining screws
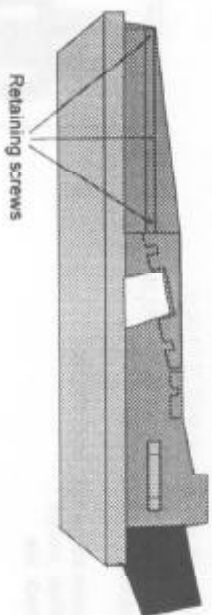
3. Remove the power input protection by sliding it a little backwards and lifting it up.

230V operation	120V operation
230V 2xT5A/250V	120V 2xT10A/250V
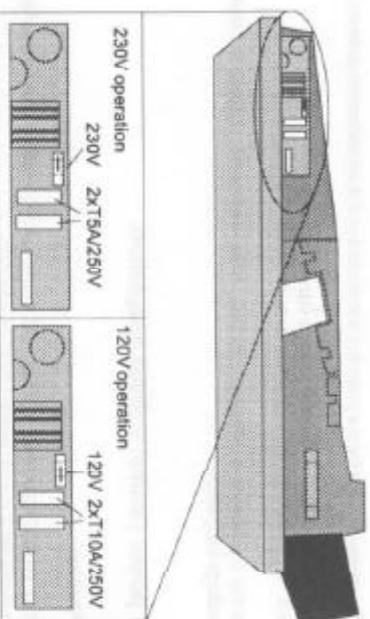
4. Pull out the 'power selector plug and re-insert it as illustrated in the above drawing, depending on the wall outlet in the room.
4. Pull out the fuses and place the correct fuses in their sockets. See table on next page for the correct fuses.
5. Re-install the protection plate.
   Insert the plate until the pins fit into the grooves of the bottom plate. The right side of the plate must be pushed behind the metal frame. The notch fits around the bolt. Secure the correct position by turning in the 3 screws.

CONNECTIONS

Source connections

Peripheral equipement

Switching on

The projector is switched ON and OFF using the power (mains) switch ON/OFF.

Pressed : ON
Not pressed : OFF

The projector can start now in the 'operational mode' (image displayed) or in the 'stand by mode', depending on the position of the 'power up' dip switch on the controller unit. This DIP switch is set during installation by a qualified technician. If you want to change its start up mode, call a qualified technician.

Power indication lamp :

OFF : no power
Green : projector in operational mode
Red : projector in stand by mode

Connecting a Composite Video source to port 1.

Composite video signals from a VCR, OFF air signal decoder, etc...

TV tuner, e.g. TVD/M40 stereo

VCR

Composite video

Audio amplifier

to next projector or to a monitor
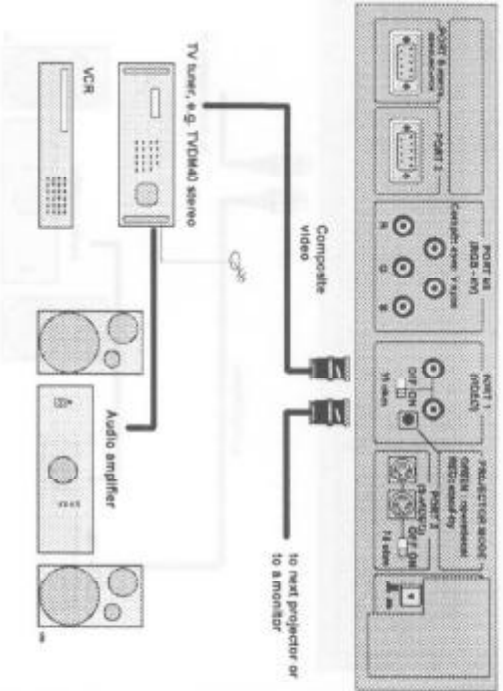
Video input selection :

Press digit button 1 on the RCU.

75 ohm termination switch.

Terminate the video input of the projector using the 75 ohm switch next to the video input panel when the projector operates alone or when it is the last projector on the video line when the projectors are connected in a loop through configuration.

ON : signal terminated
OFF : signal not terminated

Signal input connections to a stand alone projector

Five different types of input sources may be connected directly to the BARCO-GRAPHICS 1208.
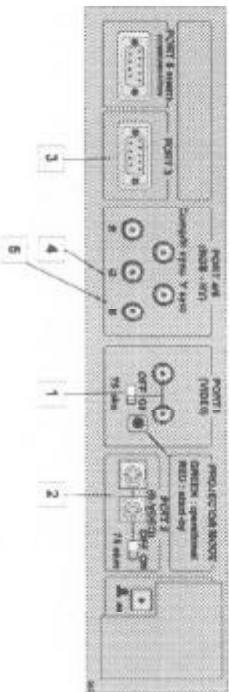
Source No	Projector input	Press digit button
1	Comp. Video	1
2	S-Video*	2
3	RGB analog	3
4	RGsB**	4
5	RGBS***	5

* Input signal Y/C (luma/chroma)
** Input signal : R, G and B with sync on G
*** Input signal : R, G and B with separate composite sync (S) or H+V sync

Connecting a RGB Analog source to port 3.

Connect your Analog source via an interface to Port 3.

RGB analog input with automatic sync detection. (Separate H and V sync inputs, with composite sync input or with sync signals on green.)
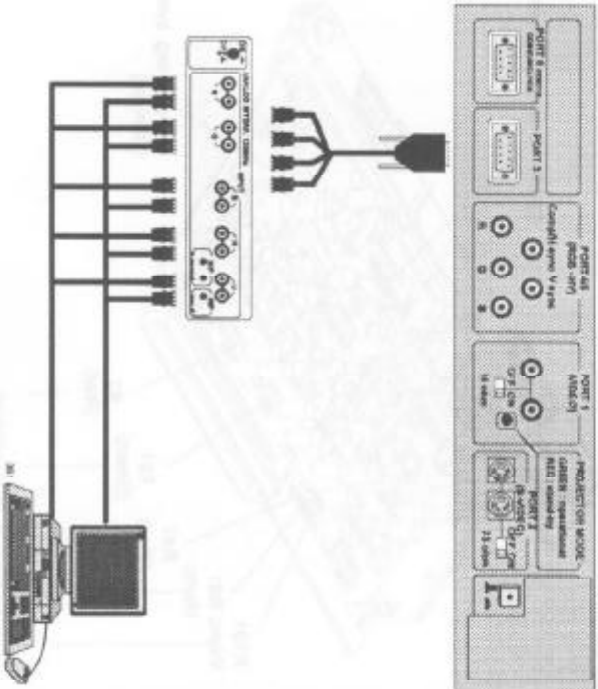
Pin configuration D9 connector of the Analog input.

1 not connected
2 ground RGBS
3 RED
4 GREEN
5 BLUE
6 ground RGBS
7 ground RGBS
8 Hor/comp. sync
9 Vert sync

Analog input selection :
Press digit button 3 on the RCU.

Connecting an S-Video source to port 2

Separate Y-luma/C-chroma signals for higher quality playback of Super VHS signals.
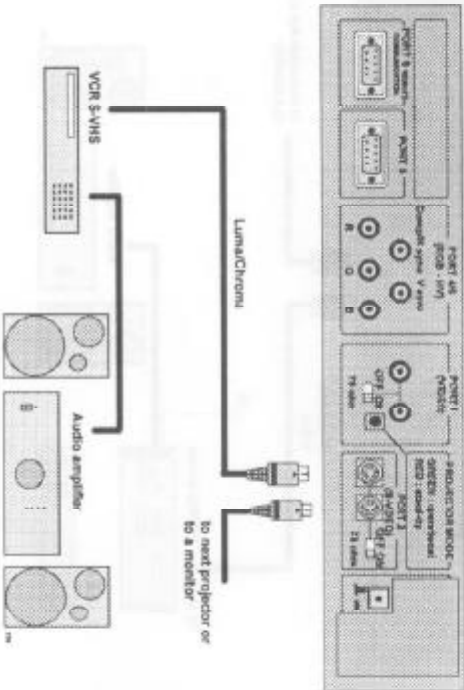
S-Video input selection :
Press digit button 2 on the RCU.

75 ohm termination switch.

Terminate the S-video input of the projector using the 75 ohm switch next to the S-video input panel when the projector operates alone or when it is the last projector on the S-video line when the projectors are connected in a loop through configuration.

ON : signal terminated
OFF : signal not terminated

Blue in green switch.

Blue characters are difficult to read, therefore the blue text will be displayed as cyan so that the readability becomes better.

Switch in the ON position : blue in green active.
Switch in the OFF position : blue in green disabled.

Force to neg. Sync.

Switch in the ON position : the sync pulses must be negative.
Switch in the OFF position : the sync polarity will be automatically detected.

Resistors and switchers on board level)

When changing a switch position or removing a resistor, turn off the projector and unplug the power cord from the wall outlet.
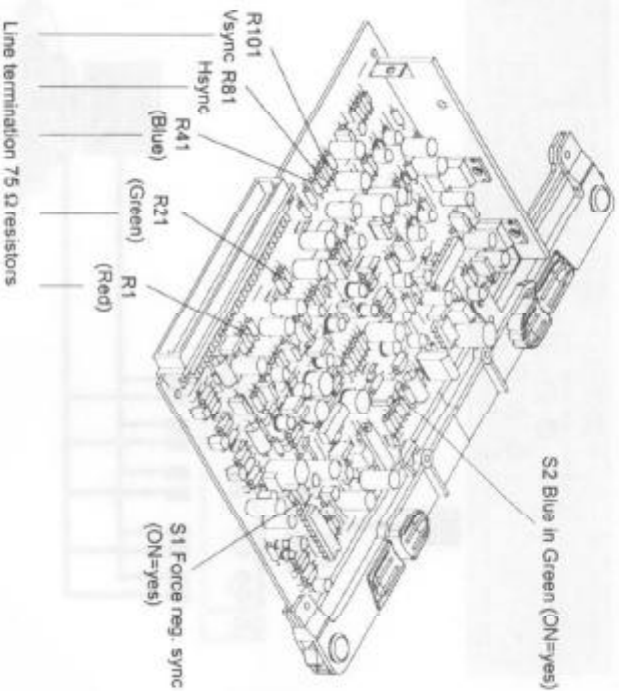
S2 Blue in Green (ON=yes)
S1 Force neg. sync (ON=yes)
R101
Vsync R81
Hsync
R41 (Blue)
R21 (Green)
R1 (Red)
Line termination 75 Ω resistors

Procedure :

- power down the projector and unplug the projector power cord.
- open the top cover.
- pull out the RGB input auto syn tracking module from the mother board.
- unsolder and remove the resistors or switch over the switches.

75 Ω termination switches.

In case of chaining the projectors, the 75 ohm line termination resistors must be on board when the projector is the last unit in the chain.

Resistors on board : 75 Ω terminated
Resistors removed : not terminated
In case of stand alone projectors, do not remove the resistors.

CONNECTIONS

Line termination : the RGB analog inputs are factory line terminated.

Standalone projector : inputs must be line terminated.

Last projector in a loop through configuration : inputs must be line terminated. In case of chaining the projectors with T-BNC connectors, (BARCO order number : 31 3668) remove the line termination jumpers on the RGB analog input module.

Warning
When removing the jumpers, turn off the projector and unplug the power cord from the wall outlet.

Procedure :
- power down the projector and unplug the projector power cord.
- open the top cover.
- Pull out the RGB analog input module from the mother board.
- Unsolder and remove the jumpers.
  Jumpers on the module : 75 ohm terminated
  Jumpers removed : not terminated

Location of jumpers on the module.

75 Ω termination jumpers

VERT SYNC
HOR SYNC
RED
GREEN
BLUE
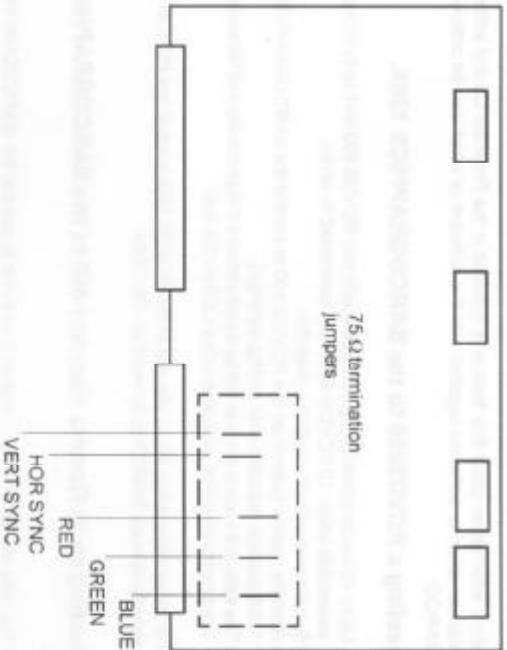
Connecting a RGB analog source to port 4/5.

RGB analog input terminals with separate H and V sync inputs, with composite sync inputs or with sync signals on green.

* Always use an interface when a computer and local monitor have to be connected to the projector. Interfaces to be applied :
  - universal analog interface. Order number : 98 26100.
  - RGB 120 MHz analog interface. Order number : 98 26570.
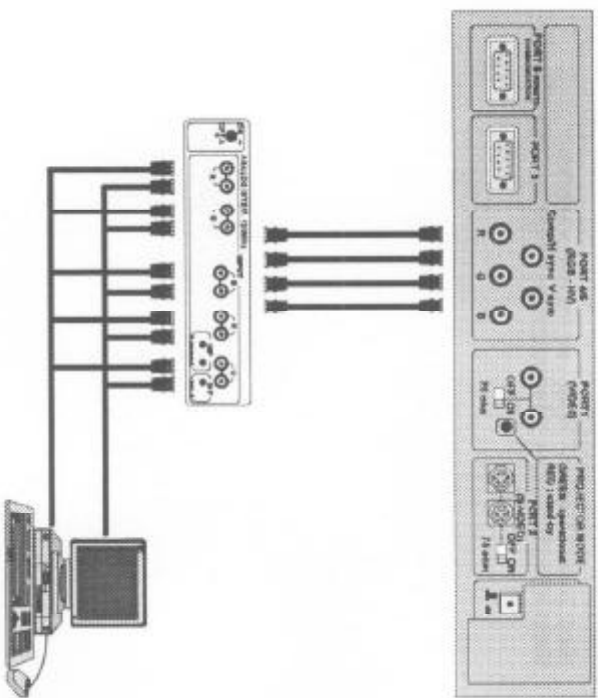
RGsB input selection:
(RGsB : R, G, B signals with sync on green)
Press digit button 4 on the RCU.

RGBS input selection :
(RGBS : R, G, B and separate sync; H- and V-sync or comp. sync)
Press digit button 5 on the RCU.

INSTALLATION ADJUSTMENT MODE

Installation adjustment mode

Overview flowchart installation adjustment mode

Access to optical controls

Installation adjustment procedure

Optical lens focusing

Raster centering

CRT angle correction

Diagonal focusing

Connecting a computer (e.g. an IBM PC or compatible, Apple Macintosh or Workstation) to the BARCOGRAPHICS 1208.

The BARCOGRAPHICS 1208 projector has a RS232 port that allows, it to communicate with a computer. (RS422, 'Macintosh', can be directly connected to the projector's port without any problem if you respect RS232 distances and baudrates.)

Applications :

Two main applications : remote control and data communications.

a) remote control :
- easy adjustment of projector via IBM PC (or compatible) or MAC connection.
- allow storage of multiple projector configurations and set ups.
- wide range of control possibilities.
- address range from 0 to 255.

b) data communications :
- sending adjustment data to the projector or copying the adjustment data from the projector to a hard memory device.

When chaining projectors, slave the output on the front side through to the input of the next projector.

More information about this feature is included in the Projector Control software manual which is delivered together with the software or which can be ordered at BARCO.

Connecting a RCVDS800 to the BARCOGRAPHICS 1208.

- Up to 10 inputs immediately accessible with one RCVDS 800 and up to 90 inputs accessible when 10 RCVDS 800s are connected in series.
- Serial communication with the projector.
- Remote control buttons on the RCVDS 800 to control the BARCOGRAPHICS 1208 (source selection and analog settings)
- The selected source number will be displayed on a 2 digit display and the selected input modules will be indicated with a LED on the rear.

For more information about the use of the RCVDS 800, consult the RCVDS 800 owner's manual. BARCO order number : 59 75004.

Connecting an IR Remote Receiver 800 to the BARCOGRAPHICS 1208.

This infra-red receiver unit makes it possible to control the BARCOGRAPHICS 1208 from another room. There is a communication line cable between the IR receiver and the projector or the RCVDS 800. The control information from the RCU800 can now be sent to the IR Remote Receiver 800. The IR Remote Receiver 800 displays the selected source on a 7-segment display.
Order number : 98 27815.

Overview flowchart Installation adjustment mode.

OPTICAL LENS FOCUSING
1. LOOSEN THE NUT ON THE REAR OF THE EXCELLENS. ROTATE THE LENS BARREL TO FOCUS THE CENTER OF THE IMAGE. THEN TIGHTEN THE NUT.
2. LOOSEN THE NUT ON THE FRONT OF THE XXXX LENS SECTION OF THE LENS TO FOCUS THE CORNERS OF THE IMAGE. THEN TIGHTEN THE NUT.
<ENTER> to continue
<EXIT> to return

RASTER CENTERING
REDUCE THE CONTRAST AND INCREASE THE BRIGHTNESS LEVEL UNTIL THE RASTER BECOMES VISIBLE BEHIND THE IMAGE ON THE FACE OF EACH CRT.
CENTER THE RASTER ON EACH CRT USING THE ARROW KEYS
<ENTER> to continue
<EXIT> to return

CRT PROJECTION ANGLE ADJUSTMENT
BLUE ON GREEN CROSSHAIRS WILL BE DISPLAYED.
IT ALLOW THE RED AND BLUE CRTS TO BE ALIGNED WITH THE GREEN CRT.
LOOSEN BOLTS A, B, C AND D TO PIVOT THE RED CRT, AND BOLDS E, F, G AND H TO PIVOT THE BLUE CRT.
<ENTER> to continue
<EXIT> to return

CRT PROJECTION ANGLE ADJUSTMENT
CRT PROJECTION ANGLE IS THE FIRST STEP OF STATIC CONVERGENCE ADJUSTMENT.
IT IS CRITICAL THAT THE RASTERS ARE CENTERED ON THE CRT FACE PLATES PRIOR TO PERFORMING THIS STEP DURING THIS PROCEDURE RED, ON GREEN AND THEN
<ENTER> to continue
<EXIT> to return

DIAGONAL IMAGE FOCUSING
1. TURN THE SCREW MARKED XX TO FOCUS THE IMAGE DIAGO-NALLY from LEFT (Green) TO RIGHT (Red)
2. TURN THE SCREW MARKED XX TO FOCUS THE IMAGE DIAGO-NALLY from LEFT (Red) TO RIGHT (Green)
<ENTER> to continue
<EXIT> to return

ALIGN CROSSHAIRS
<ENTER> continue
<EXIT> to return

xxxx = red, green or blue
xx = 00 to 05

Installation adjustment mode.

It will be necessary to perform several mechanical adjustments while in the Installation Adjustment Mode. Open the cabinet (see gaining access to controls) to align the mechanical parts.

To start up the "Adjustment mode, consult the owner's manual, "Start up of the adjustment mode". Use the arrow keys to highlight IN-STALLATION on the screen menu and then press ENTER.

SOURCE XX
YOU ARE NOW IN THE ADJUSTMENT MODE
SELECT A PATH FROM BELOW
GUIDED
RANDOM ACCESS
SERVICE
ORBITING
IRIS
Select with ↑ or ↓
then <ENTER>
<EXIT> to return

ENTER continues to Optical Focusing.
EXIT returns to operational mode.
ADJUST returns to operational mode.

When entering the installation mode, the projector will automatically switch to the internal pattern on 15 kHz/50 Hz without creating a new adjustment book.
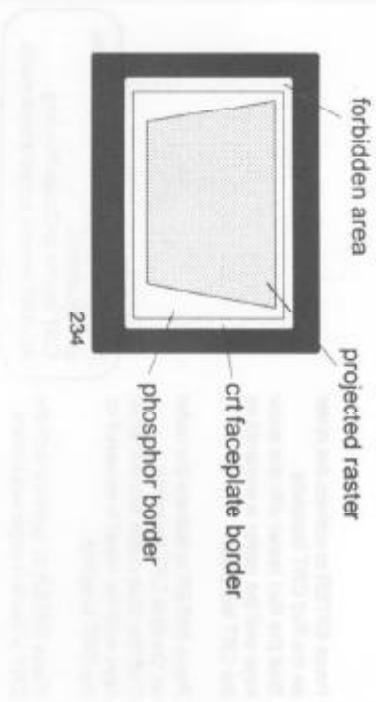
Raster centering

The raster must be centered on the CRT screen surface of each tube, therefore, it is necessary to look into the lenses.

Caution : To avoid eye discomfort while performing these adjustments, reduce the contrast and gradually increase the brightness level until the raster becomes visible behind the image.

Warning : In order to ensure maximum CRT longevity and to avoid CRT damage, do not shift the raster outside the phosphor area of the CRT.

Press ENTER to display the raster on the green CRT.

Look into the green lens and shift the raster with the arrow keys until it is centered in the middle of the CRT faceplate.

RASTER CENTERING

REDUCE THE CONTRAST AND
INCREASE THE BRIGHTNESS
LEVEL UNTIL THE RASTER
BECOMES VISIBLE BEFORE
THE IMAGE ON THE FACE OF
EACH CRT

CENTER THE RASTER ON
EACH CRT USING THE ARROW
KEYS

<ENTER> to continue

<EXIT> to return

forbidden area

projected raster

crt faceplate border

phosphor border

234

Optical Lens Focusing.

The optical focusing procedure is performed separately for each lens. The appropriate CRT will be switched on as the user proceeds through the optical focusing adjustment sequence.

Each lens has two focus adjustment points, one at the rear of the lens and one at the front. The center of the projected image is focused by loosening the wing nut at the rear end of the lens and rotating the lens barrel until the center of the image is clearly focused. The corners of the projected image are focused by loosening the wing nut at the front end of the lens and rotating the lens barrel until the corners of the image are clearly focused. Repetition of these adjustments may be necessary to optimize optical focusing .

Press ENTER key to continue.

OPTICAL LENS FOCUSING

1. LOOSEN THE NUT ON THE
REAR OF THE XXX LENS.
ROTATE THE LENS BARREL
TO FOCUS THE CENTER
OF THE IMAGE.
THEN TIGHTEN THE NUT

2. LOOSEN THE NUT ON THE
FRONT OF THE XXXX LENS
AND ROTATE THE FRONT
SECTION OF THE LENS TO
FOCUS THE CORNERS OF THE
IMAGE. THEN TIGHTEN THE NUT

<ENTER> to continue

<EXIT> to return

ENTER continues to Raster centering
EXIT returns to Adjustment mode main
menu.
ADJUST returns to operational mode.

corner focusing

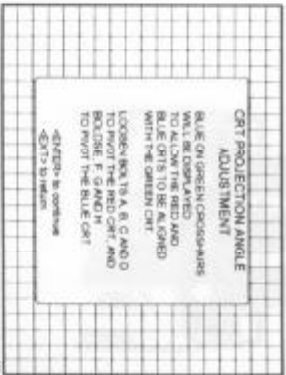center focusing
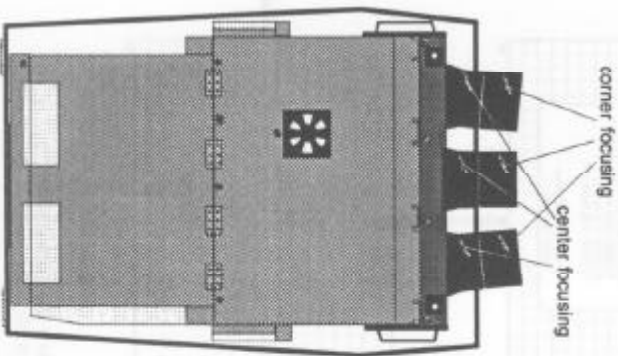
CRT projection angle adjustment

The projection angle of the red and blue CRT's is dependent on the desired size of the projected image. If the centers of green, blue and red do not coincide, the CRT projection angle must be adjusted. *NOTE :never try to correct this misalignment with the shift correction or the static convergence controls. These controls may only be applied to correct small errors which cannot be corrected by the CRT angle adjustment.*

Be sure that the rasters are centered on the CRT face.

Press ENTER to start the CRT angle adjustment procedure. A crosshairs (green and red) will be displayed on the screen.

CRT PROJECTION ANGLE
ADJUSTMENT

IT IS CRITICAL THAT THE
RASTERS ARE CENTERED ON
THE CRT FACE PLATES PRIOR TO
PERFORMING THIS STEP.
DURING THIS PROCEDURE
RED ON GREEN AND THEN

<ENTER> to continue
<EXIT> to help

ENTER continues with the second part of the CRT projecion angle adjustment. EXIT returns to Raster shift adjustment

CRT PROJECTION ANGLE
ADJUSTMENT

BLUE ON GREEN CROSSHAIRS
WILL BE DISPLAYED
TO ALLOW THE RED AND
BLUE CRTS TO BE ALIGNED
WITH THE GREEN CRT

LOOSEN BOLTS A, B, C AND D
TO PIVOT THE RED CRT, AND
BOLTS E, F, G AND H
TO PIVOT THE BLUE CRT

<ENTER> to continue
<EXIT> to help

ENTER continues to the crosshairs alignment.
EXIT returns to raster shift adjustment
ADJUST returns to operational mode.

---

correct raster position

wrong raster position
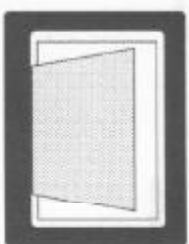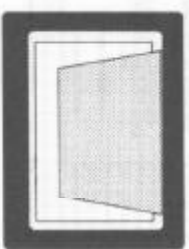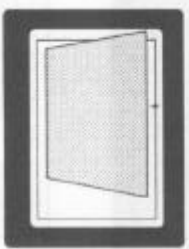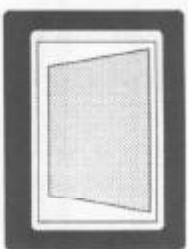
Press ENTER to activate the raster on the Red CRT faceplate. Shift the Red raster with the arrow keys until the raster is centered on the CRT faceplate.

Press ENTER to activate the raster on the Blue CRT faceplate. Shift the Blue raster with the arrow keys until the raster is centered on the CRT faceplate.

Press ENTER to continue with the CRT projection angle adjustment

ENTER continues to CRT Projection angle Adjustment.
EXIT returns to Optical focusing
ADJUST returns to operational mode.

Diagonal image focusing

With the diagonal image focusing corrections, it is possible to obtain uniform focus for the total projected image.

These corrections must be repeated for each color. The Diagonal image focusing is repeated 3 times, first for green then for red and then for blue.

First, be sure that the CRT projection angle is correctly adjusted, otherwise its not possible to obtain proper overal focus of the image.

xx = screw number indication on screen.

Adjustment procedure :
First.
To perform the diagonal image focusing, be sure the lenses are correctly focused (see chapter 'Optical lens focusing').

Proceed now to diagonal image focusing.
This adjustment procedure is performed separately for each picture tube.
The diagonal image focusing menu is repeated 3 times, first for green, then for red and then for blue.
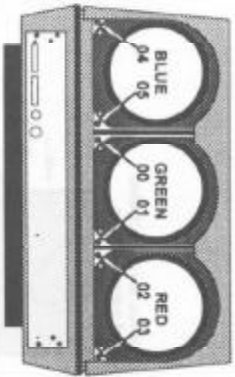Example : diagonal focusing the green image.

Equalize diagonally the focus from left (bottom) to right (top) by turning screw 00 of the projected color.
Equalize now diagonally the focus from left (top) to right (bottom) by turning screw 01 of the projected color.

Repeat the same procedure for the red and blue image using the corresponding screws.

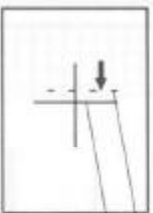To optimize the image focusing, repeat the optical lens focusing.

DIAGONAL IMAGE FOCUSING
1 TURN THE SCREW MARKED xx TO FOCUS THE IMAGE DIAGO-NALLY from LEFT (bottom) TO RIGHT (top)
2 TURN THE SCREW MARKED xx TO FOCUS THE IMAGE DIAGO-NALLY from LEFT (top) TO RIGHT (bottom)
<ENTER> to continue
<EXIT> to return

ENTER continues to the Path Selection menu.
EXIT returns to CRT Projection Angle Adjustment.
ADJUST returns to operational mode.

BLUE	04	05
GREEN	00	01
RED	02	03

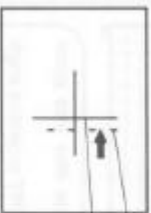|	left / right	right / left
GREEN	00	01
RED	02	03
BLUE	04	05

Loosen bolts E, F, G and H to pivot the blue CRT until the center of the Blue image and the center of the Green image coincide. When the angle of the blue CRT is corrected, tighten the four bolts.

blue crosshair
green crosshair
move the blue CRT to the outside, away from the green CRT

blue crosshair
green crosshair
move the blue CRT towards the green CRT

AUDIO CROSSHAIRS
<ENTER> CONTINUE
<EXIT> TO RETURN

ENTER continues to the diagonal focusing menu.
EXIT returns to the CRT projection angle adjustment.

MESSAGES, WARNINGS AND FAILURES

Message	Description
WARNING : source not available	The input is a valid input but the source is not connected to the input terminals or the input source is switched off.
WARNING : invalid key entry	When a wrong key is pressed on the RCU.
WARNING : invalid code entry	Message when the entered password is wrong.
WARNING : end of adjust range	End of adjustment range.
WARNING : input no longer available	Message will be displayed when the input source is no longer available. The following message then appears : 'check input signal or select new source'.
check input signal or select new source	Message will be displayed after the message 'input no longer available'. It asks to check the connections between the source and the projector or to check if the source is switched on.
WARNING : input selector not available	It warns you to check the power connection or the power status of the RCVDS800. Next message will appear immediatly on the screen : 'go to stand-by'.

Message	Description
SOURCE 01 Fh= 15.6 kHz Fv= 050 Hz	When selecting a new source, information about this source will be displayed on the screen. Source number, horizontal and vertical frequencies of the displayed source.
SOURCE 01	Announcement of the selected source.
enter password x x x x	Message to enter your password. Password contains 4 digits.
text on	These messages will be displayed on the screen when pushing the TEXT key.
text off	Text ON : the 'bar scale indication' will be enabled during the change of an analog control in the 'operational mode' + all warnings and failures will be displayed. Text OFF : the 'bar scale indication' will be disabled during the change of an analog control in the 'operational mode' + all warnings and failures will not be displayed.
PROJECTOR ADDRESS : 003	Indication of the projector address when activating the 'ADDRESS' button on the RCU with a pencil or other small object.
WARNING : input not available	When using the projector with the RCVDS 800, this warning will be displayed when selecting an input slot of an RCVDS where the input board is missing.

FAILURE RWM communication error	Hardware failure. Call a qualified service technician.
FAILURE IRIS communication error	Communication error between IRIS 800 and the projector. Call a qualified service technician.
WAIT starting up IRIS	Message during the start up of the IRIS 800. Message will disappear when the IRIS 800 is ready to accept commands.

WARNING : go to stand by	Projector will switch to 'stand-by' when the RCVDS 800 is no longer available.
WARNING : invalid frequency input	The entered frequency or applied frequency of the source is out of the projector's range.
WARNING : default settings loaded in the E2PROM	Adjustment settings are lost. Re-load using Control 800 Software via PC or MAC, or readjust image.
table is deleted	Message to inform that selected table is deleted. This message will be followed by 'confirm message', on which the user has to answer.
FAILURE invalid RWM soft version	Wrong software version in your projector. Call for technical support.
FAILURE I2C error addr. : 7FH3	Hardware failure. Call a qualified service technician for repair.
FAILURE short circuit on I2C bus	Hardware failure. Call a qualified service technician for repair.
FAILURE RCVDS communication error	Serial communication error between RCVDS800 and projector.

BARCO ceiling mount support

This appendix gives only an overview of the contents of the installation guidelines and also some overview drawings.
The total installation guidelines for the BARCO ceiling mounting support can be ordered by BARCO. BARCO order number : 59 75693.

I.Contents of the installation guidelines.

1. Mounting instructions for the upper support to the ceiling.

   a. Position of the upper support on the ceiling.
   b. Mounting of the 4 screwed rods on the upper support.

2. Projector placement on lower support.

3. Mounting instructions of the cord to lift up the projector.

   a. Mounting the cord support on the upper support.
   b. Cord insertion between the upper and lower support.
   c. Cord fixation

4. Lifting up and fixing the lower support (with projector) on the screwed rods.

5. Alignment of the projector-support assembly

   a. Projector water-level adjustment.
   b. Adjustment" projector axis perpendicular' on the screen surface.
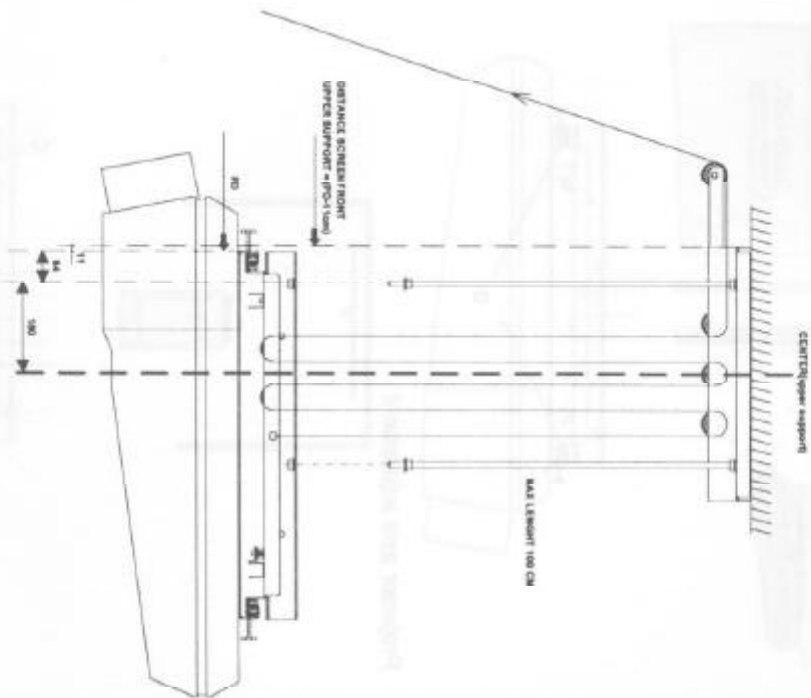   c. Projector movement for- or backward.

III. Overview drawing of the total system.

II. Exploded view of BARCO ceiling mount support.

Caution :
Be sure the mounting studs are tightened
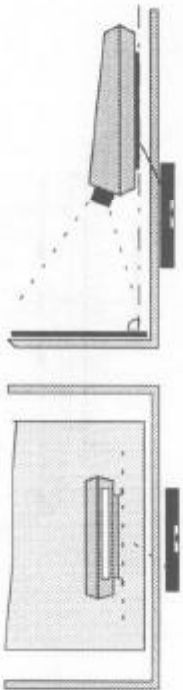securely before lifting up the projector
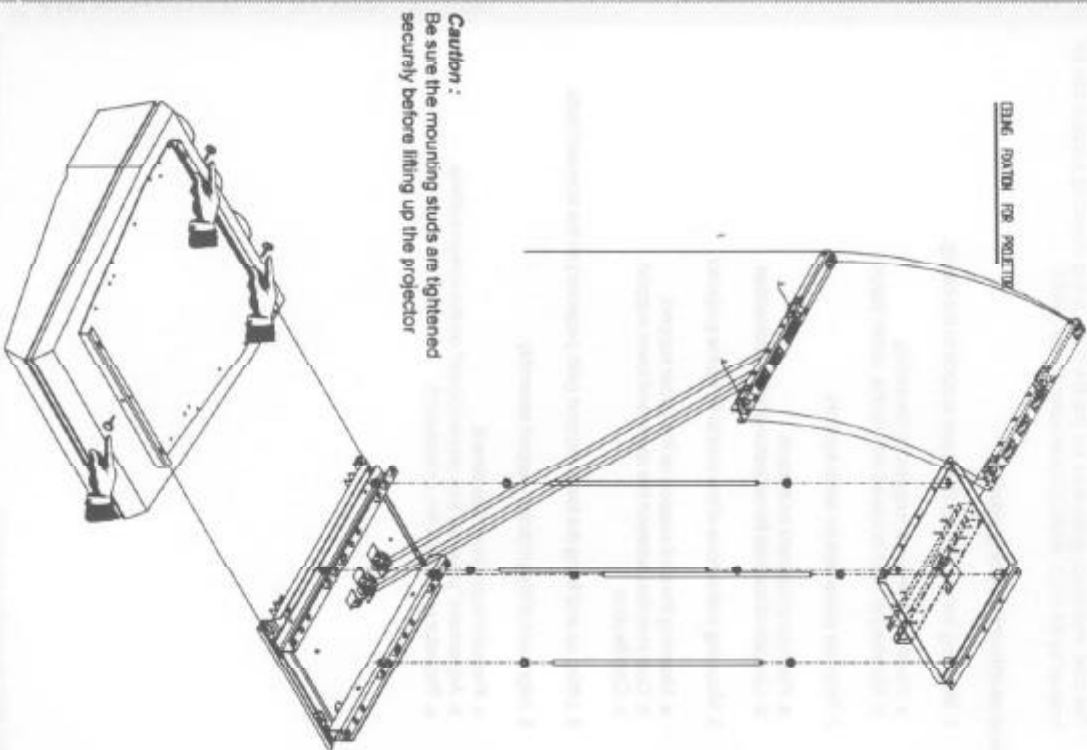
IV. Lay-out upper support
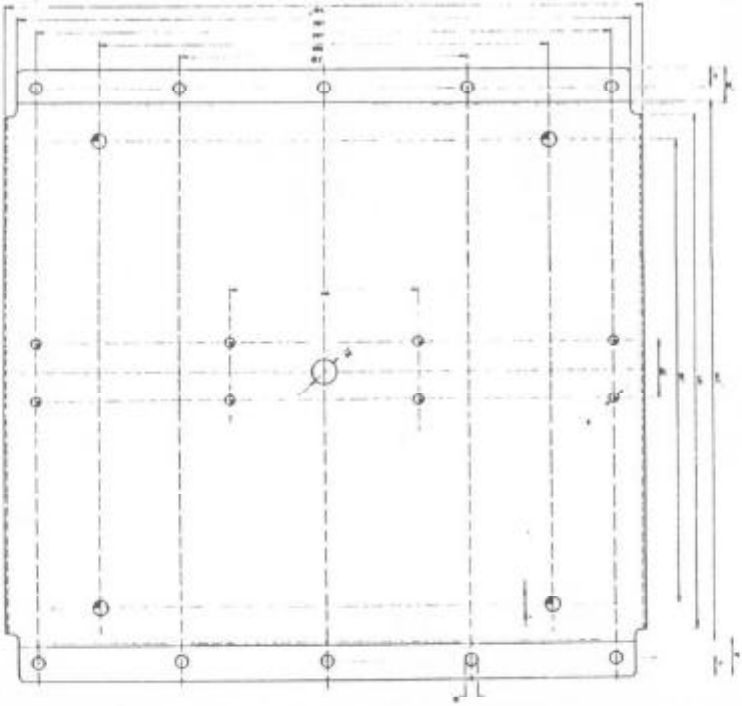
APPENDIX A : BARCO CEILING MOUNT SUPPORT

IV. Projector-position corrections

Water-level adjustment

Projector axis adjustment

APPENDIX A : BARCO CEILING MOUNT SUPPORT