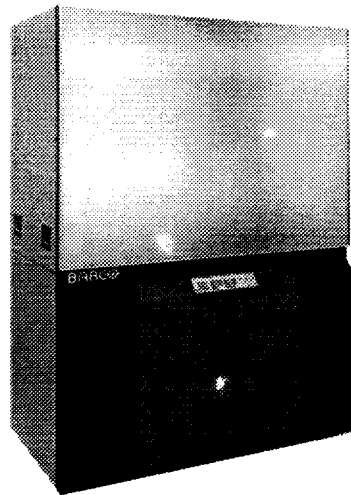


BARCO PROJECTION SYSTEMS

BARCO



BARCO RETRODATA
801S

90 00851 (230V AC)
90 00858 (120V AC)

SERVICE MANUAL

DATE: 14/11/95

ART. NR.: R5975446

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BARCO PROJECTION SYSTEMS

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BARCO RETRODATA
801S

90 00851 (230V AC)


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SAFETY NOTICE

DATE: 14/11/95


ART. NR.: R5975446

PRODUCT SAFETY NOTICE

Components identified by  or * have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

**DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH
IMPROPER SERVICING.**

SAFETY NOTICE

Components having special safety characteristics are identified by  on schematics and on the parts list in this SERVICE MANUAL and its supplements and bulletins. Before servicing this apparatus, it is important that the service technician read and follow the "**SAFETY PRECAUTIONS**" and "**PRODUCT SAFETY NOTICES**" in this Service Manual.

SAFETY PRECAUTIONS

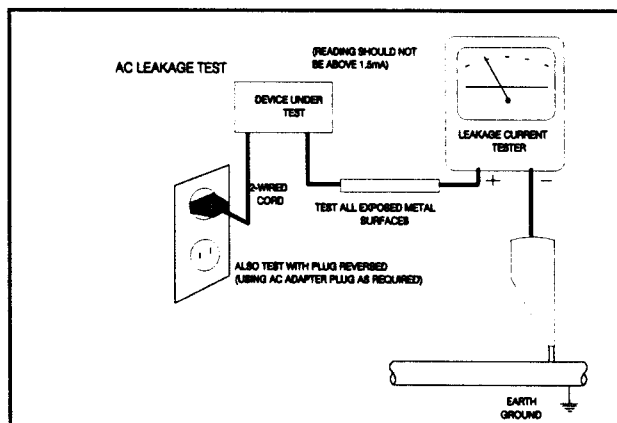
1. **Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items :**

a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, insulating materials, barriers, covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) an improperly fitted and/or incorrectly secured cover panels.

c. **Leakage Current Hot Check** - With the instrument completely reassembled, plug the AC line cord directly into a 220 V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.). especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 1.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test.

ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING ACCESSORIES.



WARNING: RISK OF ELECTRIC SHOCK DURING THIS TEST. THE PROJECTOR IS NOT CONNECTED TO GROUND. DO NOT TOUCH THE PROJECTOR AND USE WELL INSULATED TEST PROBES.

d. **X-Radiation and High Voltage** - Because the picture tubes are the primary potential source of X-radiation in solid-state projectors, they are specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place.

After replacement of any X-ray radiation related safety components (marked in this manual with an *), the EHT voltage board must be checked.

2. Read and comply with all caution and safety-related notes on or inside the projector cabinet or on the projector chassis, or on the picture tube.

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this apparatus. Design alterations and additions, including, but not limited to, circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this apparatus and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** - The picture tube in this projector encloses a high vacuum. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck.

For continued implosion protection, replace the picture tube only with one of the same type number.

5. **Hot Chassis Warning** - This projector chassis has two ground systems: the primary ground system is formed by the negative voltage of the rectified mains (power) and is only used as a reference in primary circuits; the secondary ground system is connected to earth ground via the earth conductor in the mains (power) lead. Separation between primary and secondary circuits is performed by the safety isolation transformers. Components bridging this transformers are also safety components and must never be defeated or altered.

All user-accessible conductive parts must be connected to earth ground, or are kept at SELV (Safety Extra Low Voltage).

6. **Observe original lead dress.** Take extra care to assure correct lead dress in the following areas:

- a. near sharp edges,
- b. near thermally hot parts - be sure that leads and components do not touch thermally hot parts,
- c. the AC supply,
- d. high voltage.

Always inspect in all areas for pinched, out-of-face, or frayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. PRODUCT SAFETY NOTICE - Many electrical and mechanical parts have special safety-related characteristics some of which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in BARCO service data by \triangle on schematics and in the parts list. Use

of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in BARCO service data parts list might create shock, fire, and/or other hazards. Product Safety is under review continuously and new instructions are issued whenever appropriate. For the latest information, always consult the appropriate current BARCO service literature.

SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addendums, read and follow the SAFETY PRECAUTIONS of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 2 of this publication, always follow the safety precautions.

Remember: Safety First.

General Servicing Precautions

1. Always unplug the instrument AC power cord from the AC power source before:

- Removing or reinstalling any component, circuit board, module, or any other instrument assembly.
- Disconnecting or reconnecting any instrument electrical plug or other electrical connection.
- Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

Caution: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemical on or near this instrument or any of its assemblies.

3. Unless specified otherwise in this service data, clean electrical contacts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength). **Caution:** *This is a flammable mixture.*

Unless specified otherwise in this service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service data might be equipped.

5. Do not apply AC power to this apparatus and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

6. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

7. Use with this instrument only the test fixtures specified in this service data.

CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Wear a commercially available high impedance discharging wrist strap device.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a static dissipative surface such as a 3M No 8210 table mat, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 260°C to 315°C.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch, or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique:
 - a. Allow the soldering iron tip to reach normal temperature (260°C to 315°C).
 - b. Heat the component lead until the solder melts.
 - c. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.

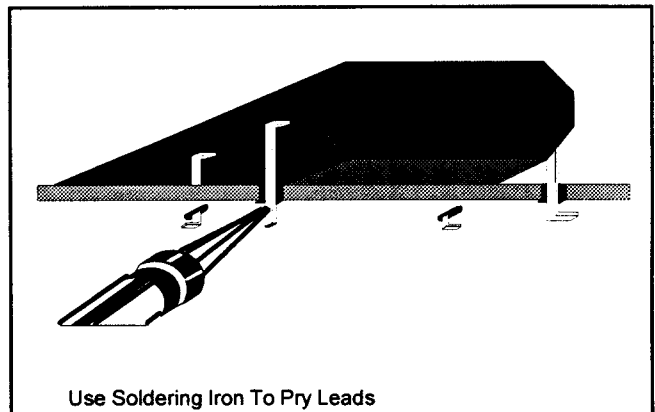
CAUTION: Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique:
 - a. Allow the soldering iron tip to reach normal temperature (260°C to 315°C).

b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



BARCO PROJECTION SYSTEMS



BARCO RETRODATA
801S

90 00851 (230V AC)

90 00858 (120V AC)

GENERAL INFORMATION

DATE: 14/11/95

ART. NR.: R5975446

RETRO 801s Series Projectors Rear-Screen Data and Graphics Projection Systems



Ultra sharp and crystal clear projection in high ambient light

BARCO's new RETRO 801s Series projectors are self-contained, high-performance rear-screen projection systems, capable of displaying images with outstanding light output, contrast and clarity under high ambient lighting conditions. Two models are available: the RETRODATA 801s, for presentation and training applications, and the RETROGRAPHICS 801s, for high-resolution applications such as CAD/CAM, process control, surveillance and simulation.

TRANSPORTABLE, STAND-ALONE PROJECTION SYSTEM

The RETRO 801s Series projectors are transportable, stand-alone rear-screen projection systems with a built-in 67" (1.7 m) diagonal high-resolution Fresnel-type screen, which deliver high-resolution images with outstanding light output, excellent resolution and rich contrast - in full ambient light environments.

EXTREMELY USER-FRIENDLY SET-UP AND CONTROL

The RETRO 801s Series projectors are based on BARCO's advanced digital architecture which provides user-friendly remote control of all set-up and display functions. Extremely precise, yet simple adjustments are accomplished through an intuitive, on-screen menu-driven display.

Utilising BARCO's optional IRIS 800 Auto-Convergence unit, on-screen convergence can be achieved in less than three minutes.

A sophisticated memory management system and auto-memory storage feature guarantee consistently sharp image quality.

BROAD COMPATIBILITY

The RETRODATA 801s and the RETROGRAPHICS 801s can display all worldwide Video standards (PAL, SECAM, NTSC 3.58, NTSC 4.43) as well as S-VHS (Y/C) signals.

The RETRODATA 801s is compatible with a wide range of PC graphics boards from 15 to 61.5 kHz with resolutions up to 1180 by 900 pixels/60 Hz. This makes it ideally suited for a wide range of presentation and training applications such as multimedia events, trade shows, training sessions, boardroom meetings,...

The broad autolock scan range of 15 - 94 kHz make the RETROGRAPHICS 801s the perfect solution for large screen process control, air traffic control, surveillance and simulation applications.



► The flexible design of the RETRO 801s Series projectors make them the product of choice for rental business and exhibitions.

The wide autolock facilities and unique mechanical design of the RETROGRAPHICS 801s make it an ideal tool for large screen traffic control applications. (Photo: Stockholm Traffic Control Centre of Swedish Railways - Courtesy by ▼ Studio toivo steen ab, Sweden).



State-of-the-art optical system

Advanced mechanical design

The RETRO 801s projectors incorporate a unique, state-of-the-art optical system, based on a single high-quality mirror. The special mechanical design of the projectors make them an easy-to-use building block to form an impressive information wall.

HIGH-QUALITY SINGLE MIRROR

BARCO's RETRO 801s Series projectors are based on a new optical concept. The system incorporates a single front surface-coated mirror, which results in the projection of ultra sharp images with an extremely high light output.

HIGH DEFINITION OPTICS

- High reliability and a consistently superb picture quality due to high-definition, liquid cooled, 8" square CRTs with stabilised pressure chambers.

to-use building block to form impressive communication walls. For applications of this type, two projectors may be stacked to form a 2xN matrix 'RETRO Wall'. In this situation, the top projector is placed upside down on top of the other and its image is inverted accordingly. In a 2x2 configuration, a RETRO Wall measures 2.8x2 m (9x6.8 ft.), clearly viewable under a wide angle in almost any ambient lighting condition.



▲ The chassis of the RETRO 801s Series projectors is fully accessible from the front of the unit on sliding rails, which facilitates the installation and maintenance.

Photo right: The ruggedised construction and the fine borders around the screen make the RETRO 801s projectors ideally suited to form a 2xN matrix 'RETRO Wall'. (Photo: A 3x2 RETRO Wall at the Public Utilities Board of Singapore for the control of the power distribution of the region. Installation: Electro-Acoustics Systems, in cooperation with M3i Systems, Inc.)



- The integration of F1.1 colour corrected hybrid lenses result in an optical resolution of 10 lp/mm.

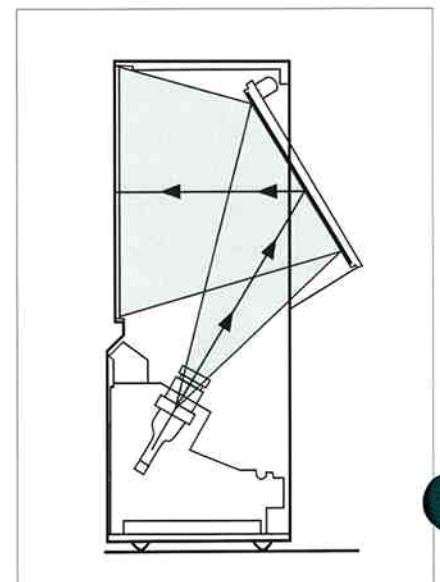
- Improved contrast, thanks to optical coupling between CRTs and lenses. The optical coupling is achieved using a high-quality liquid with a precision matched optical reflection index.

HIGH RESOLUTION SCREEN

A unique Fresnel/Lenticular-Blackstripe screen of 67" (1.7 m) diagonal offers not only a very wide horizontal and vertical viewing angle, but also crystal-clear images, even under high ambient light conditions.

IDEAL BUILDING BLOCK

For applications that require a very high data content, such as process control/monitoring applications, a RETRO 801s projector is an ideal, easy-



Unequalled user-friendliness

Easy set-up and control

The RETRO 801s Series are based on BARCO's advanced digital architecture. This offers not only outstanding technical specifications, but also facilitates the use and installation of the projectors.

LOGICAL ON-SCREEN MENUS

For simple geometry and convergence adjustments, the RETRO 801s Series combine a user-friendly remote control unit with logical on-screen menus.

GUIDED ADJUSTMENT PROGRAM

The projector offers a guided adjustment program which directs the user through the alignment procedure in the most efficient way, and a random adjustment mode which can be used for immediate access to one specific parameter.

LDI: LINEAR DIGITAL INTERPOLATION

Once parameters are selected for at least two sources, the LDI (Linear Digital Interpolation) feature of the projector will automatically calculate the image parameters of all additional sources by comparing them to previously set sources, to approximate all new source settings.

PROJECTOR SUPPORT SOFTWARE PACKAGE

Thanks to BARCO's optional Projector Support software package, it is possible to adjust user



▲ The special mechanical design of the IRIS 800 allows it to be installed on a tripod in front of a RETRO 801s projector.

INTERNAL PATTERN GENERATORS

Image adjustments may be accomplished 'on source', or through the use of an internally generated pattern, genlocked on the connected source or to a pre-programmed frequency, to allow for adjustment of the projector in the absence of an external source.

38 MEMORY BANKS

All image adjustments are individually set for each source and stored in one of the projector's 38 frequency related memory banks. Once image parameters are designated for each source, the projector will automatically select the correct settings for the source in use, giving you a perfect picture.

settings and geometry and convergence settings for up to 256 projectors from one central computer, and to store the settings for each source for future use on a computer hard disk or diskette. The software is available for IBM (or compatible) computers equipped with DOS operating system.

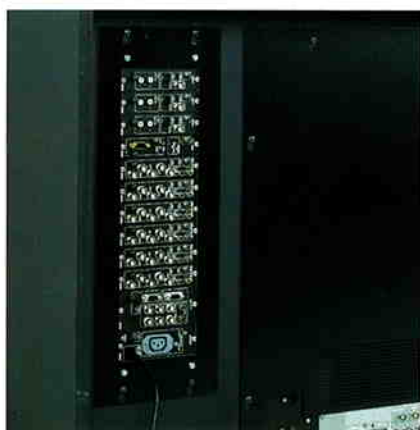
AUTOMATIC CONVERGENCE SYSTEM

The IRIS 800 is an optional automatic convergence system designed to automatically align the projected image on the screen faster and more accurately than ever before possible through the conventional 'manual' convergence process.



Optional peripheral devices

BARCO offers a wide range of additional peripheral devices and options, which further enhance the flexibility and versatility of the **RETRODATA 801s** and **RETROGRAPHICS 801s**.



▲ The RCVDS 800 can be easily installed into any RETRO 801s projector using a convenient cut-out in the rear of the projector.

RCVDS 800 SWITCHER

The Remote Controlled Video and Data Source Selector RCVDS 800 makes it possible to connect up to ten sources to the projector and to adjust all picture settings via the projector's infrared remote control.

For expanded use of the projector, it is possible to connect up to ten RCVDS 800 source selectors in series, so that up to 90 different sources may be connected simultaneously to a single projector.

RCVDS 05 SWITCHER

The RCVDS 05 is a high-bandwidth (220 MHz) source selector which makes it possible to select a wide range of video, data and graphics sources to one or more projectors or monitors.

RCVDS 800 MOUNTING KIT

The RCVDS 800 mounting kit is a special kit for the installation of a RCVDS 800 in the back panel of a RETRO 801s projector.

REMOTE INFRARED RECEIVER

An additional remote infrared receiver facilitates the use of the projector's infrared remote control in difficult installations.

EXECUTIVE REMOTE CONTROL

An executive infrared remote control is available, to accommodate source selection and adjustment of user settings without allowing changes to the projector's geometry and convergence settings.

▲ The RCVDS 800 allows for the connection of up to 10 different sources to one projector, and the adjustment of all picture settings via a convenient infrared remote control.

COMMUNICATION CABLES

Additional RS232/422 cables (D9/D9), with a length of 5, 15 or 30 m (16', 50' or 100') are available.

SPECIAL OPTIONS

BARCO offers a series of special options for non-standard applications (such as multi-screen applications): contrast modulation kit, soft-edge matching kit, orbiting kit, convergence on green, automatic colour temperature alignment system... For these kind of special applications, a team of specially trained application engineers continuously develop custom-made solutions and configurations on sophisticated CAD systems.

Technical specifications



▲ The RETRO 801s Series projectors are available in two attractive cabinet types. The 120 V version comes standard in a fine rosewood cabinet, while the 230 V model comes standard in a stylish, modern gray cabinet. Custom cabinet finishes are available on special request.

	RETRODATA 801s	RETROGRAPHICS 801s
SCAN FREQUENCIES		
Horizontal:	15-61.5 kHz autolock	15-94 kHz autolock
Vertical:	37-140 Hz autolock	37-140 Hz autolock
MINIMAL RETRACE TIME		
Horizontal:	< 3.3 μ s	< 2.5 μ s
Vertical:	< 300 μ s	< 200 μ s
PROJECTION SCREEN		
Size (diagonal):	67" (1.7 m)	67" (1.7 m)
Type:	Fresnel/Lenticular Blackstripe	Fresnel/Lenticular Blackstripe
Pitch:	1.0	0.62
Viewing angle (50 % brightness):		
- Horizontal:	$\pm 42^\circ$	$\pm 38^\circ$
- Vertical:	$\pm 13^\circ$	$\pm 11^\circ$
LUMINANCE		
At 10 % peak white:	770 Nit (225 ftL.)	940 Nit (274 ftL.)
ANSI:	103 Nit (30 ftL.)	130 Nit (38 ftL.)

CRTS

High brightness, high definition liquid cooled 8" CRTs

LENSES

High definition, fully colour corrected, liquid coupled, F1.1 hybrid lenses

OPTICAL RESOLUTION

10 lp/mm at 50 % MTF throughout the field

HORIZONTAL LINEARITY

< 1.5 % distortion in the full horizontal frequency range

RGB BANDWIDTH

75 MHz

OPERATOR CONTROLS

All controls are accessible through a soft-touch front panel or through the user-friendly infrared remote control:

- source switching
- user settings per source (sharpness, hue, colour, brightness, contrast, volume, bass, treble, balance)
- geometry per source
- convergence per source
- MONO/STEREO switch, normal/expand switch and mute function (only via the front panel).

An optional executive remote control unit is available for control of source switching and user settings per source.

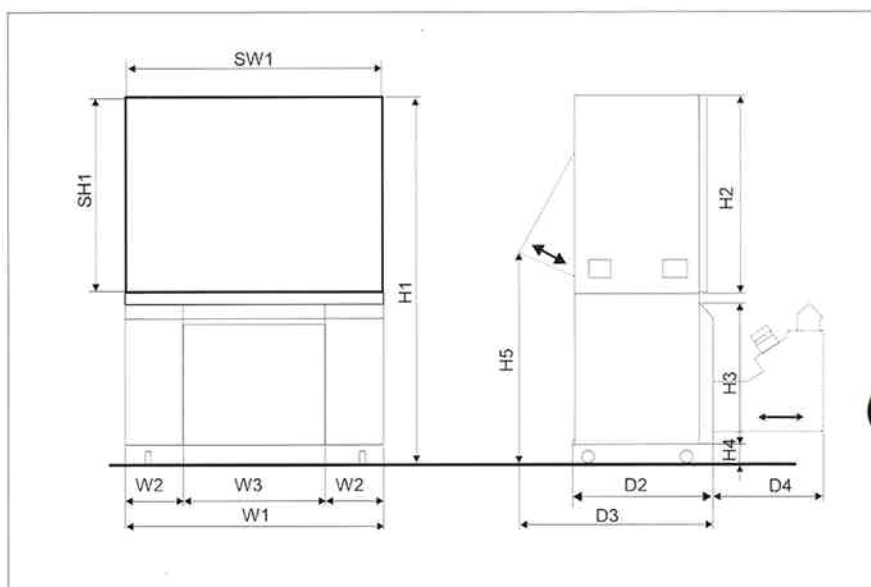
INPUTS

- RGB analog (BNC-connectors), sync on green or separate sync
- RGB analog input on D9-connector
- Video (PAL, SECAM, NTSC 3.58, NTSC 4.43), loop through (2xBNC) with 75 Ohm termination switch
- 4-pin S-Video input, loop through with 75 Ohm termination switch

SPECIAL FEATURES

- 38 frequency-related memory banks
- L.D.I. (Linear Digital Interpolation)
- Effective on-screen display: installation screens, help screens, barscale display of user settings, on-screen display of source frequencies
- Automatic storing of all adjustments
- Ability to set parameters to midposition
- Colour temperature adjustment (3200 K, 6500 K, 9300 K, or custom)
- Special RGB sharpness control: improves picture quality for high-frequency sources
- Text generators for other languages are available
- Easily transportable cabinet
- Ruggedised construction
- Extremely thin borders around the screen (1 cm). Adjacent screens can be separated by less than 0.8".
- A RETRODATA 801s can be upgraded to a RETROGRAPHICS 801s at the customer's location

Dimensions: mm inch		
W1	1378	54.25
W2	310	12.20
W3	757	29.80
SW1	1358	53.46
SH1	1021	40.20
H1	2035	80.12
H2	1059	41.69
H3	815	32.09
H4	110	4.33
H5	1210	47.64
D1	700	27.56
D2	730	28.74
D3	1028	40.47
D4	585	23.03



AUDIO

- Built-in stereo audio amplifier (2x15 W cont. sine wave), with 2 frontal 2-way bass reflex speaker systems (2x20 W)
- Stereo audio input on 2 Cinch (RCA phono) connectors
- 2 audio DIN connectors for external loudspeakers

WEIGHT

Net weight: 213 kg - 470 lbs.
Shipping weight: 313 kg - 690 lbs.

POWER CONSUMPTION

400 W

ELECTROMAGNETIC INTERFERENCE

The RETRODATA 801s and RETROGRAPHICS 801s comply with FCC part 15 Class A.

SAFETY REGULATIONS

The RETRODATA 801s and RETROGRAPHICS 801s comply with UL 1950 and IEC 950.

RADIATION REGULATIONS

The RETRODATA 801s and RETROGRAPHICS 801s comply with DHHS radiation emission standards 21 CFR Subchapter J.

ORDER INFORMATION

RETRODATA 801s:	
230 V:	90 00851
120 V:	90 00858
RETROGRAPHICS 801s:	
230 V:	90 00861
120 V:	90 00868

RCVDS 800:

230 V:	98 27450
120 V:	98 27459

RCVDS 05:

230 V:	98 27880
120 V:	98 27889

RCVDS 800 mounting kit: 98 27680

IRIS 800 98 27695

Projector Control software (DOS 3.x): 98 27530

Executive remote control: 98 27970

Remote infrared receiver: 98 27515

Communication cables:

5m (16 ft.):	98 27770
15 m (50 ft.):	98 27560
30 m (100 ft.):	98 27570

Special add-in boards:

* Orbiting kit:	98 27781
* Contrast modulation kit:	98 27800
* Soft-edge matching & contrast modulation kit:	98 27810

Contact

BARCO Projection Systems
Head Office
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BARCO

The information and data given are typical for the equipment described. However any individual item is subject to change without any notice.

Ref. nr. 59 90361 - Photographs: Studio DSP - Printed in Belgium

BARCO PROJECTION SYSTEMS



BARCO RETRODATA
801S

90 00851 (230V AC)

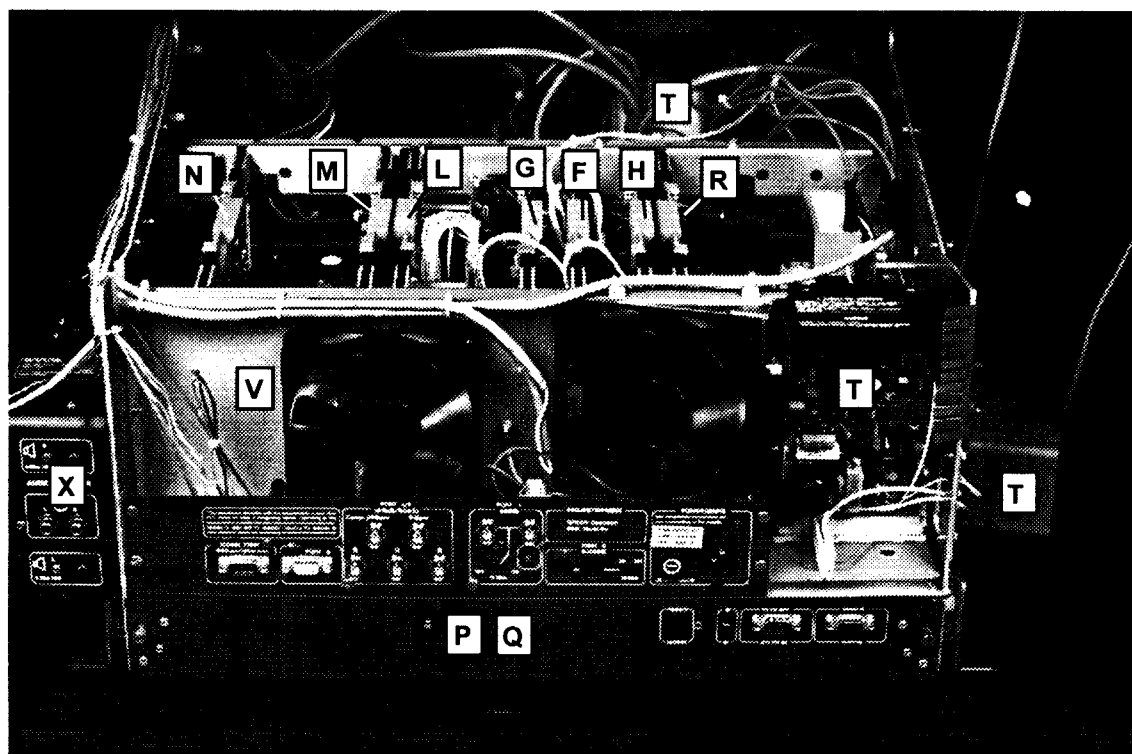
90 00858 (120V AC)

PARTS LIST ON BOARD LEVEL

DATE: 14/11/95

ART. NR.: R5975446

RETROPROJECTOR
rear view

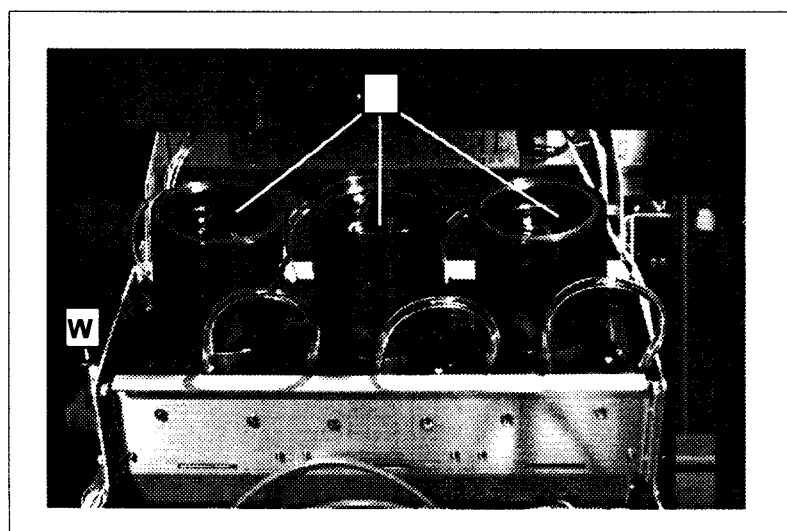
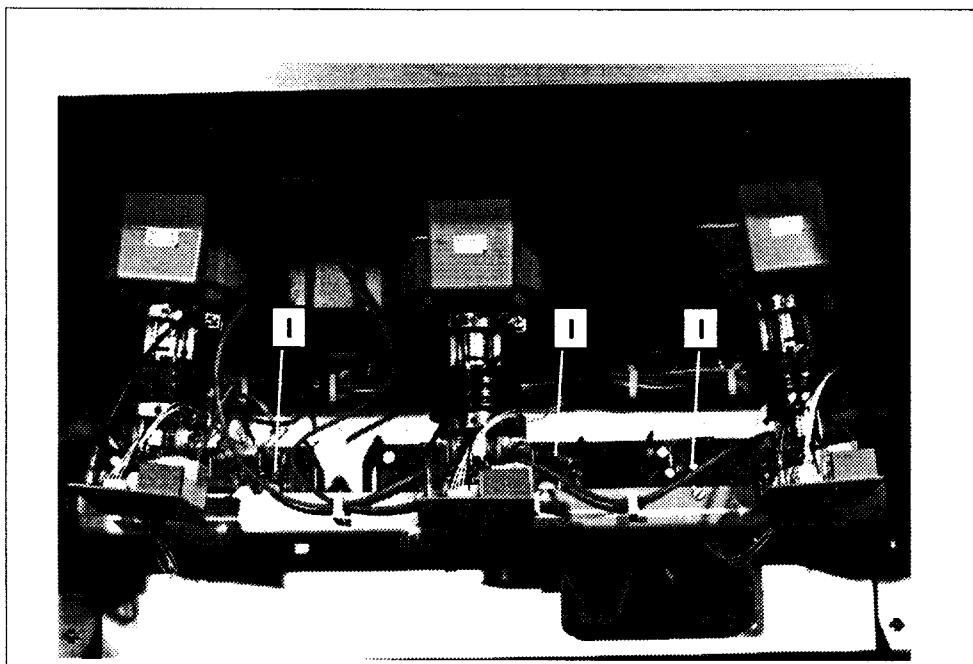


Sheet ref.

F	76 17481	RGB Input+Switching
G	76 21055	RGB Analog Input
H	76 21745	Q Decoder+RGB GAIN CTRL
L	76 22695	Sync.+Vert. Deflection
M	76 17415	Hor. Deflection
N	76 18425	Hor. SHIFT
P	76 2512	Convergence Driver
Q	76 2525	Convergence Output
P	76 1833	Convergence Connector

Sheet ref.

R	76 21705	SM POWER SUPPLY
T	76 17427	EHT GENERATOR
T	76 17447	EHT SPLITTER
T	76 1743	EHT QUADRUPLER
V	76 21751	FRAME
X	76 1792	SMP+AUDIO AMPLIFIER



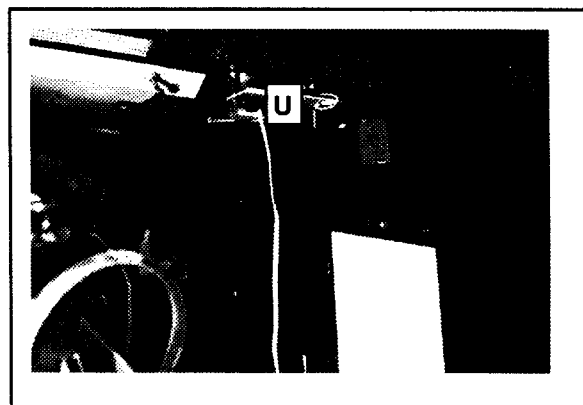
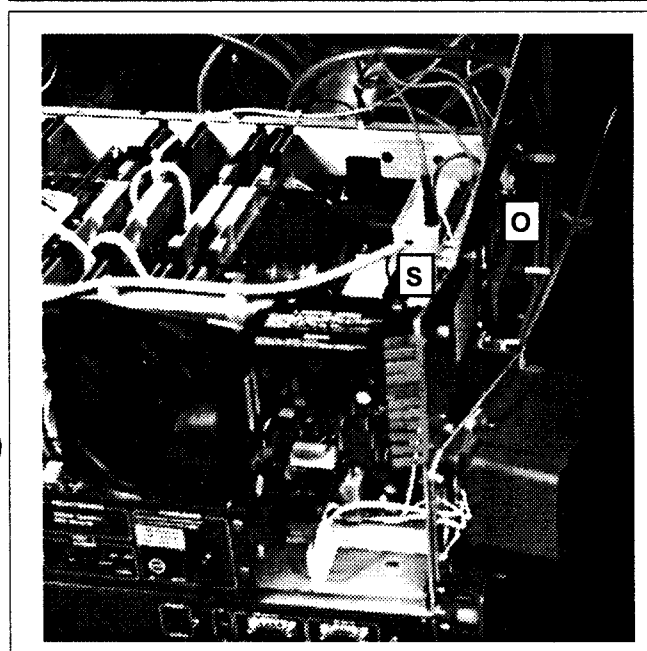
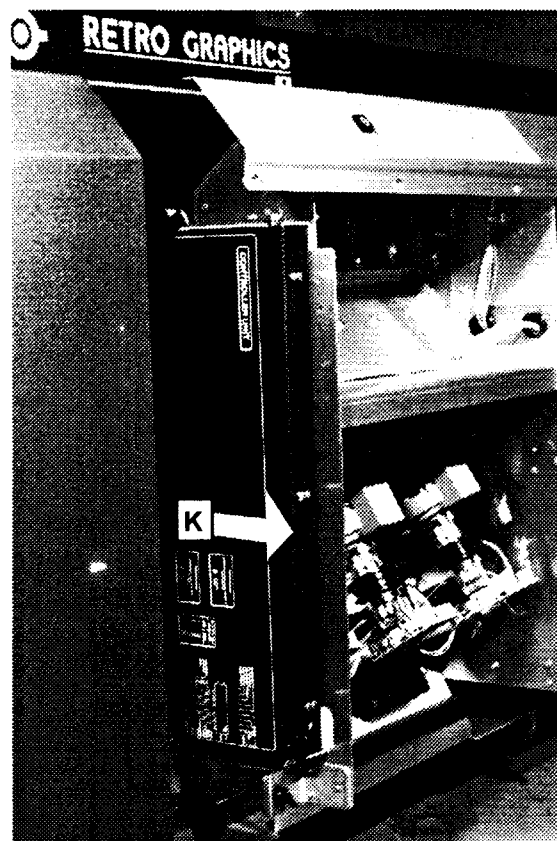
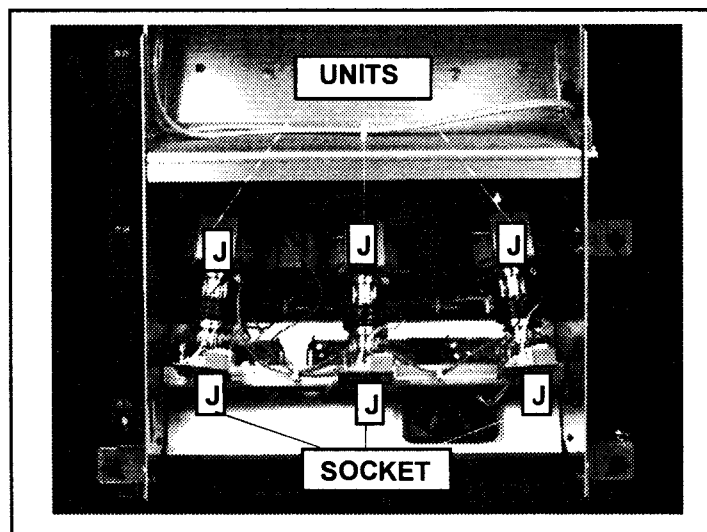
Sheet ref.

I	76 21735	R-G-B Output
W	76 1830	IR Receiver REAR

Sheet ref.

	13 0939	LENS HD114/A+B (R&B)
	13 0947	LENS HD117-12A/B ASSY (G)

RETROPROJECTOR
front view



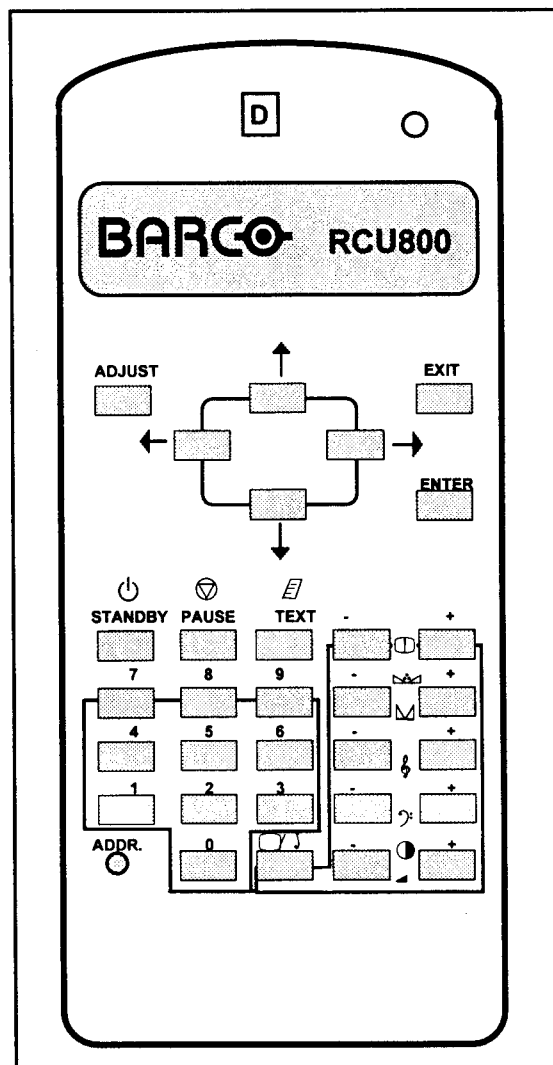
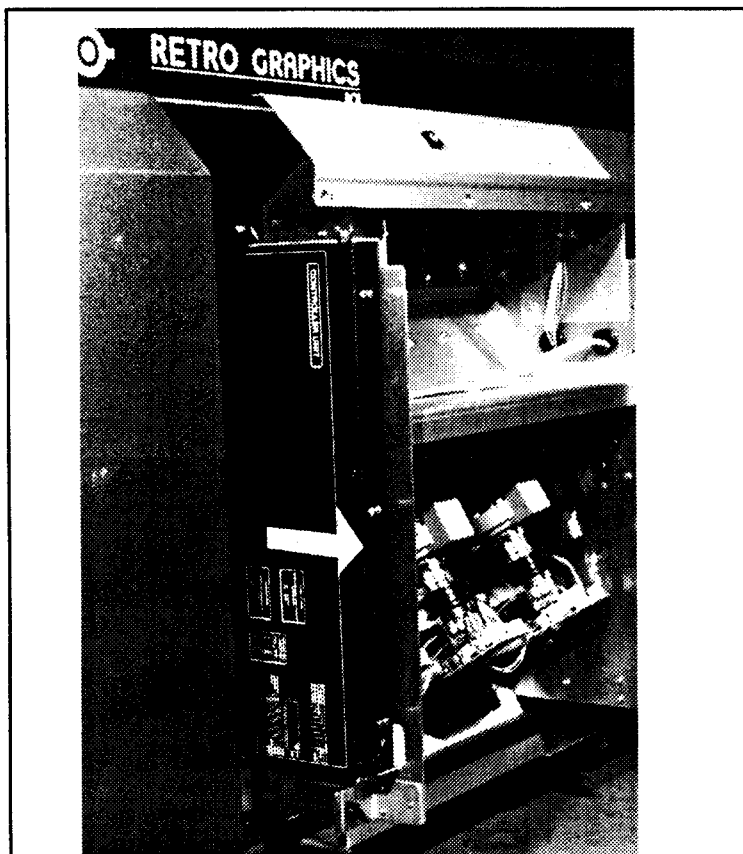
Sheet ref.

J	76 25432	CRT Unit RED
J	76 25435	CRT Unit GREEN
J	76 25436	CRT Unit BLUE
K	76 2249	Controller ASIC
U	76 2462	FAN Screen

Sheet ref.

J	76 22942	CRT Socket RED
J	76 22942	CRT Socket GREEN
J	76 22942	CRT Socket BLUE
O	76 2482	Electrical FOCUS
S	76 2463	Power (MAINS) Input

RETROPROJECTOR
control modules



Sheet ref.

E 79 1656 Control /Switch module

Sheet ref.

D 79 1655 Transmitter RCU800R

SPARE PARTS ON MODULE LEVEL

R130939	LENS HD114/A+B	2	R762175GB	UN FRM PJ49 CNN G801 VAC	1
R130947	LENS HD117 -12 A/B ASSY	1	R7617415	UN HOR PJ49 G801 MK2	1
			R7622695	UN VER+S PJ56 G80*	1
R761387D	CD REC 1015AWG18BK 350	3	R762249	UN CTRL PJ49 G801 ASIC	1
R761740	CDU FAN PJ49 G800 L100	2	R7621705	UN SMP PJ49R G801S	1
R7617427	UN EHT PJ49 G800 MK2	1	R7622942	UN CRT SKT PJ49R G 801 R	3
R761743	UN EHT PJ49 G800 QDR	1	R762462	UN FAN PJ49R L_SCRN	1
R7617447	UN EHT PJ49 G800 SPL	1	R762463	UN MNS PJ49R G801 CPL	1
R7617481	UN RGB PJ51 G1200 SW +TLL	1	R762482	UN FOC_C PJ49 G801 7MSP	1
R761784D	CDS FRM PJ49R G800	1	R762510	UN RS232 PJ56 G808	1
R761792	UN AUD PJ49R *800 +SMP	1	R762512	UN CNV PJ56 G808 DVR	1
R761830	UN RX PJ49R *800 IR RR	1	R762525	UN CNV PJ49R *801 OUT	1
R761833	UN CNV PJ49R *800 CNN	1	R7625432	UN CRT R*801S 7MSPA RY	1
R7618425	UN SH PJ49 G801 CPL	1	R7625435	UN CRT R*801S 7MSPA GY	1
R7621055	UN INP PJ51 RGB A_S_TRACK	1	R7625436	UN CRT R*801S 7MSPA BY	1
R762129	UN FAN2 PJ49R G800 CNN	1	R762544	UN FRM PJ49RC D801S 7MSPA	1
R762130	CDU FAN2 PJ49R G800	1			
R7621735	UN RGB PJ49 G801 OUT ABL	3	R791655	UN RCU PJ49R 800	1
R7621745	UN RGB PJ49 G801 DVR+QMK2	1	R791656	CSB PJ49R G800	1

SPARE PARTS ON MODULE LEVEL

a: First level modules

ART. NO	DESCRIPTION	QUANTITY
76 1743	UN EHT PJ49 G800 QDR	
76 17447	UN EHT PJ49 G800 SPL	
76 25422K	CRT Red	
76 25425K	CRT Green	
76 25426K	CRT Blue	

b: Second level modules

ART. NO	DESCRIPTION	QUANTITY
76 17415	UN HOR PJ49 G801 MK2	
76 17427	UN EHT PJ49 G800 MK2	
76 17481	UN RGB PJ51 G1200 SW +TLL	
76 21705	UN SMP PJ49R G801S	
76 21735	UN RGB PJ49 G801 OUT ABL	

c: Third level modules

ART. NO	DESCRIPTION	QUANTITY
76 1792	UN AUD PJ49R *800 +SMP	
76 18425	UN SH PJ49 G801 CPL	
76 2512	UN CNV PJ56 G808 Driver	
76 2525	UN CNV PJ49R *801 Output	
76 2249	UN CTRL PJ49 G801 ASIC	
76 22695	UN VER+S PJ56 G80*	
76 21745	UN RGB PJ49 G801 DVR+Q MK2	
79 1655	UN RCU PJ49R 800	

BARCO PROJECTION SYSTEMS

BARCO

BARCO RETRODATA
801S

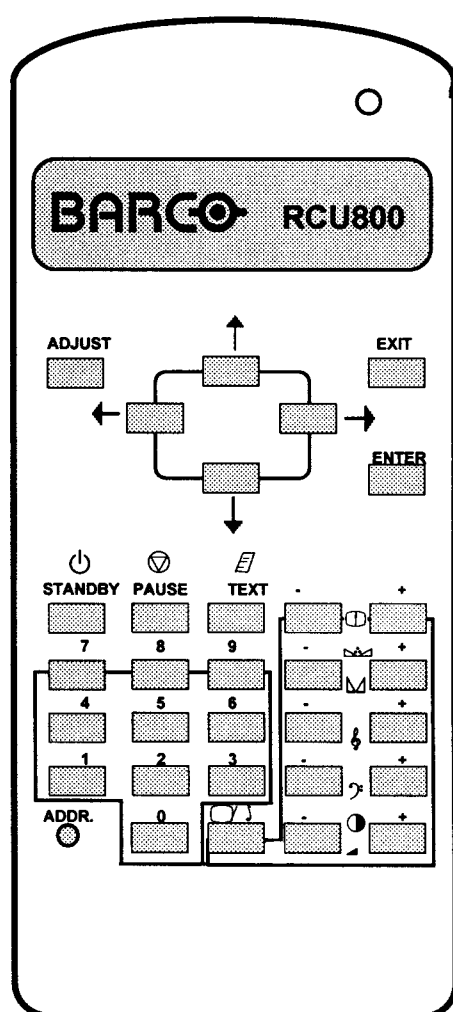
90 00851 (230V AC)

90 00858 (120V AC)

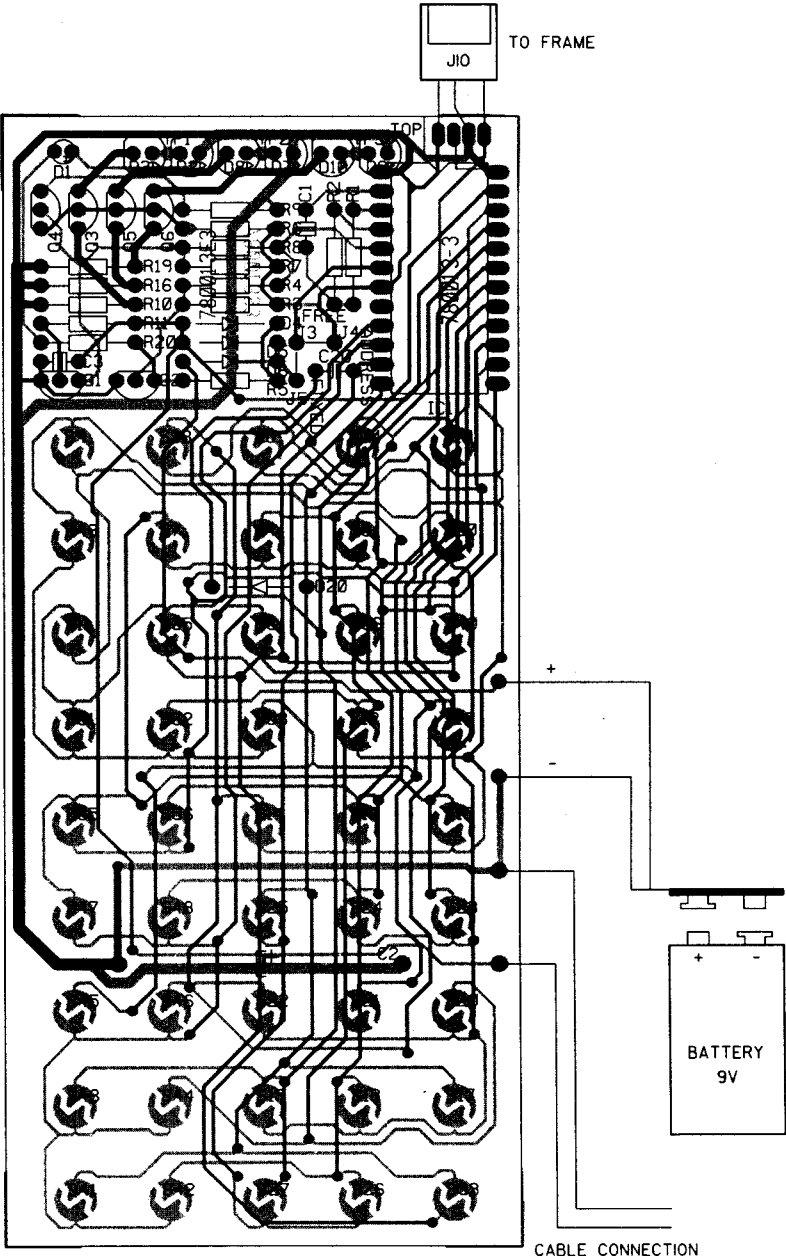
SERVICE SHEETS

DATE: 14/11/95

ART. NR.: R5975446



stand-by	
pause/park	
sharpness	
tint	
color	
brightness	
contrast	
balance	
treble	
bass	
volume	



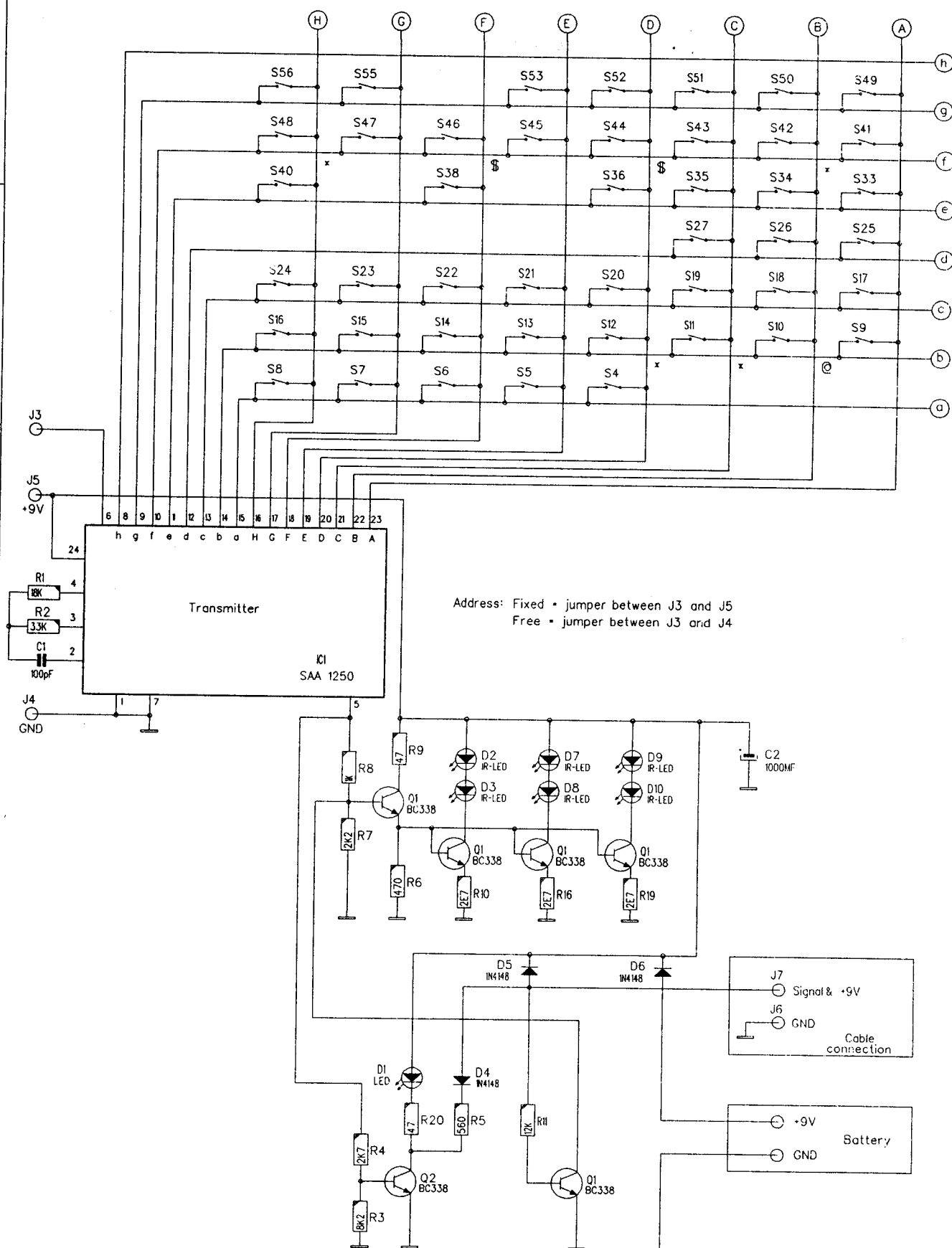
Name		Article nr.
Transmitter		761655
Date	Drawn	Checked
29/10/1991	PG	SSG

BARCO PROJECTION SYSTEMS

Modifications reserved

780013

BARCO

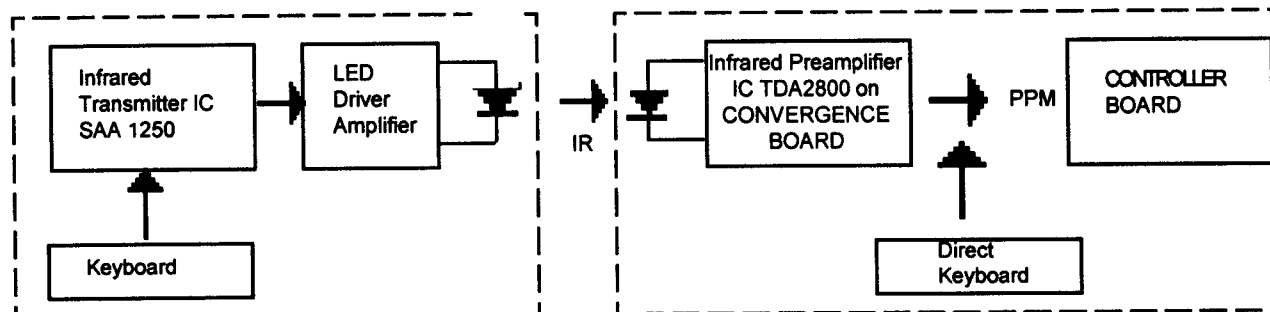


- Codes on row h are reserved, but the keys are not implemented.
- Codes marked with * reset the SAA1250 address flip flop.
- Codes marked with \$ reset the SAA1250 address flip flop when pressed simultaneously.
- Codes marked with @ emits command 00 and will be ignored by the receiver when accompanied by address 0.

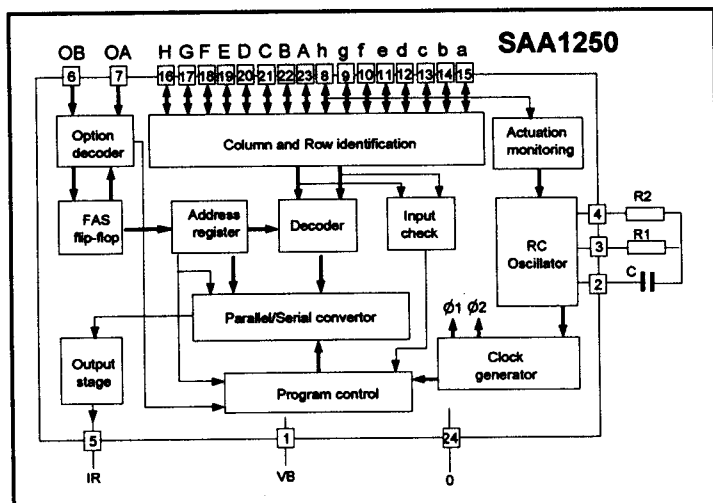
Modifications reserved

Name	Transmitter	Article nr.	791655 00
Date	06/06/1991	Drawn	PGOE
		Checked	SCG
BARCO PROJECTION SYSTEMS			

BLOCK DIAGRAM



BLOCK DIAGRAM IC SAA1250



Code for the OA and OB address inputs

input	OA	OB
option I	H	H
option II	H	L
option III	L	H
free address selection	L*	L*

* L impulse (min.30us)

Used options:

- Option III: alle commands are sent with address 10
- Option: free address selection

Command table of the infrared transmitter IC SAA 1250

Command	Input code		Option III	Free Address Selection
No	a b c d e f g h	A B C D E F G H	Address 10	OA and OB to L potential
S5 Down	x			
S6 Up	x			
S7 Right	x			
S8 Left	x			
S9 Exit	x	x		
S10 Adjust	x	x		
S11 Enter	x	x		
S14 Text	x			
S15 Stdbby	x			
S16 Pause	x			

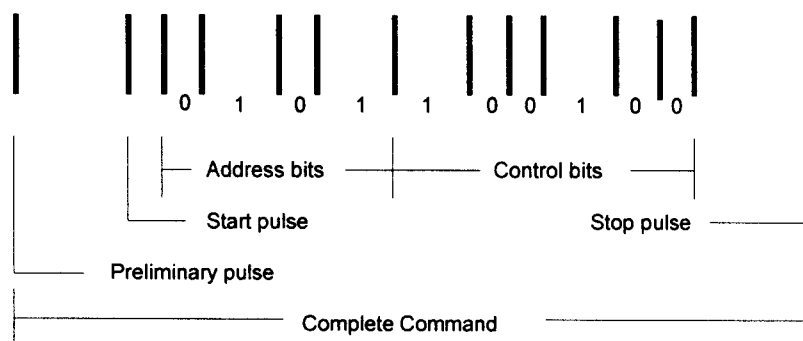
Command table of the infrared transmitter IC SAA 1250 (continu)

Command	Input code		Option III	Free Address Selection
No	a b c d e f g h	A B C D E F G H	Address 10	OA and OB to L potential
S17 1	x	x		Address 1
S18 2	x	x		Address 2
S19 3	x	x		Address 3
S20 4	x	x		Address 4
S21 5	x	x		Address 5
S22 6	x	x		Address 6
S23 7	x	x		Address 7
S24 8	x	x		Address 8
S25 9	x	x		Address 9
S26 0	x	x		Address 10
S27 Toggle	x	x		Address 11
S33 Address	x	x		FAS OFF
S41 Contr+	x	x		
S42 Contr -	x	x		
S43 Bright+	x	x		
S44 Bright -	x	x		
S45 Sat+	x	x		
S46 Sat -	x	x		
S47 Tint+	x	x		
S48 Tint -	x	x		
S55 Sharp+	x	x		
S56 Sharp -	x	x		

Operational mode

According to Table above, the SAA 1250 operates in two modes, which are determined via the OA and OB address input (see table on preceding page).

The first command is given about 20ms after contact actuation. All following commands are sent periodically every 130 ms.



The signals are transmitted by means of infrared light in the shape of packages pulses. For the transmission of a 10-bit word, 14 pulses are required. The binary information of a bit is contained in the time interval between two pulses. We define the time T (approx. 100us) as the basis for the code to be employed.

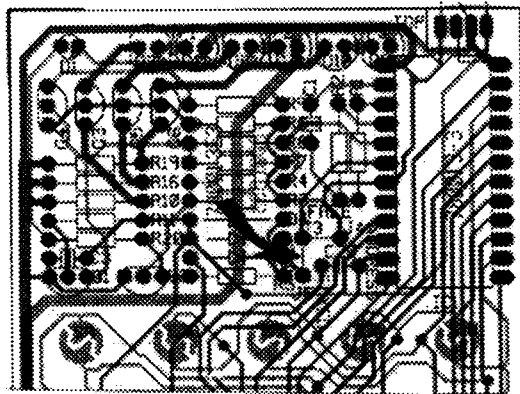
duration T = binary digit "0"

duration 2T = binary digit "1"

Spacing between preliminary pulse and start pulse 3T. This is followed after a 1T by the 11 data pulses and terminated after a 3T interval by the stop pulse.

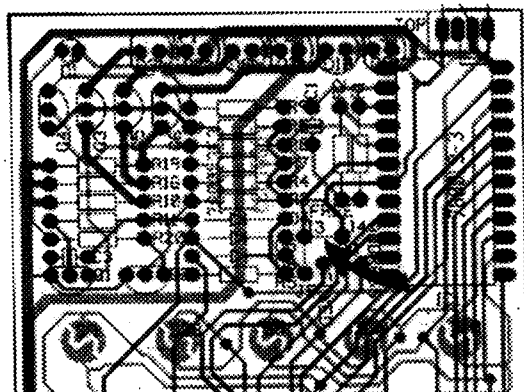
The OPTION III and the FREE ADDRESS SELECTION (FAS) are defined in the remote control RCU800 by means of an inserted jumper on the printed circuit board, see PCB lay-out.

FIXED ADDRESS SELECTION MODE



First signal is transmitted 20ms after key depression, further signals periodically in a distance of 130ms with Address 15.

FREE ADDRESS SELECTION MODE



First signal is transmitted 20ms after key depression, further signals every 130ms.

The commands can be transmitted consecutively to various addresses with free address selection.

In this mode the required address must be initially entered into the address register of the transmitter IC SAA1250, using one of the commands 17 to 32. Then all following commands are transmitted together with the stored address, including commands 17 to 32.

The command 33 (FAS off) clear, under the conditions of a L signal permanently applied to both address inputs, only the address register.

TRANSMITTER RCU800R

79 1655

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
11 2242	C..1	C NPO MI 100P J5 63	13 1424	Q..1	Q BC338 N 25 / 0A8
11 1135	C..2	C ELAX 1000M T 10	13 1424	Q..2	Q BC338 N 25 / 0A8
11 2744	C.20	C CE MI 2K7 K5 63	13 1424	Q..3	Q BC338 N 25 / 0A8
13 1662	D..1	D LED D3 RED	13 1424	Q..4	Q BC338 N 25 / 0A8
13 16666	D..2	D LED D5 IR CQY89A2	13 1424	Q..5	Q BC338 N 25 / 0A8
13 16666	D..3	D LED D5 IR CQY89A2	13 1424	Q..6	Q BC338 N 25 / 0A8
13 1621	D..4	D 1N4148 SWITCH	10 11512	R..1	R CF H 18K G 0W25
13 1621	D..5	D 1N4148 SWITCH	10 1154	R..2	R CF H 33K J 0W25
13 1621	D..6	D 1N4148 SWITCH	10 1147	R..3	R CF H 8K2 J 0W25
13 16666	D..7	D LED D5 IR CQY89A2	10 1141	R..4	R CF H 2K7 J 0W25
13 16666	D..8	D LED D5 IR CQY89A2	10 1133	R..5	R CF H560E J 0W25
13 16666	D..9	D LED D5 IR CQY89A2	10 1132	R..6	R CF H470E J 0W25
13 16666	D.10	D LED D5 IR CQY89A2	10 1141	R..7	R CF H 2K7 J 0W25
13 1621	D.20	D 1N4148 SWITCH	10 1136	R..8	R CF H 1K J 0W25
13 7371	I..1	U 1250 SAA IR TRAMIT	10 1120	R..9	R CF H 47E J 0W25
34 8100	J..1	WIRE JUMPER 0,6 M AUTOM	10 1105	R.10	R CF H 2E7 J 0W25 R25X
78 0013	PC..	PCB PJ 49 TRAMIT *800 791636	10 1149	R.11	R CF H 12K J 0W25
			10 1105	R.16	R CF H 2E7 J 0W25 R25X
			10 1105	R.19	R CF H 2E7 J 0W25 R25X
			10 1120	R.20	R CF H 47E J 0W25

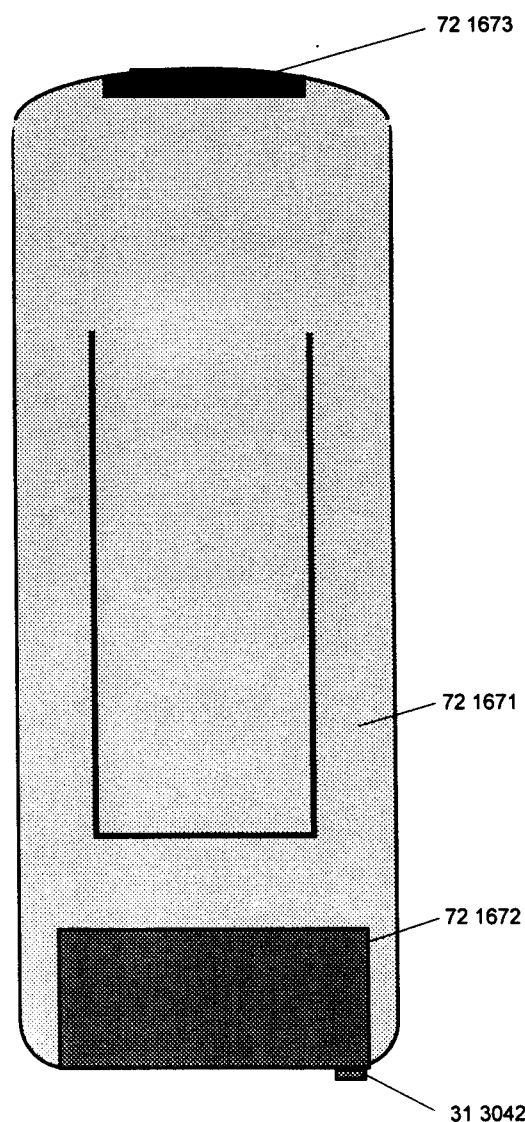
TRANSMITTER RCU800R

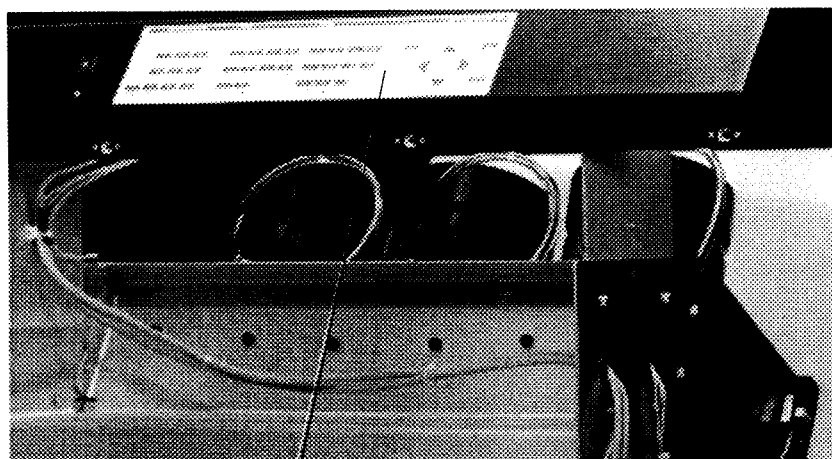
79 1655

ART.NO.	DESCRIPTION	QUANTITY	ART.NO.	DESCRIPTION	QUANTITY
13 1424	Q BC338 N 25 / 0A8	6	72 1672	CASE TV 40 TRAMIT DOOR	*1
13 1621	D 1N4148 SWITCH	4	72 1673	WINDOW TV 40 IR TRAMIT	*1
13 1662	D LED D3 RED	1	72 1676	KNOB PUSH TRAMIT 40 BL	5
13 16666	D LED D5 IR CQY89A2	6	72 16762	KNOB PUSH TRAMIT 40 RE	1
13 7371	U 1250 SAA IR TRAMI	1	72 16768	KNOB PUSH TRAMIT 40 GR	25
31 3042	J PHONE FCT D 2,5 MONO	*1	79 1636A	UN TRAMIT PJ 49 IR RCU800	1
31 3196	J BAT NWS P 2 9V	1	79 1636D	UN TRAMIT PJ 49 IR RCU800	1
32 7000	BATTERY 9V SIZE PP3 ALKALINE	1	80 0181	SWITCH TV 40 MATRIX TRAMIT	1
36 15075	SCREW DIN7981 3,2X 8,5 MP+	2	80 0349	CASE TV 40 TRAMIT LEAFLET WIN	1
59 3529	BAG PE 100X 220X 0,07	1	80 2683	KNOB PUSH TRAMIT PJ 49 ADDRESS	1
59 75064	LEAFLET RCVDS800 TRAMIT	1	80 2862	CASE PJ 49 TRAMIT COVER UP	1
72 1671	CASE TV 40 TRAMIT DOWN	*1	80 3077	CASE PJ 49 R TRAMIT DPL	1

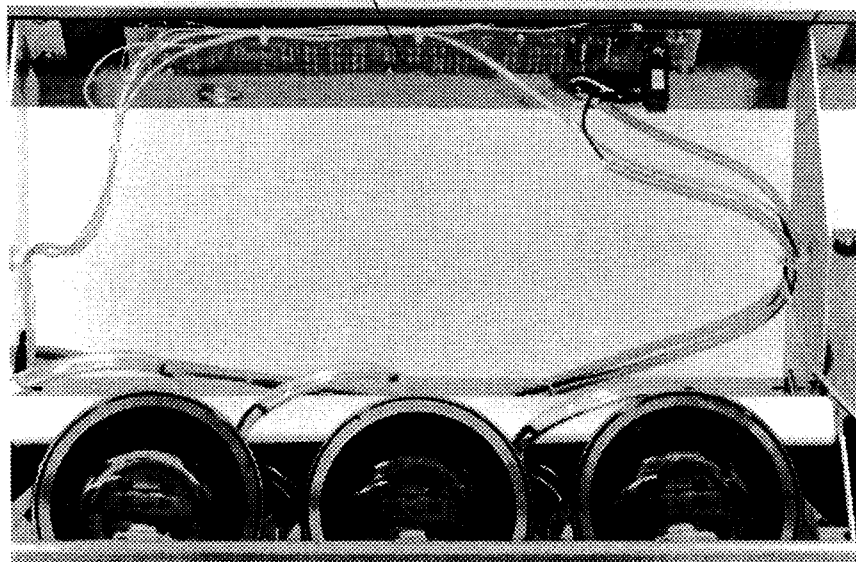
* NUMBERS REFERRING TO PICTURE

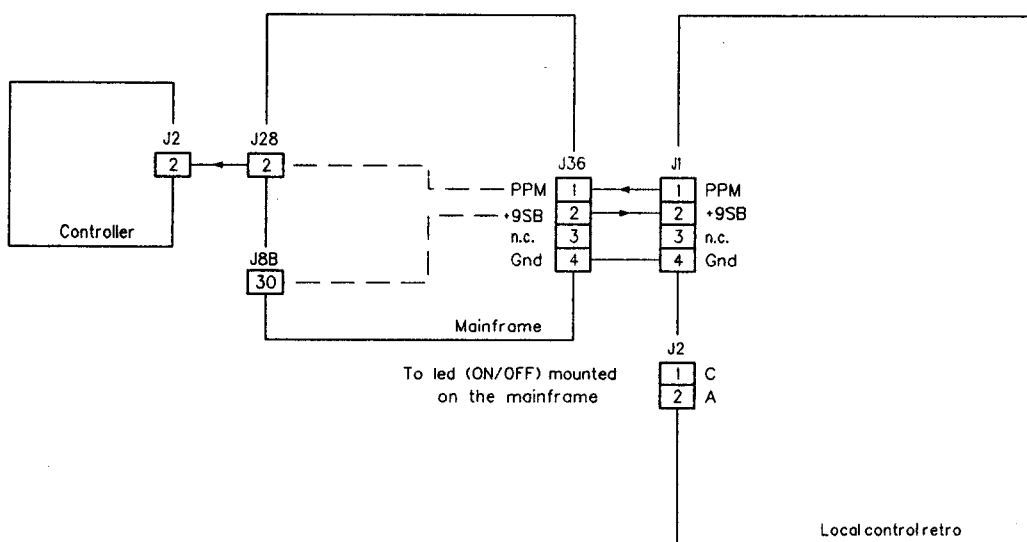
BOTTOM VIEW





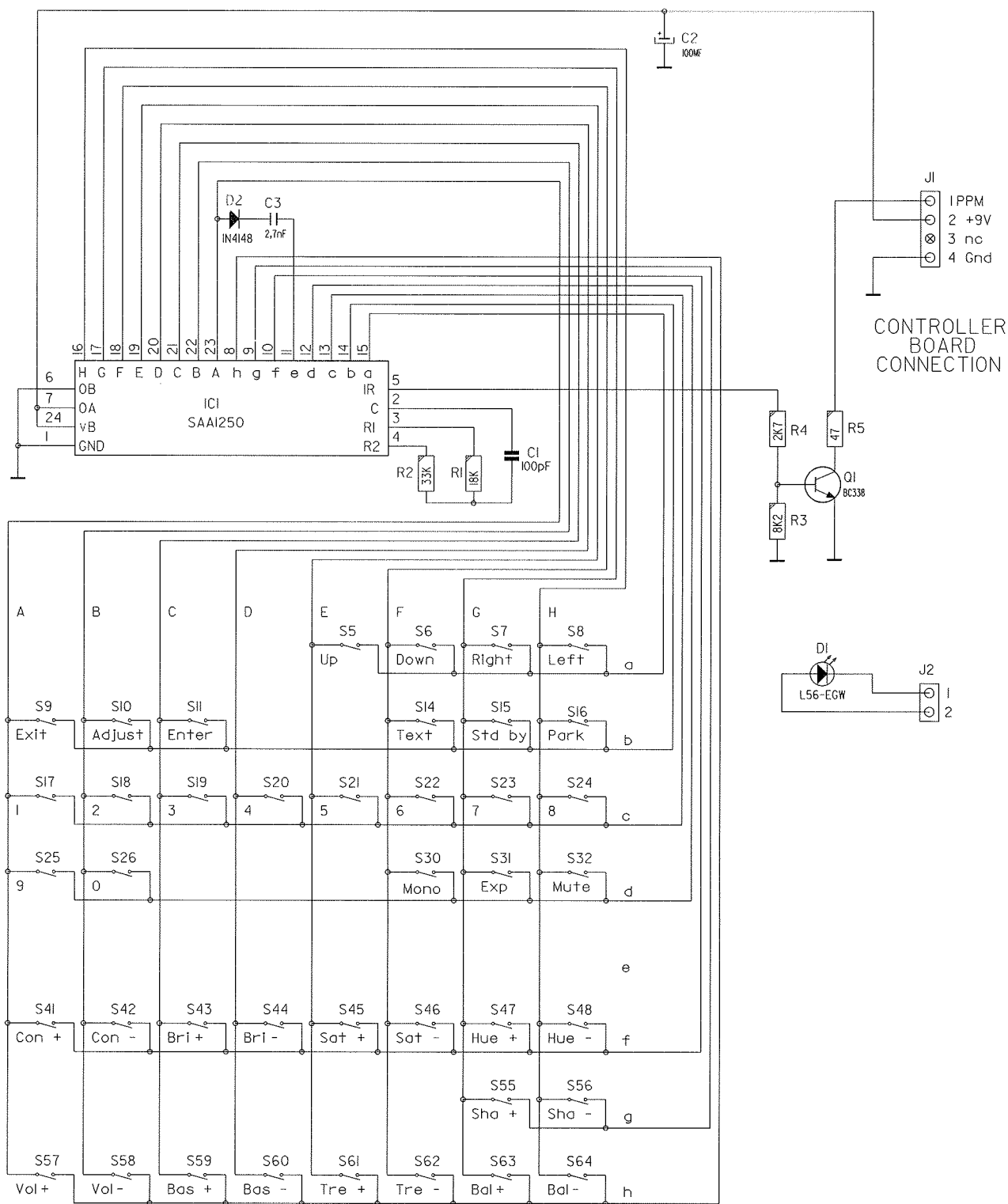
CSB module 79 1656





Name Interconnection local control retro		Article nr. 791656
Date 24/06/1991	Drawn PGOE	Checked GT
BARCO PROJECTION SYSTEMS		

Modifications reserved



Codes on row h are reserved, but keys are not implemented.

Codes marked with '*' reset the SAA1250 address flip flop.

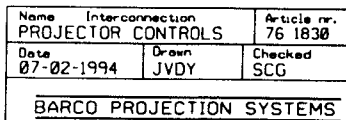
Codes marked with '*I' reset the SAA1250 address flip flop when pressed simultaneously.

Code marked with 0I (SI) emits command 00, and will be ignored by the receiver when accompanied by address 0.

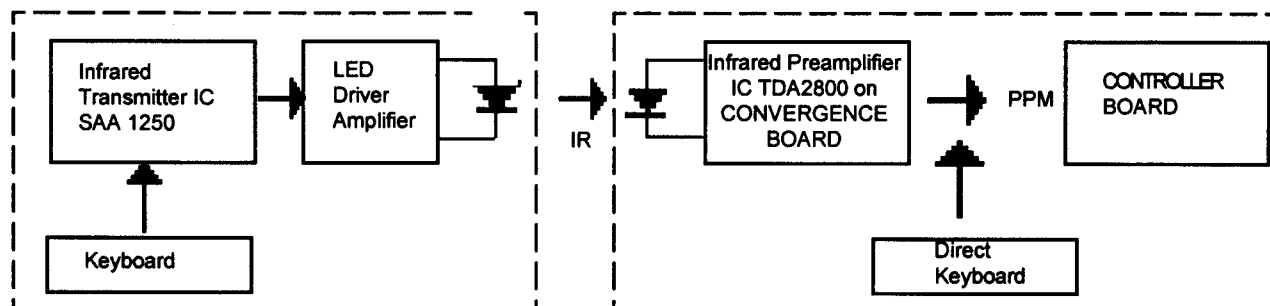
Modifications reserved

Name	Local control retro	Article nr.	791656
Date	21/06/1991	Drawn	PGOE
		Checked	GT

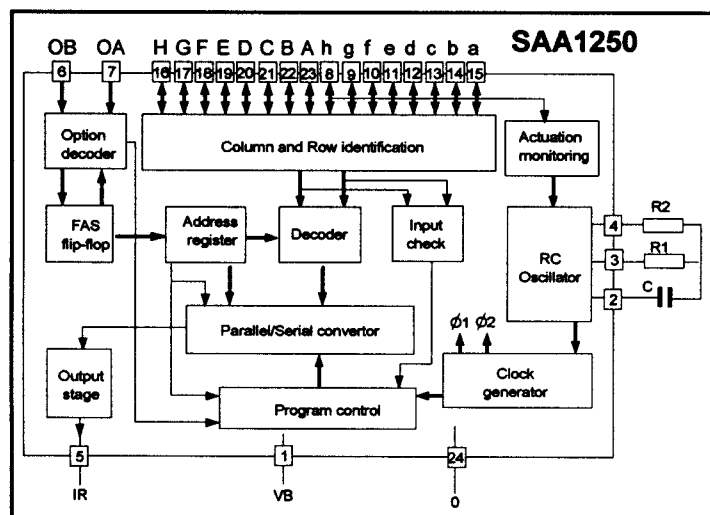
BARCO PROJECTION SYSTEMS



BLOCK DIAGRAM



BLOCK DIAGRAM IC SAA1250



Code for the OA and OB address inputs

input	OA	OB
option I	H	H
option II	H	L
option III	L	H
free address selection	L*	L*

* L impulse (min.30us)

Used option:

Option II: alle commands are sent with address 15

Command table of the infrared transmitter IC SAA 1250

Command	Input code		Option II
No	a b c d e f g h	A B C D E F G H	Address 15
S5 Down	x		
S6 Up	x		
S7 Right	x		
S8 Left	x		
S9 Exit	x	x	
S10 Adjust	x	x	
S11 Enter	x	x	
S14 Text	x		
S15 Stdbyp	x		
S16 Pause	x		

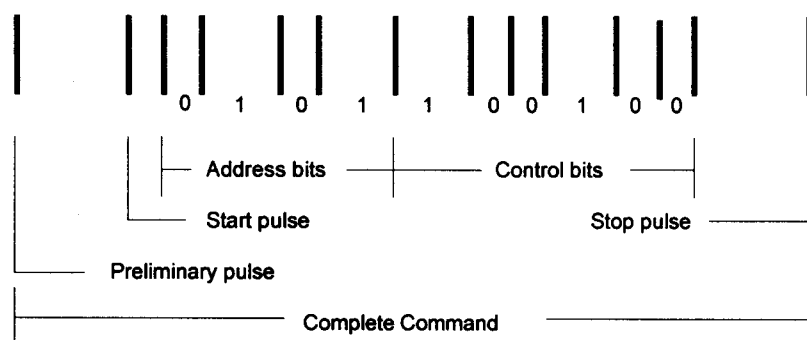
Command table of the infrared transmitter IC SAA 1250 (continuu)

Command	Input code		Option II
No	a b c d e f g h	A B C D E F G H	Address 15
S17 1	x	x	
S18 2	x	x	
S19 3	x	x	
S20 4	x	x	
S21 5	x	x	
S22 6	x	x	
S23 7	x	x	
S24 8	x	x	
S25 9	x	x	
S26 0	x	x	
S30 Mono	x	x	
S31 Exp.	x	x	
S32 Mute	x	x	
S41 Contr+	x	x	
S42 Contr -	x	x	
S43 Bright+	x	x	
S44 Bright -	x	x	
S45 Sat+	x	x	
S46 Sat -	x	x	
S47 Tint+	x	x	
S48 Tint -	x	x	
S55 Sharp+	x	x	
S56 Sharp -	x	x	
S57 Vol+	x	x	
S58 Vol-	x	x	
S59 Bas+	x	x	
S60 Bas-	x	x	
S61 Tre+	x	x	
S62 Tre-	x	x	
S63 Bal+	x	x	
S64 Bal-	x	x	

Operational mode

According to Table above, the SAA 1250 operates in one mode, which is determined via the OA (L) and OB (H) address input (see table on preceding page).

The first command is given about 20ms after contact actuation. All following commands are sent periodically every 130 ms.



The signals are transmitted by means of infrared light in the shape of packages pulses. For the transmission of a 10-bit word, 14 pulses are required. The binary information of a bit is contained in the time interval between two pulses. We define the time T (approx. 100us) as the basis for the code to be employed.

duration T = binary digit "0"

duration 2T = binary digit "1"

Spacing between preliminary pulse and start pulse 3T. This is followed after a 1T by the 11 data pulses and terminated after a 3T interval by the stop pulse.

Control Switch Module

79 1656

Part listing Control Switch Module 76 1656

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION
11 2242	C..1	C NPO MI 100P J5 63	32 4133	S.17	SWITCH PUSH 1A T D6 BLA ITT
11 1147	C..2	C ELAX 100M T 16	32 4133	S.18	SWITCH PUSH 1A T D6 BLA ITT
11 2744	C..3	C CE MI 2K7 K5 63	32 4133	S.19	SWITCH PUSH 1A T D6 BLA ITT
13 1674	D..1	D LED D5 RED/GRE	32 4133	S.20	SWITCH PUSH 1A T D6 BLA ITT
13 1621	D..2	D 1N4148 SWITCH	32 4133	S.21	SWITCH PUSH 1A T D6 BLA ITT
72 1632	D..3	SMCDIOSPACER LED5	32 4133	S.22	SWITCH PUSH 1A T D6 BLA ITT
13 7371	L..1	U 1250 SAA IR TRAMIT	32 4133	S.23	SWITCH PUSH 1A T D6 BLA ITT
31 3944	J..1	J CT-MT MBS P 4 2	32 4133	S.24	SWITCH PUSH 1A T D6 BLA ITT
31 3942	J..2	J CT-MT MBS P 2 2	32 4133	S.25	SWITCH PUSH 1A T D6 BLA ITT
78 0101	PC..	PCB PJ 49 R CSB	32 4133	S.26	SWITCH PUSH 1A T D6 BLA ITT
13 1424	Q..1	Q BC338 N 25 / 0A8	32 4133	S.30	SWITCH PUSH 1A T D6 BLA ITT
10 11512	R..1	R CF H 18K G 0W25	32 4133	S.31	SWITCH PUSH 1A T D6 BLA ITT
10 1154	R..2	R CF H 33K J 0W25	32 4133	S.32	SWITCH PUSH 1A T D6 BLA ITT
10 1147	R..3	R CF H 8K2 J 0W25	32 4133	S.41	SWITCH PUSH 1A T D6 BLA ITT
10 1141	R..4	R CF H 2K7 J 0W25	32 4133	S.42	SWITCH PUSH 1A T D6 BLA ITT
10 1120	R..5	R CF H 47E J 0W25	32 4133	S.43	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S..5	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.44	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S..6	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.45	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S..7	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.46	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S..8	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.47	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S..9	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.48	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S.10	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.55	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S.11	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.56	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S.14	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.57	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S.15	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.58	SWITCH PUSH 1A T D6 BLA ITT
32 4133	S.16	SWITCH PUSH 1A T D6 BLA ITT	32 4133	S.59	SWITCH PUSH 1A T D6 BLA ITT
			32 4133	S.60	SWITCH PUSH 1A T D6 BLA ITT
			32 4133	S.61	SWITCH PUSH 1A T D6 BLA ITT
			32 4133	S.62	SWITCH PUSH 1A T D6 BLA ITT
			32 4133	S.63	SWITCH PUSH 1A T D6 BLA ITT
			32 4133	S.64	SWITCH PUSH 1A T D6 BLA ITT

Spare parts Control Switch Module 76 1656

ART.NO.	DESCRIPTION	QUANTITY	ART.NO.	DESCRIPTION	QUANTITY
13 1424	Q BC338 N 25 / 0A8	1	31 3944	J CT-MT MBS P 4 2	1
13 1621	D 1N4148 SWITCH	1	32 4133	SWITCH PUSH 1A T D6 BLA IT	41
13 1674	D LED D5 RED/GRE	1	72 1632	SMCDIOSPACER LED5	1
13 7371	U 1250 SAA IR TRAMI	1			
31 3942	J CT-MT MBS P 2 2	1			